# Final Year Project Report

# school E-portal system.


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**University of Management and Technology**

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# Dedication

We dedicate our work to our parents whose words of encouragement and push have always been a source of constant motivation. We'd also like to extend our dedication to our teachers who inspired us to excel in life and for instilling a love for learning in us.

## Final Approval

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# Acknowledgment

In the name of Allah, the Most Gracious, the Most Merciful, all praises to Allah for the strengths and His blessing in completing this project. He has helped us in every phase of life and without His blessings it was impossible to finish what we started.

We'd like to pay our gratitude to our supervisor, Ms. Emmen Farooq for providing necessary details and resources to complete our project. This work would not have been possible without her guidance, kindness and encouragement.

Finally, we thank all those who have helped us either directly or indirectly in the completion of our project. Anyone missed in this acknowledgement are also much appreciated. If we left to mention someone's name here, we apologize for that. Again, we would like to express thanks to everyone who supported and helped us during work.

| | |
|---|---|
| **Project Title** | School E-Port System (Web Application |
| **Objective** | To provide a platform toStudents and Teachers to communicate and share the learning resourses. This Application will provide a portal to view the couses and files shared. |
| **Undertake by** | Syed Abdul Qadeer, Aneel Manzoor, Ahmar Gill |
| **Supervised by** | Ms. Emmen Farooq |
| **Starting Date** | Sept, 2015 |
| **Completion Date** | March, 2016 |
| **Tools Used** | Notepad++ (PHP), MYSQLDatabase using WAMP server. |
| **Operating System** | Microsoft Windows 8 |
| **Documentation** | Microsoft Word 2010 |

# ABSTRACT

The point of this work is to plan and execute an E-gateway application for a School. A School E-Portal is a one-stop customer arranged web application that customizes instruments and data to the particular needs and attributes of the client, utilizing data from Department databases. It is the one and only place to get data and it can give a standard arrangement of devices. The guests can universally access their data. It totals a chose subset of data into a focal area Moreover; it is intended to encourage joint effort and to facilitate the stream of data in an association.

A hypothetical model addressing the essentials of the School E-Portal is displayed. The model is refined and changed into a design model considering the system requirements. The E-door model has been completed with the finished objective of testing. The proposed system outline consolidates three-layers; the proposed layers are Data layer, Organization layer and Presentation layer.

The Presentation layer is the thing that the customer sees and controls. Through the interface, the customer is offered access to each one of the advantages in the passage he or she has induction to. The organization layer holds most of the value in the door, it is distributed a couple parts, each with its own specific task that were recognized in the essential examination as organizations. Most of these fragments have a relating GUI portion in the presentation layer and talk with each other. The information layer is a tenacious storeroom for information. Information in the entry is truly put away in two areas: A social database and a record vault subsequent to the E-gateway underpins document download and –upload.

The web-entryway has been assembled in view of open source advances. The language used to actualize the School E-Portal, utilizing PHP programming language. MYSQL express server is utilized for the databases. CSS and HTML are a piece of the innovation used to actualize the graphical client interfaces of the framework.

# REVISION CHART

| Version | Primary Author(s) | Description of Version | Date Completed |
|---|---|---|---|
| *Draft* | All members | Requirement gathering and information gathering | 10/08/2015 |
| *Preliminary* | All members | Functional and Non Functional Requirement | 15/08/2015 |
| *Final* | Abdul Qadeer, Aneel Manzoor | GUI, Use Cases and Diagrams | 1/09/2015 |
| *Revision 1* | Abdul Qadeer, Aneel Manzoor | Revised draft, GUI's Usecases, Sequence Diagrams | 20/09/2015 |
| *Revision 2* | All members | Revised draft, GUI's Usecases , Usecase Model | 27/010/2015 |
| *Revision 3* | All members | Revised Functional Non Functional requirements , Class diagram. | 15/12/2015 |
| *Revision 4* | Ahmar Gill Aneel Manzoor | Revised Draft , Data Flow diagrams | 11/01/2016 |
| *Revision 5* | All members | Revised Draft, Use cases, Architecture Diagram, Class Diagram, GUI's | 02/02/2016 |
| *Revision 6* | All members | Revised whole documents | 12/03/2016 |

# Contents

# 1. CHAPTER ONE : GENERAL INTRODUCTION

## 1.1 Introduction

Associations need to give convenient, significant data to clients, representatives, and accomplices anyplace on the planet keeping in mind the end goal to meet today's business necessities. It is vital that data does not get lost or get to be immaterial and obsolete. A decent arrangement is to make and convey profoundly applicable substance on a gateway. Entrances can be utilized to enhance record administration, correspondence and coordinated effort, data get to and sharing, and evaluation and reporting in instruction. They can be customized for various sorts of clients, for example, Students educator's folks, government offices, and directors. Significant and applicable data and administrations can be made accessible to clients to empower them to be more viable and effective in their learning errands. Server farm is a brought together storehouse where various servers are grouped together to have various applications and stores a colossal measure of information. The essential objective of server farm is capacity and control of information and serves the client's solicitation proficiently all the time.

This part clarifies the E-Portals foundation, their part in the scholastic and institutional field, the plausibility and advantages behind executing E-entry based server farm for Schools, and what E-gateway applications are utilized as a part of advanced education. A writing review, theory format and targets will likewise be exhibited in this section.

An E-entryway is a passage to the Web that permits composed data to the clients through a solitary section point. A decent E-Portal knows the individual utilizing it and it changes with the person. It goes about as an individual's close to home aide, prepared to follow up for his or her benefit.

The E-entry is a domain through which a client can access online data and instruments from a solitary web area. The E-entry is intended to show just the data and apparatuses that every client needs, without the disorder of data and devices he/she doesn't use. The E-entryway is not simply one more landing page; it is a customized perspective of online data. Contingent upon the client, the E-gateway will incorporate access to institutional information, individual information,

profitability instruments, and other data of interest. Figure (1.1) demonstrates the legitimate engineering of a datacenter coordinates with a disseminated E-Portal application that associates the diverse segments or divisions of a Department or foundation showing the primary thought of sharing the and controlling the same wellspring of data and information; all offices are associated locally or comprehensively through a system framework to serve all clients inside of the Department or establishment.

The datacenter might fluctuate from a solitary server to numerous servers including database, document, and web servers that constitute the electronic datacenter.

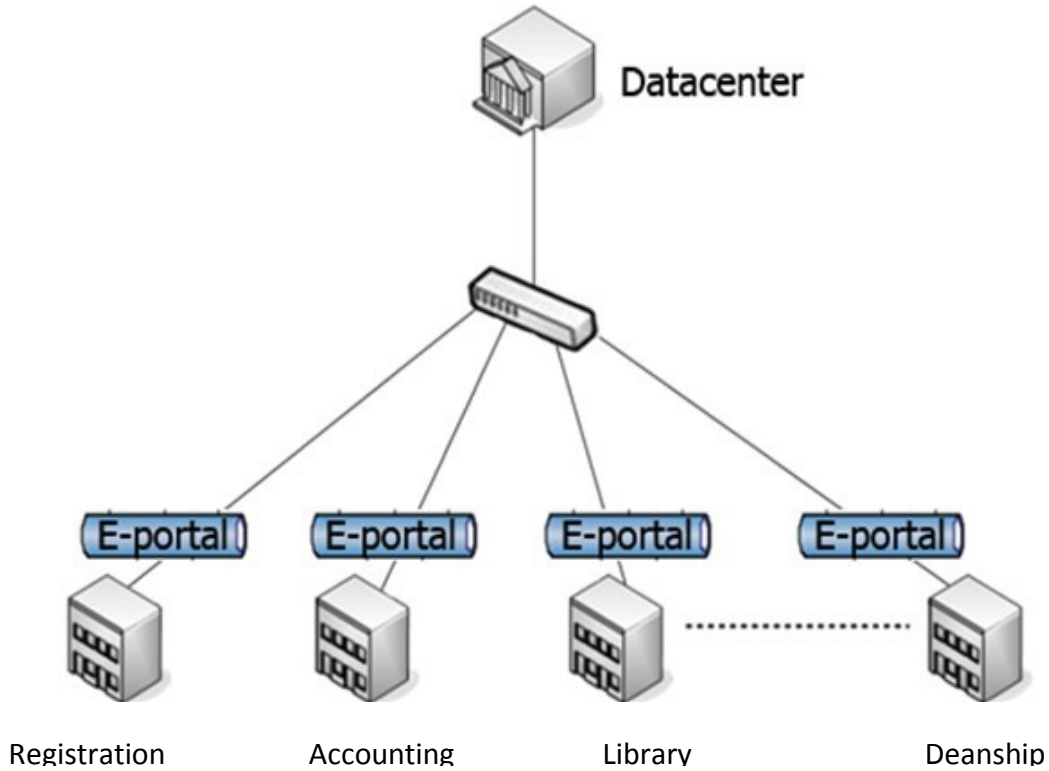



**Figure (1.1): A distributed E-portal for a Datacenter[1].**

One of the more imperative parts of an E-gateway is the capacity to design and customize the E-gateway, hence making the E-Portal one of a kind to every person. Clients might arrange the E-Portal to show those elements they wish to see. The components accessible to any one individual might be distinctive, contingent upon the way of their association with the association. A Department E-entryway is a one-stop customer arranged site that customizes the E-gateway's apparatuses and data to the particular needs and attributes of the individual going to the site, utilizing data from Department databases.

E-gateways offer various channels including reports and archives required for class assignments, logbooks, regulatory data, for example, evaluations and degree reviews, grounds news and occasions, reference materials, et cetera. E-entryways offer the accompanying advantages to Students:

- Increased and less demanding correspondence with employees
- Online access to courses
- Access to groups of enthusiasm inside of Department, for example, clubs, games, and group administration opportunities

  Access to most recent Department news
- Increased long lasting learning opportunities Other advantages for staff individuals include:
- Instant access to data for exhorting Students
- Simplified course administration apparatuses
- Real-time correspondence with Students

## 1.2 **Department E-portals and Higher Education**

Advanced education needs a cutting edge framework that will permit our organizations to be client focused, to build up and keep up long lasting associations with people, and to give customized, secure and consistent associations with all constituents. Keeping in mind the end goal to incorporate numerous frameworks and applications, associations have swung to the utilization of E-entry innovation the accompanying figure (1.2) presents the general design of a Department E-entry framework:

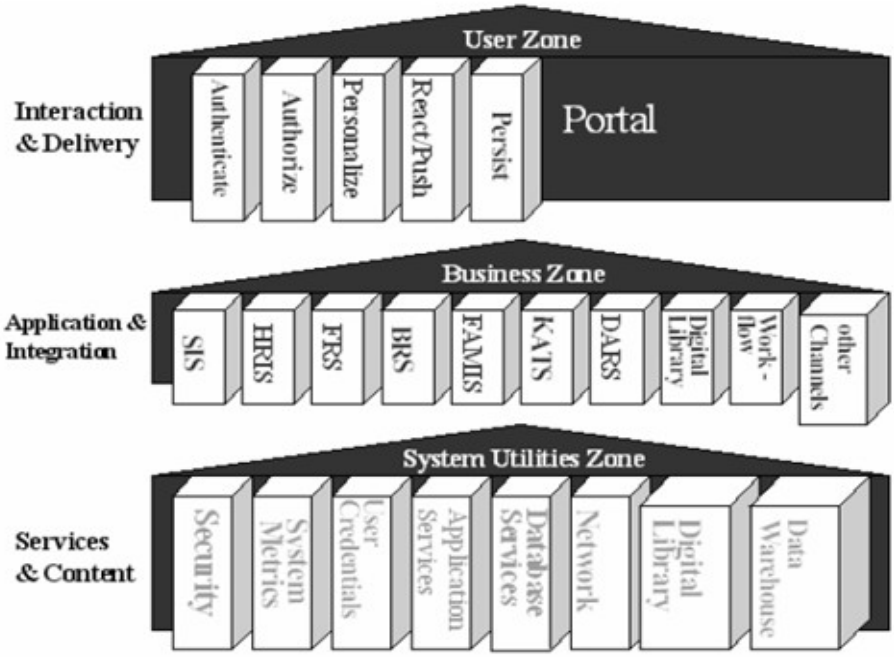



**Figure (1.2): Architecture of a university E-portal system[2].**

The definition of instructive capacities turns out to be more point by point as a specific sort of instructive methodology is particularly picked inside of a foundation. Inside of one establishment, a few instruction methodologies will be utilized. Subsequently, the offices that are important inside of an E-gateway ought to be general of nature and versatile for every system or venture. Table 1.1 gives an outline of cases for the use of innovation in advanced education.

Table 1.1 Types of technology applications related to categoriesof course support in highereducation.

| **Major EducationalUse** | **Examples of Technology Applications** |
|---|---|
| Discussion Forums | This is a device for discourse among an address and his understudies and/or among understudies and their associates. It can be seen by date, string, creator, and bunch or by |
| Communication | An instrument for appointing understudies to examination gathering gatherings, appraisals or group specific course content, understudies can post any sort of dialog here too, or transfer some applicable learning materials for the gathering. |
| Files or Resource sharing | This is an understudy's private organizer into which he/she can transfer and download records, submit assignments utilizing drop box, share the substance of his own organizer with his/her teacher and/or peers. |
| Secure Course Data | Teacher can allocate distinctive level of access to his/her course on the accompanying pre-characterized parts: teachers, understudies, and visitors in a joint effort with the framework manager |
| Timeline | Device for understudies to view every one of their assignments, due dates, and due dates in their individual online timeline |

## 1.3 Benefits behind Implementing Department E-portals

The accompanying reasons are the reason Schools are executing E-entryways:

- Integrate data and administrations.
- Improve administration to Students/staff.
- Offer customized/altered/focused on administration.
- Improve organization proficiency.
- Attract Students.
- Enhance Department picture/raise profile.
- Engage/associate/form group.
- Offer separation/adaptable learning.

An all around actualized Department E-Portal can offer various advantages to a client of the framework; these advantages can be compressed as takes after.

## 1.4 A Standard Set of Tools

Guests get an arrangement of devices such as electronic email and calendaring programming that finishes them their whole time at the Department. They don't need to utilize one apparatus for class, another instrument for their work, and so forth. Likewise, since these apparatuses all work inside of the E-entryway system, they all have a reliable appearance and feel and work comparably, lessening learning time.

## 1.5 Global Access to Their Information

The just thing required accessing the E-entryway and a related apparatus is a web program. There's no compelling reason to design email programs, and so forth.

An individual can be at anyplace on the planet, (for example, away at a meeting) and still get the data they require.

## 1.6 Personalized and Customized Information

The data accessible in an E-gateway is customized for every person. Likewise, this individual can then alter this data further to suit his or her individual tastes. Am E-entry puts control of their web involvement in the hands of the general population utilizing the web, not the general population fabricating the sites. The E-entry ought to give access to data identifying with a wide assortment of exercises. In any case it will presumably focus on instructing and learning and Students organization. Different ranges will likewise become an integral factor: library administrations, monetary administration, research organization work force organization and domain administration.

## 1.7 Literature Survey

- (Shilakes and Tylman, 1998) [3] Are two industry examiners working for Merrill Lynch, instituted the expression "Venture Information Portal" in their business report dated sixteenth of November 1998, and subsequently characterized this new speculation space. They characterized such a framework as: "Big business data entryways are applications that empower organizations to open inside and remotely put away data, and give clients a solitary portal to customized data expected to settle on educated business choices". This report clarifies in subtle elements how the E-Portal, portlets and workbenches are experienced by a client. Besides, an arrangement of contentions for the presence of corporate entrances is put forward, alongside the prerequisites these contentions lead to. The report states likewise an arrangement of practical parts ordinarily found in corporate entryways.
- (Moemedi Bin iRamorathudi, 2002) [4] Discussed the requirement for a data innovation framework to encourage cross-unit coordinated effort in the Botswana Defense Force (BDF). The current conventional method for correspondence and data sharing among the BDF units and bases don't meet the present prerequisites and might adversely affect efficiency and mission availability in the BDF. The theory inspects the issue in the setting of outlining and executing an Enterprise Information Portal (EIP). This would encourage the coordinated effort and the stream of data inside and among units all through various locales in Botswana. The way to deal with the issue includes characterizing an EIP, assessing the advantages of an EIP and

evaluating innovations basic to executing an EIP. A marketable strategy is displayed to give a rule to actualizing the Botswana Defense Force Enterprise Information Portal (BDF-EIP).

- (Peter A. Wu, 2002) [5] Developed vertical web entryways (vortals) that satisfy focused on authoritative mission needs. This particular sort of entry gives thin perused information, data and administrations while managing the client openness over an open system, for example, the Internet. As a feature of the examination, a technique for architecting such gateways were given express thought of security strategy.
- (Fengchun, Zhu Aihua, and Wang YanbingJu, 2004) [2] Gave a diagram of a Department data entry. This article presented a necessity gathering philosophy for School E-portal to fabricate a helpful framework. Additionally, it showed the center elements of a Department entrance and its design. The following stride as demonstrated by this article should be done is to manufacture our own particular Department gateway.
- (Saifur-Rehman Butt, 2006) [6] Built a system to enhance learning sharing and choices made about data access all through the association in light of the fact that the association needs to share data among representatives, found data that is hard to discover, pushed data to clients, or make a focal area to explore through information that representatives can profit by and demonstrate the convenience of appropriate substance administration or data administration by proposing a legitimate arrangement and he took a gander at from the engineers point of view that how the progressions can be made to put old applications work under Portalization and the tips to use in growing new gateway prepared applications. WebSphere entryway improvement stage was utilized to clarify the entire technique of gateway application advancement and arrangement.
- (Marc Friedenberg, 2006) [7] Described the outline and advancement of a model geocollaborative Web entry intended to help in crisis emergency reaction. A model was then created utilizing the Macromedia Flex rich Internet application environment. A heuristic assessment, combined with examination with clients from an assortment of foundations, educated advancement of a second form of the model,

predictable with client focused standards. This work adds to the field through its emphasis on distinguishing proof of framework elements and apparatuses.

- (Maria Kirilenko, 2009) [8] Developed a web-entry that would help Russian forthcoming candidates in affirmation procedure and numerous other instructive matters. The center of this proposition is on the advancement and usage of the web-entry for Kemi-Tornio Department of Applied Sciences (from now on KTUAS). Surveys and meets had been performed among Students and staff individuals keeping in mind the end goal to show signs of improvement comprehension of their necessities, inclinations, desires and proposals to the web-gateway. That information was broke down and actualized to the web entryway. As a consequence of the valuable research, coordinated with surveys and meetings, the scientist brought a commonsense showing of the web-gateway that had been manufactured in view of open source innovations, alongside methods for advancing it.
- (Kamla Ali Al-Busaidi, 2010) [9] Examined the qualities and shortcomings of a corporate entryway sending at a scholastic organization in view of employees' recognitions. This pilot examination has made the examination in an open scholarly organization, Sultan QaboosDepartment (SQU), in Oman. This study delineated that the organization of a corporate gateway at a scholarly establishment is moderately effective. The outcomes uncovered that the qualities of the corporate entryway are principally identified with data quality, framework quality and perceived individual advantages; though the shortcomings are essentially identified with framework quality and few are identified with data quality and bolster administrations quality. Moreover, this study gave a few bits of knowledge, for scientists and professionals, on a few parts of corporate entry at a scholastic organization, for example, utilization, qualities, shortcomings and achievement elements. The qualities and shortcomings investigation demonstrated that the arrangement of the corporate entryway at SQU is moderately seen as a win by the employees (the study respondents).

## 1.8 **Thesis Objectives**

- The fundamental targets of this work can be compressed as takes after:

- Design and actualizing an E-entryway application for a scholarly or a Department in light of the prerequisites of Students, staff workforce and directors in the Department or organization.
- Investigating and appraisal of the accessible advances utilized for the E-gateway execution and choosing which innovation is helpful to utilize.
- E-entryway prototyping and testing.

## 1.9 **Thesis Layout**

- **Chapter 2:** presents the E-entryway ideas including more exact definitions, development, sorts, and arrangements. This section additionally depicts in subtle elements the general engineering, worldwide components, administrations, innovations utilized.
- **Chapter 3:** clarifies the Design of a layered engineering for a scholastic organization or a Department E-Portal application. The components have been produced on the premise of the necessities presented by writing considers; point by point framework configuration will be introduced in this part.
- **Chapter 4:** clarifies the application prototyping and testing. The E-entryway application was produced and executed upon the E-gateway ideas clarified in section two by indicating what parts of E-entries are utilized in Schools. This section likewise talks about the innovation utilized in the execution stage.
- **Chapter 5:** presents the conclusions got from this work and gives proposals for future works.

# 2. E-PORTAL CONCEPTS & TECHNOLOGIES

## 2.1 Introduction

The past section has depicted an essential comprehension about E-entries and their utilization in scholarly foundations. The primary target of this part is to give a full comprehension about E-Portal ideas in more points of interest including great definitions from various perspectives, E-gateway eras and advancement, E-entryway sorts and classifications, the worldwide components of E-entries, the advances utilized for the execution of E-entryways and the general engineering of an E-entry application.

## 2.2 Portal definitions

Entryways are the cutting edge desktop, conveying e-business applications over the Web to a wide range of customer gadgets. Entries furnish site clients with a solitary purpose of access to numerous sorts of data and applications. Notwithstanding where the data dwells or what position it is in, a gateway totals the majority of the data in a way that is satisfying and important to the client. A complete entryway arrangement ought to furnish clients with helpful access to all that they have to complete their undertakings.

Entries have been characterized from multiple points of view and they have a great deal of definitions characterized by various associations and sellers yet every one of them serve the same thought or idea that was said above. A web entry gives a client access to substance produced by assorted applications unified. Here's another definition from Sun Microsystems, which characterizes "entryway" in its Java Portlet Specifications (JSR 286) as takes after: "A gateway is an online application that usually gives personalization, validation, and substance accumulation from various sources and has the presentation layer of data frameworks".

This definition expresses that an entrance is a sort of web application that totals content from various sources, sites or web applications. The substance produced by these sites can be static or element. As expressed in the Sun Microsystems definition, an entry gives personalization, whereby the client can choose what applications ought to be at first shown on the individual entryway page. The client can design this page at whatever time by including and uprooting diverse applications. Distinctive sites offer a few different definitions, all of which portray

entries as client adjustable sites that serve as doors to enhanced substance emerging from different sources. Be that as it may, these definitions disregard to portray a critical element of today's gateways [10].

## 2.3 Portal Generations(Evolution)

Inthisview,theevolutionoftheportalconceptcanbetracedback right to times dating beyond the early beginnings of the World WideWeb (as reported in Berners-Lee &Fischetti, 1997; Krishnan, 2004;Tuomi, 2002)[11].

### 2.3.1 The Static Portal:

In times before the World Wide Web in a period that we can call a primordial age, a gateway was utilized to share content. The substance shared was static in nature and referenced by connections. In daily papers, for instance, the front page would allude to the substance of the daily papers in that issue. At the point when the substance of the daily paper would be change for the following day, the front page, as an entryway, would change, as well. Entries planned around then have the basic capacity of being pointers to more nitty gritty substance [11].

### 2.3.2 The Basic Dynamic Portal:

Static connections can't take into account any sort of energized substance on the Internet. Inthe second stage, with the coming of PC graphical interface, the WWW got to be easy to use. With ease of use, there has been an extraordinary increment in substance volume and the progress of progress of that volume. One of only a handful couple of routes by which to understand the WWW has gotten to be to hunt down particular substance without knowing precisely what one was searching for; that is, by utilizing a web crawler. Fast and emotional changes in substance of entrances require to bode well with and to create seek capacity [11].

### 2.3.3 The Portal as a BusinessEnabler:

From the begin, the dynamic way of the Web has made it a perfect medium for leading organizations in what can be known as a third phase of the development of entryways. Associations speak with client, accomplices, and partners in a shoddy and compelling way through the Internet. Data is "composed" to make it valuable. Data is customized to take into

account distinctive target gatherings of people. This stage additionally saw the development of industry particular virtual entryways or portals[11].

### 2.3.4 The Portal as a Collaboration Platform:

As of late, it has been understood that the Web can be utilized as an effective stage for coordinated effort. This late period has seen the ascent of texting, Web-based groups, et cetera. An entryway is observed to be the perfect single point for collective figuring. Once more, entrances develop to incorporate a larger amount of many-sided quality and sets of flow[11].

### 2.3.5 The Portal as a Service Enabler:

Today, the Web is an administration empowering influence. With the appearance of Web administrations, associations have let their capacities distributed and in addition be conjured specifically over the system. Gauges like SOAP, WSDL, UDDI and ebXML have risen. Gateways of today can devour and associate with Web administrations.

Outlining the diverse above developmental steps (Table 2.1) makes it very clear that the entry idea is a hearty idea and has realized an outline grid that can be stretched out to tackle new administrations when requirements or open doors for these emerge[11].

| Functions of portals | | | | | | | |
|---|---|---|---|---|---|---|---|
| Types of portals | | Content | Search | Organization | Personalization | collaboration | Web Services |
| | Static | X | | | | | |
| | Basic dynamic | X | X | | | | |
| | Business enabler | X | X | X | X | | |
| | Collaboration platform | X | X | X | X | X | |
| | Service Enabler | X | X | X | X | X | X |

**Table (2.1): Portal evolution[11].**

## 2.4 Portal types andcategorization

Amid the inquiry on the entrance sorts it was found that entries have numerous sorts and can be characterized into numerous classifications, in this segment one can discuss these classifications and what sorts of entryways fall inside of every class; for instance we can classifications gateways as per the administrations which they accommodate clients or workers; entry sorts, for example, (individual, scholarly, territorial web, legislative, and corporate entries. [12]

Another classification of gateways can be characterized by focused crowd or the particular needs of a particular gathering of individuals, this class has a few sorts of entryways as it has been said before in section one and they are : level entries, vertical entryways, and undertaking entries which can be either vertical concentrating on a particular application, for example, bookkeeping or money related guide data, or flat offering access to all the data that a person inside of the Department needs to complete his or her capacity. [2]

One final class ought to be incorporated into this arrangement which is the classification in which entryways are grouped by framework used to execute gateways for example, (participant, web, and extranet). As long s the entrance is an online application containing the cooperative and numerous other group includes the entry must be executed in one or more base of these bases. Here are the entrance sorts inside of classes in more points of interest[2]:

- Category1: According to focused gathering of people.
- Category2: According to business administrations.
- Category3: According to foundation utilized.

### 2.4.1 CategoryOne:

This category can be mainly classified into three types[2]:

#### 2.4.1.1 Vertical Portals:

Give access to an assortment of data and administrations around a specific region of hobby. Vertical entrances are intended to address the necessities of a client populace with particular connections to the association.

#### 2.4.1.2 Horizontal Portals:

Level entryways which meet the broad needs of a generally various client populace. Level entryways are regularly alluded to as megaportals. These gateways focus on the whole Internet group, for instance, Yahoo.com or Lycos.com is megaportals. These locales regularly contain web indexes.

#### 2.4.1.3 Enterprise Portals:

This sort of gateways can be either vertical concentrating on a particular application, for example, bookkeeping or money related guide data, or level offering access to all the data that a person inside of the Department needs to do his or her capacity.

### 2.4.2 Category Two:

The category of portals are classified according to the typeof services that portal provides to the enterprise or corporation and itincludes the following types of portals [12]:

#### 2.4.2.1 Personal Portals:

An individual entryway is a gateway that an individual can redo to meet his or her prerequisites and suit his or her tastes. Illustrations of these incorporate My Yahoo! what's more, iGoogle.

#### 2.4.2.2 Academic Portals:

A scholarly entrance addresses the requirements of academicians. An illustration of a run of the mill scholastic entrance is uPortal (http://www.uportal.org/), a sharable gateway a work in progress. Hurray! what's more, Google give adjustable gateway locales; It underpins coordinated effort with the assistance of a few group devices, for example, talk, gatherings, overviews, etc

#### 2.4.2.3 Regional WebPortals:

A local web entryway gives data applicable to a particular geographic area. Such data may comprise of climate conjectures, road maps, neighborhood news, and shopping. One such famous territorial web gateway in India is Rediff (http://www.rediff.com). It gives local data identified with travel, nearby news, stocks, marriage.

#### 2.4.2.4 Government WebPortals:

Many governments worldwide provide portals for their citizens. Onesuch portal is The National Portal of India (http://india.gov.in), whichprovides useful government-related information to its residents, informationfor entrepreneurs who are setting up businesses in India, andtourist information for visitors andstudents.

#### 2.4.2.5 Corporate Web Portals (EnterprisePortals):

Corporate web gateways, otherwise called intranet entryways, have turned into a generally acknowledged standard among enterprises. Today's corporate entries likewise permit the creation and production of work processes that encourage better coordinated effort among the organization's divisions. Corporate web gateways for enormous organizations are likely facilitated on the organization's inside servers; entryways for littler associations may be facilitated on outside servers supplied by administration suppliers.

#### 2.4.2.6 Domain-Specific Portals:

Entryways intended for a specific industry are called space particular entries. For instance, an entry for land specialists conveys an area's operators to a solitary site and permits customers to purchase and offer their properties. Cases of land entries in the U.S.A. incorporate Homes WEB (http://www.homesweb.com/).

#### 2.4.2.7 SportsPortals:

A few entries take into account the requirements of games lovers which cover numerous games. These entryways spread different parts of various games, for example, live scores, live matches, replays, amusement investigation, et cetera.

### 2.4.3 CategoryThree:

Entryway applications in this classification can be essentially characterized into three sorts: venture (intranet) gateways, e-business (extranet) entries, open or uber (Internet) gateways and another sort is close to home (WAP) entrance can be incorporated into this class [13,14]:

#### 2.4.3.1 Extranet portals:

An extranet is a private system that uses Internet conventions, system availability, and potentially the general population telecom framework to safely share part of a business' data or operations with suppliers, sellers, accomplices, clients, or different organizations. Cases incorporate business to client(which can be known as B to C) entrances, which increases the endeavor to clients with the goal of requesting, charging, client administration, et cetera, and opens the business to business gateways (which can be known as B to B), Business to Business augment the organizations for their suppliers and accomplices [15].

#### 2.4.3.2 Intranet portals:

An intranet is a private PC arranges that uses Internet conventions, system availability, and perhaps people in general telecom framework to safely share part of an association's data or operations with its workers [15]. Entries utilize this sort of system foundation are called "Corporate or Enterprise data Portals (EIP)" or "Business to workers (B2E) gateways". The main Idea is to marge qualities of the association, empowering viable implementation of trading procedures [16].

#### 2.4.3.3 Internet Portals(WEB):

A Web entry is a Web webpage that gives a beginning stage or door to different assets on the Internet. The building pieces of entrances are portlets, which contain parts of substance distributed utilizing mark-up languages, for example, HTML and XML [14]. This sort of entries is called Public or Mega (Internet) Portals.

#### 2.4.3.4 Personal Portals(WAP):

Portals of these types are basically embedded with mobile phones or any device which can be connected to internet. Such portals are used to offer sales, marketing shows or show the latest weather details. Although it can increase the complexity while developing with increases of services to be given in portal offers [16].

## 2.5 Portal Characteristics andfeatures

### 2.5.1 Single Sign-On:

It is the capacity for a PC client to get to various frameworks with one username and secret word mix, subsequently dispensing with the need to sign all through various frameworks with partitioned accounts. This element of entryways speaks to a solitary passage or logon to distinguish affirmed clients, making it pointless to sign onto each of the distinctive frameworks that give gateway content, for instance, the e-learning office, or full content substance, for example, computerized diaries [17].

### 2.5.2 Authentication/authorization:

Verification gives diverse components that can be utilized to accept the personality of all entrance clients. Approval figures out if a client has the fundamental benefit to ask for an administration [10].

### 2.5.3 Profiling:

Providing information to individual users or groups of users basedon declared interests and preferences [15].

### 2.5.4 Collaboration:

Joint effort empowers representatives, clients and business accomplices to work with, associate with, and create or keep up substance with other people who offer exercises or hobbies. Cooperation Services give simple components to making dialog gatherings, and visits, furthermore reconciliation with email and calendar tools. Collaboration service aims at providing a setof functionalities that can influence the correspondence between the clients of the entryway, for example, discourse records, talks, and newsgroups [10,16,18].

### 2.5.5 Search:

The entry offers a hunt administration that backings circulated, heterogeneous quests crosswise over various information sources. Pursuit and indexing permits clients to take care of issues

rapidly, since clients regularly need to make specially appointed questions to assemble new data. Seek Services Include distinctive quest components for indexing documents and looking substance in Web pages, databases, and record framework [10,18].

### 2.5.6 User Customization:

A regular gateway prompts the first-run through client by means of a progression of fill-in windows to give data about him/her. This is then put away in the entry's database. At the point when that client validates to the entryway, this data figures out what he will see on the landing page instantly after login [19].

### 2.5.7 Personalization:

Personalization gives the client the capacity to set up inclinations and profiles. An entry empowers the end client to make customization one stride further, in particular to set application parameters, make and alter profiles, include or evacuate connections, and numerous more. The fundamental objective of personalization is to give a way to display the data in light of the client profile, empowering customizations in substance and appearance for various types of clients or gatherings of clients [10,19].

### 2.5.8 Scalability:

It is the office to extend or contract gateway foundation to suit changing quantities of clients or changing necessities [15].

### 2.5.9 Web Services and internettools:

Web administrations are offices to collaborate with frameworks inside of the undertaking and with frameworks of business accomplices. Web devices are webpage inquiry and route apparatuses to give clients simple access to data. Samples are logbooks and organizers to permit clients to info and offer occasions, and in addition Web-website and substance manufacturers, offering them the capacity to make and have redone substance being made accessible as per individual profiles [15].

### 2.5.10 Content Management:

A gateway contains data from various sources, and the data can be overhauled every now and again. Along these lines, an entry ought to give a simple approach to change its substance, while in the meantime attempt to give devices to encourage redesigns to clients, and also executing programmed administrations that catch data overhauled in remote destinations (e.g., bulletins, different entries) [19].

### 2.5.11 E-learning:

An entry can give in the nick of time preparing and improvement of aptitudes or mastery for work. It permits the person to choose the time and place of learning exercises time permitting [10].

### 2.5.12 TechnicalInteroperability:

This part of interoperability covers the specialized issues of connecting PC frameworks and administrations. It incorporates key viewpoints, for example, open interfaces, interconnection administrations, information joining, information presentation and trade, availability, and security administrations [20].

## 2.6 Architecture design

When considering Web portal development, one comes across aset ofbasicWebtechnologiesthatarewidespreadindifferentkindsofWeb applications. Figure (3.4) shows a common architecture forWeb applications[19].

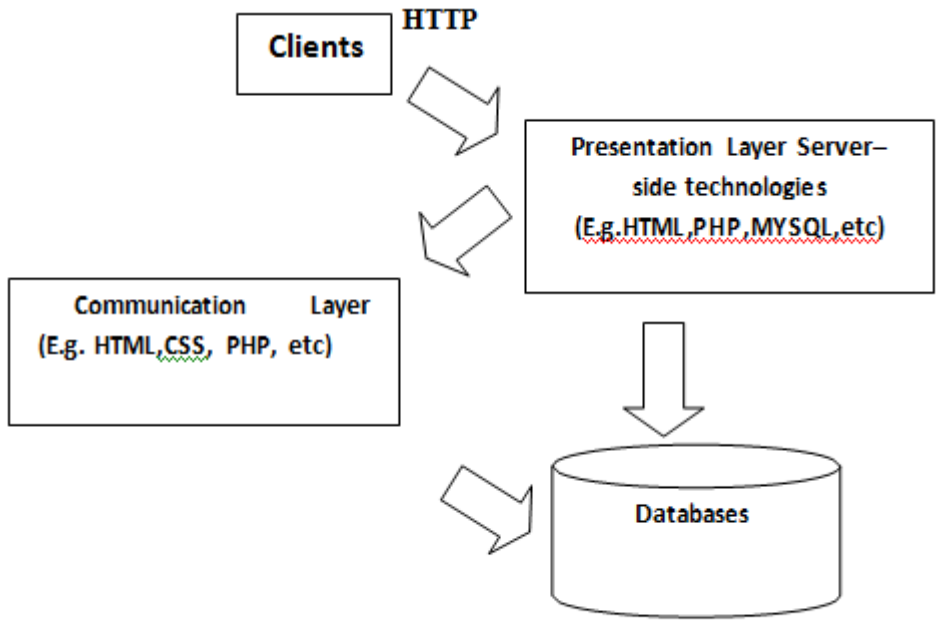



**Figure (3.4): A common architecture[19]**

Such architecture structures the Web system in layers thatimplement different concerns and offer services to upperlayers.

## 2.7 Presentation layer

It actualizes administrations identified with the client interface. It can join advancements that perform server-side preparing, for example, Java Server Pages, Servlets, Active Server Pages (Active Server Pages – PHP Web webpage) or normal passage interface (Common Gateway Interface – CGI Web website) with innovations that perform customer side handling, for example, (Javascript Web website). While the principal offer administrations for speaking with business rules layers furthermore to generate dynamic substance, the last are centered around doing client interface acceptances, for example, checking if the client has filled in the data appropriately. In addition, the substance of the client interface can be made out of various types

of media, for example, sounds, pictures, pictures, films, and hypertext. The presentation layer is circulated in the middle of server and customer, the server-side is in charge of client information handling and substance collection, while the customer side (program) is in charge of substance rendering and getting client enter that is sent to a server for preparing. The client interface permits to get to data as well as permits a client to distribute objects (records, reports, guideline manuals, web joins and so on) to an archive of a gateway.

## 2.8 Communication layer

It is made out of advancements that encourage the correspondence of appropriated parts (e.g., applications, objects) over the system by offering abnormal state application programming interfaces and administrations to the developer that shroud lower level execution points of interest. The correspondence layer is made out of system conventions, for example, hypertext exchange convention (Hyper Text Transfer Protocol – HTTP Web website), transmission control convention (Transmission Control Protocol – TCP Web webpage), Internet convention (Internet Protocol IP Web website).

## 2.9 Business (Service)layer

It gives the execution to the business standards of the Web application utilizing advancements, for example, object arranged languages (C++, Java, and PHP). The business items can "talk" to server-side advances furthermore to diligence advances to execute the framework functionalities. Business or (administration) layer is in charge of overseeing business objects e.g. persons, bunches, archives, and so forth. This layer moreover contains business decides and forms that characterize the cookiement of the business objects. The correspondence layer can be converged into this layer and be a piece of it in many designs of web applications.

## 2.10 **Persistence (Data) layer**

It envelops innovations that give an approach to hold on information, for example, database administration frameworks like (DB2 Database Management System Web webpage) or WAMP Server (WAMP Server Database Management System Web Website), furthermore application programming interfaces that encourage database programming, for example, MYSQL Connectivity, OLEDB (Microsoft OLEDB Web webpage), PHP (PHP Web website). The past advances serve as an establishment for Web entry improvement. The following part demonstrates advances that depend on these past principles and were formulated particularly to bolster the execution of complex gateway functionalities, for example, personalization, cooperation, et cetera. The accompanying is run of the mill layer engineering of a venture entryway stage in its most unique structure, delineated in figure (3.5) beneath:

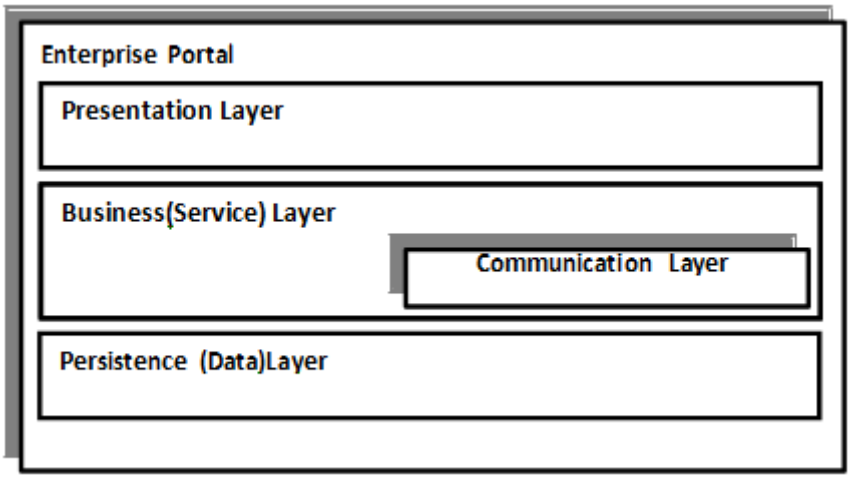



**Figure (3.5): the layered architecture of the enterprise portal[19].**

## 2.11 **E-Portal technologies andvendors**

The multifaceted nature in Web gateway advancement increments as the level of element increases, and the sum of supervisions the entry offers, and moreovertarget set. This area depicts Web entryway progress arrangements that defeat the difficulties confronted amid gateway development and support. Business and open source arrangements are accessible for improvement of web entries, here is a brief portrayal for everyone:

## 2.12 Open Source Portal Solutions

The previous segment exhibited five driving merchant entryway stages. This second decision is the open source systems that offer comparative administrations as the past business stages, however with a few focal points, for example,

- Free and taking into account other open models.
- Not registered can work with free databanks, working structures, and different devices.
- It Usually Support a few diverse working frameworks, application servers, and Web servers.
- Open source gateway arrangements will be talked about later in part four where a dialog about the innovation utilized is done.

## 2.13 Short introduction to the employedtechnologies

The following sections give a glance about the technologyemployed intheimplementationoftheSchoolwebportalwhichisbasicallythe use of PHP programming language.

## 2.14 CSSTechnology

CSS comprises of HTML, JavaScript innovation, HTML, this exceptional technique can change static Web interface into interactive CSS applications so as to greatly improve the site execution. The customary Web application permits clients to round out the structure, when the structure is presented, a solicitation will be sent to the web server.

The server gets and forms the coming structure, and after that profits another page. This practice squanders a great deal of data transmission, on the grounds that the greater part of the HTML code on the two pages is frequently the same. Since every application communication needs to send solicitations to the server, the application's reaction time relies on upon the server's reaction time, which brings about the reaction to the client interface is much slower than local applications. Since information traded between the server and program diminishes enormously, the outcome is the guest will see a speedier reaction to applications. In the meantime, a considerable measure of preparing errands should be possible on the customer machine which is

sends demand, so the handling time of Web server can be essentially diminished. This innovation has been utilized to actualize the portals of the School E-portal.

## 2.15 **HTML**

HTML remains for Hyper Text Markup Language. HTML is made out of an arrangement of components that characterize a record and guide its showcase. HTML is the most broadly utilized language for building and distributed reports on the web that show content, design, sound, and video to any individual who pulls them up. The primary point of preference of HTML is that more than one client can see the data in the meantime. HTML is made out of two essential components hypertext and all inclusiveness. Hypertext implies that by making a connection on a site page. Clients can get to anything accessible on the web and from various areas. All inclusiveness implies that HTML records can be spared as ASCII or Text just configuration, so that basically any program can read the website page. HTML was utilized to make static pages in the gateway [33].

## 2.16 **MYSQL**

MYSQL remains for MyStructured Query Language. It is a generally acknowledged standard language used to speak with the database on the server. It was created by IBM utilizing Dr. E.F. Codd's paper, "A Relational Model of Data for Large Shared Data Banks", as a model. MYSQL explanations are utilized to recover and redesign information in a database. ECourses utilizes MYSQL as a language to correspond with the database on the server. It has its own particular arrangement of summons and configuration yet can be effortlessly implanted into PERL. A few capacities performed by MYSQL in database control are INSERT, UPDATE, DELETE, and SELECT.

## 2.17 PHP programminglanguage

PHP is fundamentally a server-side scripting language exceptionally utilized for web improvement however it can regarded as general programming language. PHP is anything but difficult to peruse, utilize, and keep up, in light of the fact that it gets rid of a great part of the mistaking linguistic structure for which C++ got to be scandalous.

## 2.18 The motivations behind the technologyemployed

The motivations behind selecting such technology and whatmakes PHP so good; The truth is that there are many server-side technologies around, each of which has its own strengths andweaknesses. Yet PHP has a few features which makes PHP unique.

- PHP is open source scripting Language.
- It is easier to understand and implement.
- PHP integrates with MYSQL Database which makes its functionality more reliable.

# 3. E-PORTAL CONCEPTS & TECHNOLOGIES

## 3.1 Introduction

This section portrays in subtle elements the procedure of configuration of a Department E-gateway framework. It incorporates additionally a prerequisite social event way to deal with determine the client necessities. A calculated model will be brought and changed into an outline model. A nitty gritty framework plan including the database configuration is reported and introduced utilizing Unified Modeling Language UML like framework use cases, stream outlines, client succession charts and class graphs. A framework route structure outline will likewise be displayed in this section.

It can be seen that the proposed meaning of the Department gateway joins with numerous different regions, for example, web innovation, data frameworks, entryway attributes, and functionalities. Consequently, the improvement of a Department entry ought not be underlined just as Web website advancement or in the method for building up a customary data framework. It ought to be adjusted between both parts of improvement. To illuminate the position of gateway improvement inside of data frameworks and the Web innovation advancement territory the position of entry advancement ought to be indicated plainly. Figure (3.1) presents the position of entry advancement. There are two particular regions of advancement, which are data frameworks improvement and Web improvement.

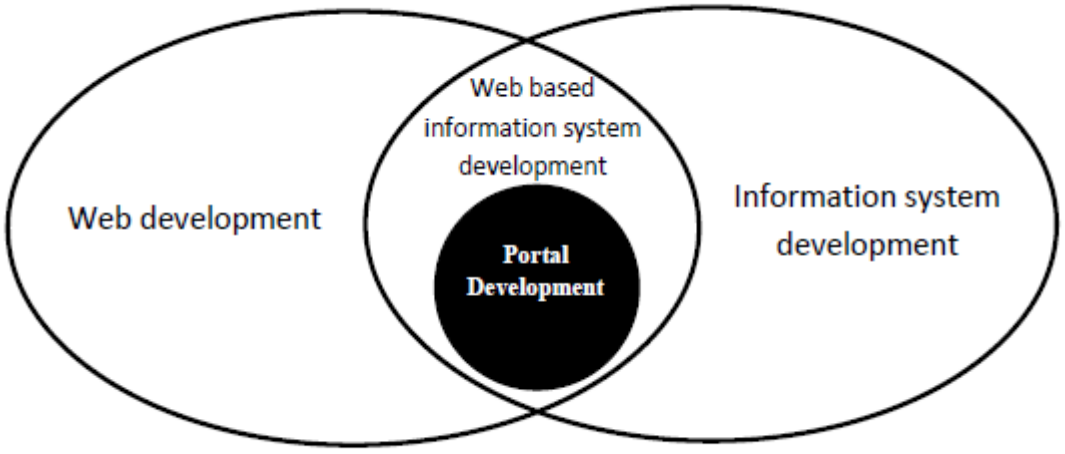


**Figure (3.1): portal developmentenvironment.**

The methodology for designing and implementing a School E-Portal is explained in figure(3.2)which shows the design and implementation stages of the School E-Portal.

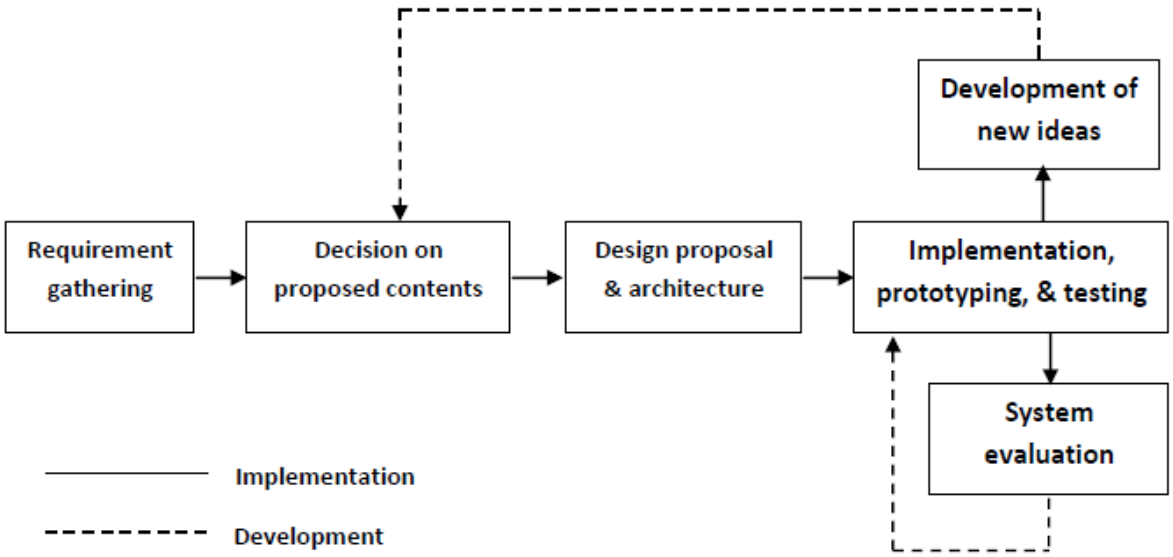



**Figure (3.2): portal design and implementationstages.**

The approach utilized as a part of this work comprises of numerous stages beginning with the get-together prerequisite stage, choices about the proposed substance in the gateway as indicated by the accumulated necessities, the outline and documentation of the framework with definite framework displaying for both engineering utilized and benefits that will be actualized, lastly the framework execution and prototyping. A model is made with the end goal of testing and assessment. On the off chance that new thoughts or substance planned to be in the entry framework, then an input to the "substance proposing" stage will be led.

## 3.2 **Requirementsdevelopment**

### 3.2.1 Requirements gathering methodology:

A first abnormal state portrayal of the prerequisites is displayed in this segment. In any case, this presentation is not satisfactory for an outline and inevitably a usage. The prerequisites ought to be made more point by point to constitute an establishment for the configuration process. the necessities for actualizing a decent Department entrance are expressed by prerequisite social event philosophy, this strategy incorporates the accompanying:

- The proposition expresses the supposition that the gateway undertaking will be essentially worried with authoritative information.
- A arrangement of meetings attempted. Subjects asked open, high leveled questions about their necessities, in view of their present encounters. The point is to get thoughts from interviewees about what might be valuable and to distinguish issues.
- Interviewees additionally gave a scope of potential substance regions for positioning.
- Two expansive perspectives of the gateway were looked for: staff and Students.
- The Students perspective was part into two sub-bunches with the end goal of meeting students and postgraduates. The aim of this was to attempt to consolidate the perspectives of these two gatherings so that the entryway improvement would be significant to both gatherings.

### 3.2.2 Presentation of functional requirements:

The entire list of functional requirements resulted from the interviews is shown below:

- Online document store.
- Contact staff/students.
- Calendaring/ timetabling.
- Program/ course information.
- Information services/ libraries.
- Notifying.
- Student information.

Many other requirements may be emerged or produced during the design process. These requirements can be considered the functional requirements or the basic services expected from the portal system.

### 3.2.3 Presentation of nonfunctional prerequisites:

Nonfunctional prerequisites of the School E-portal framework can be abridged as takes after:

#### 3.2.3.1 One Place to Get Information:

The guest no more needs to hunt down the data. The data discovers him.

#### 3.2.3.2 A Standard Set of Tools:

Guests get an arrangement of apparatuses such as online email and calendaring programming that finishes them their whole time at the Department. They don't need to utilize one device for class, another instrument for their work, and so on. Additionally, since these devices all work inside of the entryway structure, they all have a predictable appearance and feel and work also, decreasing learning time.

#### 3.2.3.3 Worldwide Access to Their Information:

The main thing required to access the entrance and related instruments is a web program. There's no compelling reason to design email programs, and so forth. A man can be anyplace on the planet and still get the data they require.

#### 3.2.3.4 Customized and Customized Information:

The data accessible in an entrance is customized for every person. Moreover, this individual can then tweak this data further to suit his or her individual tastes. A gateway puts control of their web involvement in the hands of the general population utilizing the web, not the general population assembling the sites. The Portal ought to give access to data identifying with a wide assortment of exercises. In any case it will most likely focus on instructing and learning and Students organization. Different regions will likewise become an integral factor: library administrations, budgetary administration, research organization, faculty organization and home administration.

#### 3.2.3.5 Entryway security strategy and client's protection:

The entryway ought to give secure method for use to partners by permitting just approved clients to sign into gateway framework; this should be possible utilizing User ID gave by the head to verified individuals utilized for getting to separate courses and classes.

#### 3.2.3.6 The entryway ought to be electronic application:

The utilization of Web interface makes the framework simple to utilize. What's more, no establishment on the customer side is required. This is vital keeping in mind the end goal to constrain the danger of de-inspiration clients with a framework that is excessively troublesome or tedious, making it impossible to introduce and utilize.

## 3.3 Conceptual model of theportal:

In this passage the calculated configuration is introduced and the framework capacities and administrations are sorted out inside of layers of usefulness from the most critical to the less by considering what most merchants and experts view as essential components and ideas, one space can be set up, the key component layer. The key components are essential blocks however they can be supplanted relying upon the particular needs of an association. It is not improbable that future components will pick up significance and all things considered they ought to be bolstered here. The internal most layer, the center, would need to comprise of the hugest perspective. Its adaptable and easy to use entrance. Not utilizing this center as point of convergence will mean losing the open engineering, which his essential keeping in mind the end goal to assemble an entrance fixated on the client's needs. A third external layer, the specialization layer, will give a profitable edge to the portal.

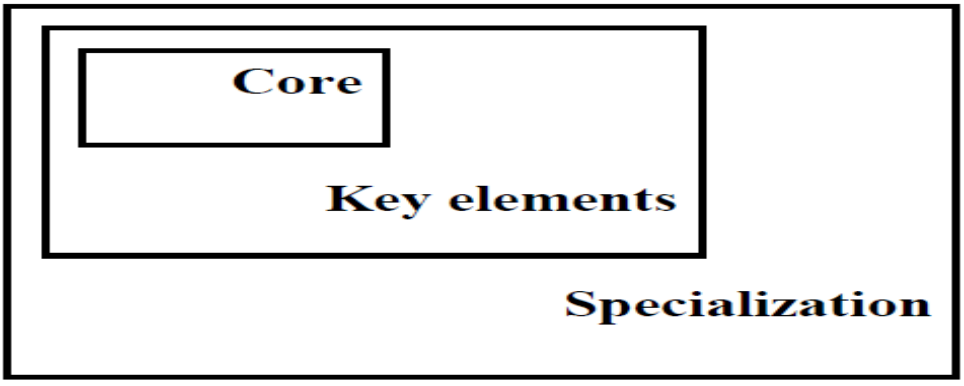


**Figure (3.3): Figure of the model ofE-Portal system.**

| Core | Key elements | Specialization |
|---|---|---|
| Customization | Applications & web services. | Collaborative features. |
| Integration. | Security | Library services. |
| Personalization. | File Management | E-courses. |

## 3.4 The Proposed Architectural description

This segment manages the general design of the Department web entryway. This implies the design is free of execution subtle elements, for example, stage, class pecking order and so on. The general engineering tries to give a diagram of the thought behind the gateway usage with the goal that it can be less demanding comprehended furthermore serves as an establishment for the more point by point plan. As we have seen and discussed a before and due to which we came across to experience such thing that each level is attached with the other one in the sequence and hence one is with two and then two with the three and so on respectively. Collaborations between first and second layer is that admin is responsible for both of them. The following figure explains the interfacing of layers with each other

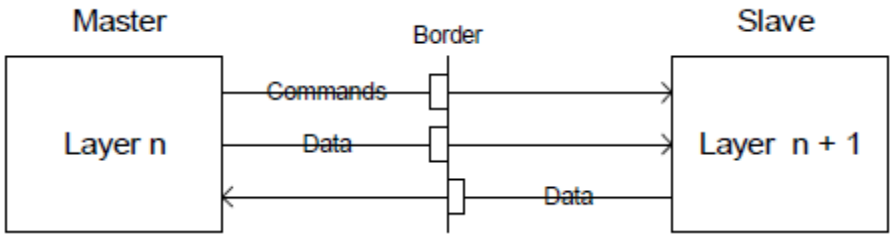



**Figure (3.4): Collaborations between both layers**

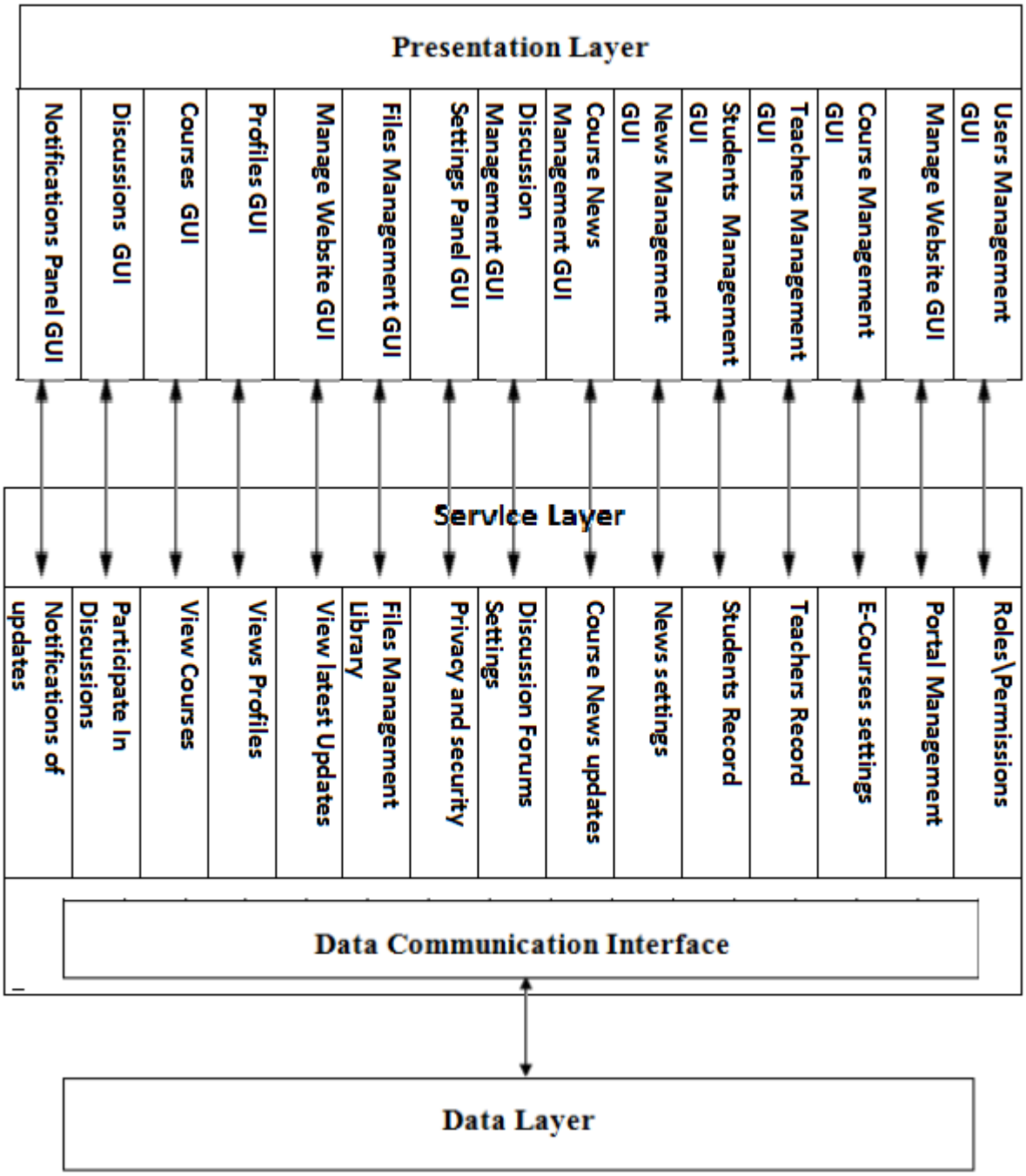



**Figure (3.5): The Layered infrastructure of School E Portal.**

### 3.4.1 Reasons for using a three-layered architecture

There are many fair reasons for utilizing such infrastructure which is performed in next figure. Such reasons practiced in the following.

**Implementing factors details:**

If such implementing appears along each layer that would be quite useful for each instance to understand and make vast knowledgeable decisions with the help of it and hence it is effective for the sake of making such kind of applications and also feasibility of such applications relies on them too.

**Easier in Responding:**

The extent of responding is much low time consuming. One layer has its own responsibility and restricted to have knowledge about the second layer. Hence each one is separated. And hence that is much easier to implement and understand.

**Seperating aspects into parts:**

Using such techniques of layering we can easily separate many aspects into several different parts and modules. It gives an opportunities to get steps for building framework and turn iot into very simple and user-friendly. In this work more concentration and hard work needed to understand.

### 3.4.2 Explaination of Layering:

To explaining such layering system we just need to know and be more cleared about the concepts of layers. In the first layer presentation layer users access the interface. It is the entry part of an application. Through such application user is allowed to access each modules with a very easy and understandable views and pages.

The admin layer is very important among all. Such layer is tackled by presentation layer but it doesn't have any link with the outer framework. In such layer admins are allowed to make any changes and customized application according to their requirement.

The information layer is basically for providing all the information regarding every modules. It is stored in databases.

### 3.4.3 Transmitting between layers:

This is for transmitting informations between each layers. It not only transferring information also the data that is used for the application is conveyed from one to another.

#### 3.4.3.1 User logins into E Portal:

In this section how the users get login into the application and how back end works on it. When a user is supplied by username and password by the administrator, which are required for signing in to the portal. If a user put right username and password it will allow to enter that user into portal otherwise there will be an error of wrong username or password.

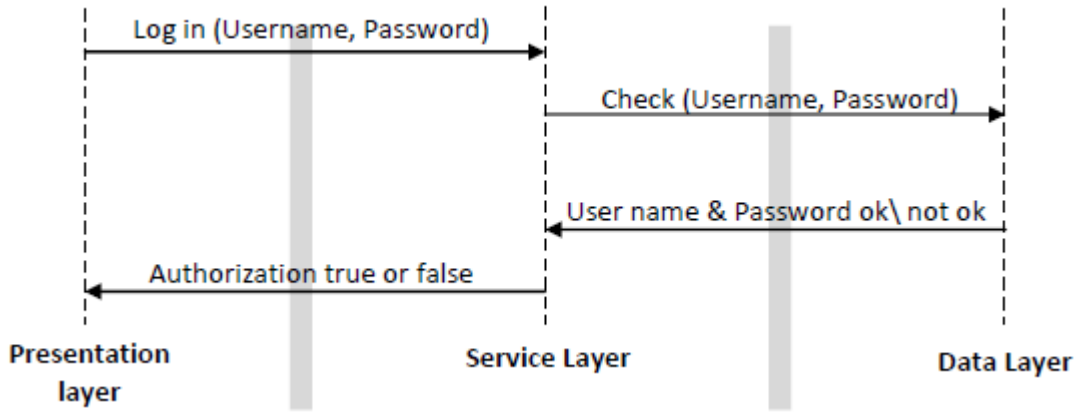



**Figure (3.6): User Sequence Diagram for signing in**

#### 3.4.3.2 User Requesting for a page:

First of all user needs to get login into the portal then whenever he or she tries to request any page , the work for this in a back end would be shown in the following figure. And user can easily follows and request for a page.

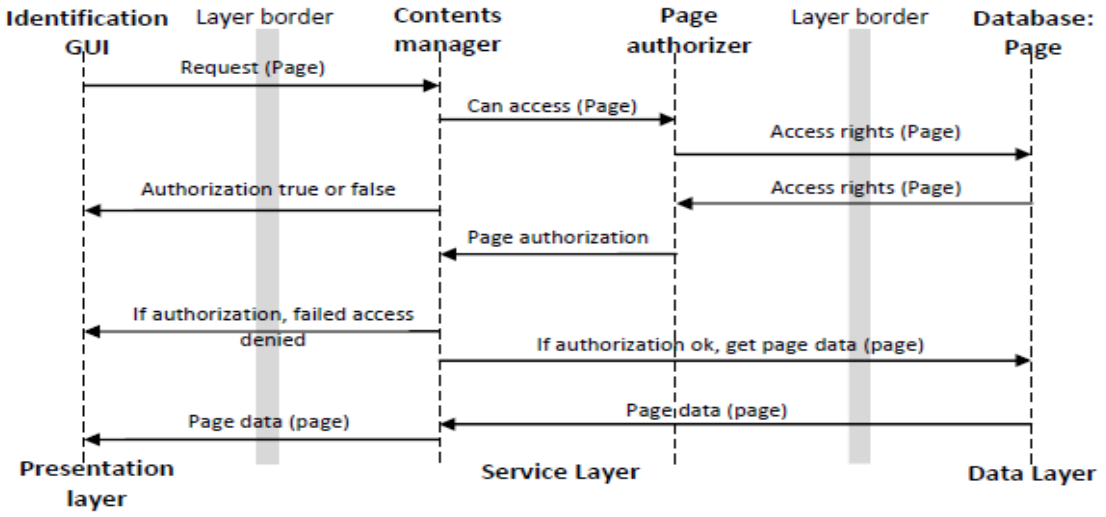



**Figure (3.7): User page accessing sequence diagram.**

### 3.4.3.3 User requesting a file to download:

In this situation, a client has gotten to the document store. User then chooses a record to download. In such particular situation there is not requirement for verification. As specified in the necessity investigation, record glance consents are allowed for catalog perusing. For this situation, a record focused to download, which implies that the client has admittance to the document.

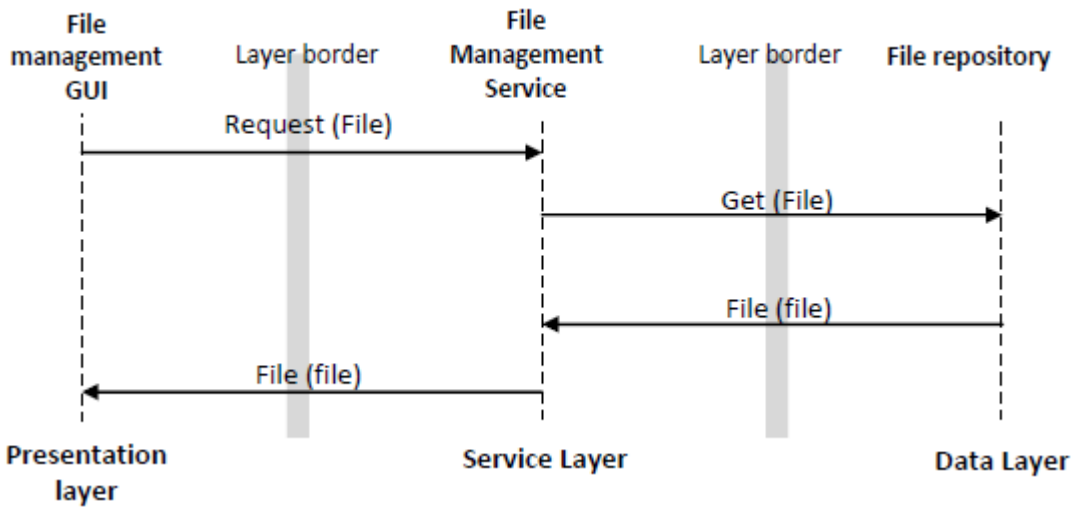



**Figure (3.8): Requesting for a file to download.**

## 3.5 Complete Designed: Application modeling

The definite configuration will portray each layers independently. Every layer is subject to the hidden layer, the primary one to be inspected is the presentation layer. Next are the administration layer lastly the information layer.

### 3.5.1 Outline of the Presentation Layer

The presentation layer is the thing that the client sees and can control. By utilizing the diverse gadgets as a part of this layer he or she in a roundabout way accesses the administration and information layer. Such layer truly comprises of a page called "index.php". In the event that no unique terms are arranged, the substance administrator stacks a default home page. On the off chance that different pages are asked for, this data is given as terms to the "index.php" document. The substance chief then peruses the parameters and burdens the right page.

#### 3.5.1.1 Client Interface

There are a few formats and usage of the gateway interface that consolidate every one of the parts of the web entry programming capacities and widespread components. An outline is drawn for the graphical client interface of the Department entry, it incorporates a sample of these client interface segments and it is appeared in Figure (3.9). The segments accessible include:

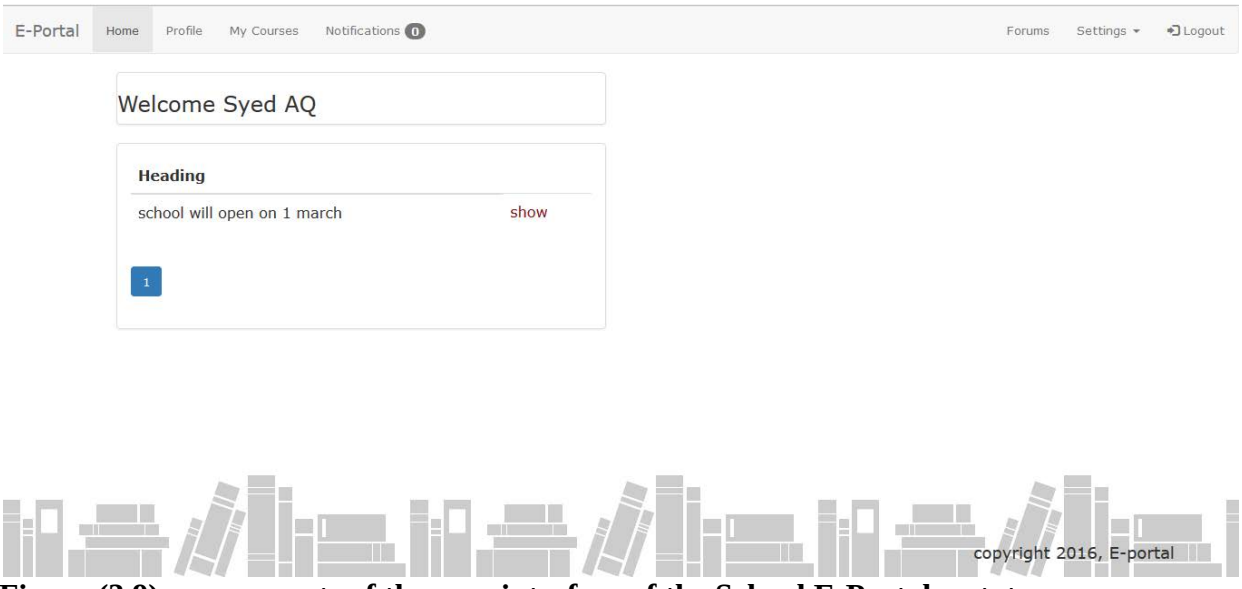



**Figure (3.9): components of the user interface of the School E-Portalprototype.**

### 3.5.2 Design of the layer of service

The administration layer is the extraordinarysegment of the entryway. Trading rationale is obtained. Since specified some time recently, the administration layer indicates presentations layer and utilize the administrations of the information layer.

#### 3.5.2.1 Enrollment and signing into the gateway

First and foremost, the client sign into the Department gateway when he or she needs to make another record to make advantage from the administrations gave by the entryway to the Students or educator aides. The enrollment procedure is finished by filling a type of individual data appeared in the "log in" page of the entry which is the primary page that will be appeared to the client. In the event that the client has as of now a record, he sign in straightforwardly; a predetermined session and cookies are made for that client, cookies are pieces of data utilized for sparing the client's movement in the web application and executed between the server and the customer and will be clarified more on later. Figure (3.10) demonstrates the enlistment and logging process.

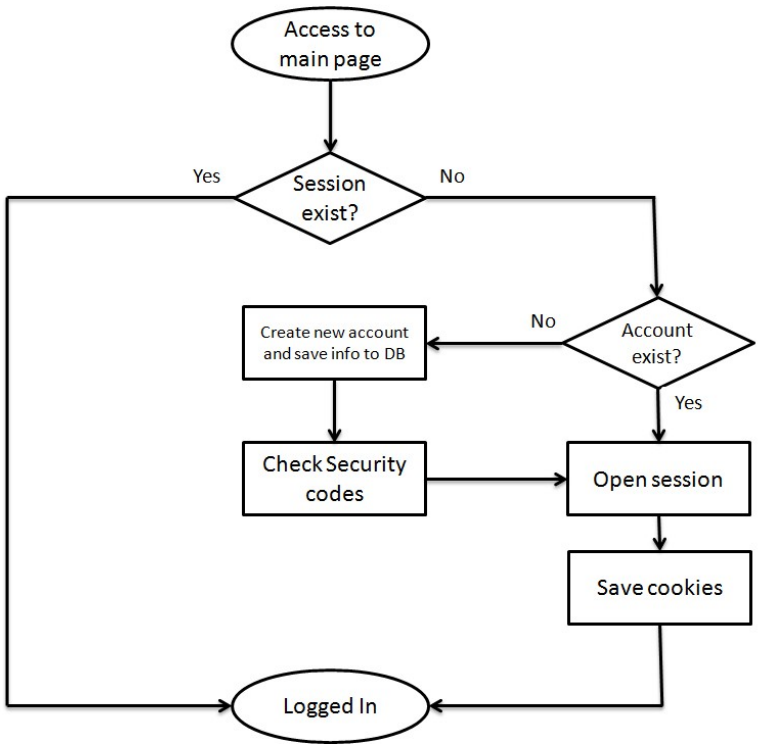



**Figure (3.10): registration & logging into theportal.**

The session and cookies are put something aside for the present client and the enlistment data is spared to the information base. For security reasons a security code is utilized amid the enrollment procedure; to actualize this operation this code is given by the gateway executive to guarantee that just approved persons can enlist in the entry, these codes will be clarified in points of interest in the security particular outline segment.

#### 3.5.2.2 Authentication

Once the client has made a record, the log in data to the entrance and the client must be verified and consents be checked before he can get into the entryway, this is finished by distinguishing client data in the cookies and sessions determined to that client and on the off chance that they are exist at the primary spot, the client data is contrasted and a duplicate saved in the database then the client is validated and approved if the data is acclimated, generally the client will never be permitted to obtain entrance he makes a record in the event that he is confirmed and has the enrollment code said before. Figure (3.11) the confirmation process:

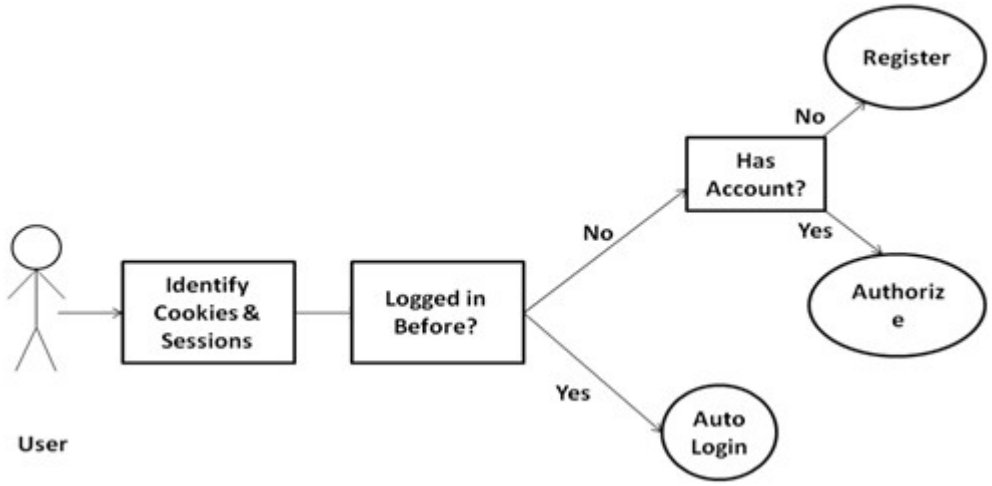



**Figure (3.11): user authentication.**

### 3.5.2.3 Editing profiles (personalization)

After the registration process is done, the user can edit his profile and personal information, this is done using the facility of editing information in the profile page, the changes submitted and saved then the data base is updated to have the new values entered in the fields, so they will be the same each time the user logs in to the portal, the user canal so change his profile picture and upload a new picture for his profile. Figure (3.12)below shows the process of editing user profile:

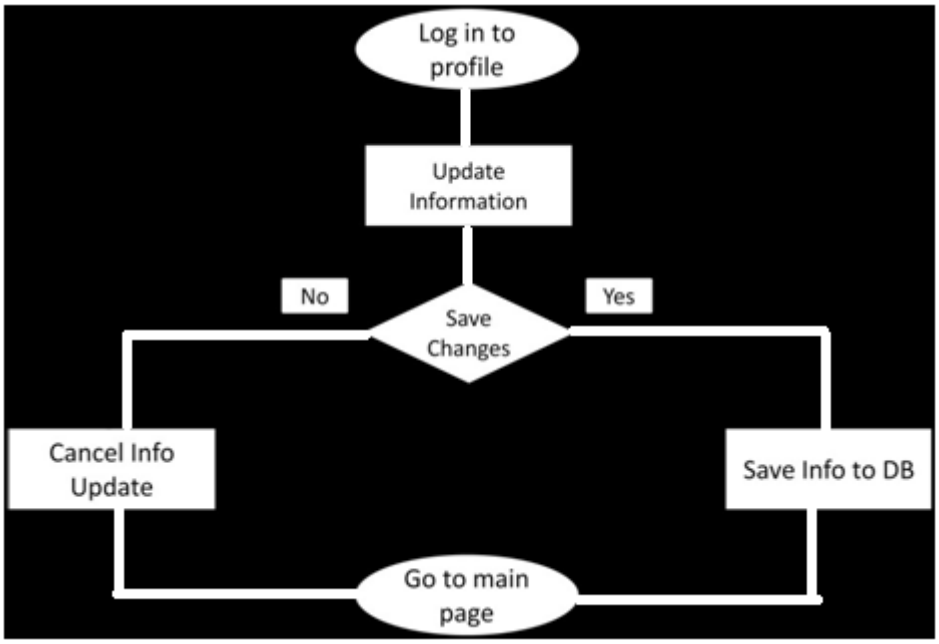



**Figure (3.12): editing user profile.**

### 3.6.2.3 Permission Roles & Account Upgrade

In the School E-Portal there are at least three types of users, so there is a need to design permission roles to determine the authorization level for each user type and how much he is willing to use the portal services and resources. Therefore three roles are designed and they are as in the following:

**Administrator Role:** The main part is the head or the chief part which gives the more elevated amount of consents and ready to get to all the entry pages and assets including control board called entryway administration page which is utilized to deal with all the gateway administrations and assets which nobody can gets to it aside from the chairmen. Managers likewise can furnish new clients with the Ids utilized for enlistment.

**Teacher Role:** Instructor associates or teachers can be enrolled with this sort of clients which gives them the benefit to get to the courses page and make new courses for the Students to take an interest in. The courses page is a unique page worried with courses made in the Department gateway for various Schools.

**Student Role**: Students or the standard client has the most minimal level of consents where the client can utilize all the entryway administrations with the exception of the administration and the courses page and doesn't have managerial benefits.

#### 3.5.2.4 Navigation security

Web programs and web applications impart to each other through HTTP. The HTTP is a stateless convention which the web programs send demands for assets and the web applications supply those assets, no session states are held. The web applications by and large utilize a few intends to give a system to making secure stateful HTTP sessions. For web applications that require verification, they regularly utilize the extraordinary component to store session IDs, and afterward pass this data to clients after they have been confirmed. This data is put away in the client's web program. The web program returns it each time it needs to reconnect as a part of a dynamic session and after that the web application partners it with the client . This data might be presented to interruption or an outside assault; the accompanying are a percentage of the methods used to keep up a protected and stateful HTTP session:

1. IP location: Users might be followed taking into account the IP location of the PC asking for the page, as downloading pages requires the server to know the IP location of the PC running the program.

2. URL (question string): A more exact procedure depends on installing data into URLs. This strategy comprises of the Web server adding inquiry strings to the connections of a Web page, it holds when sending it to a program. At the point when the client takes after a

connection, the program gives back the appended inquiry string to the server. Notwithstanding, following an inquiry string is a piece of a URL, if that URL is later reused, the same connected bit of data is sent to the server.

3. HTTP verification: The HTTP convention incorporates the fundamental access validation and the condensation access confirmation conventions which permit access to a Web page just when the client has given the right username and secret key. In the event that the server requires such certifications for allowing access to a site page, the program demands them from the client and once acquired the program stores and sends them in each consequent page demand. This data can be utilized to track the client.

The issues that make the past method for monitoring the client's movement secured might be tended to as the accompanying: IP locations are normally not solid in recognizing a client since PCs might be shared by a few clients, and the same PC might be doled out various IP addresses in various work sessions. The issue with the question string strategy is identified with putting away the information that recognizes a session in the inquiry string empowers or rearranges assaults, referrer logging assaults and other security abuses. At the point when the client is confirmed and means to explore to another page; the question string is gone inside of the URL with the username and secret word and that could be an issue since this data will be appeared with the URL.

The most ideal approach to actualize such operation is exchanging session identifiers as HTTP cookies and that is more secure. A cookie, otherwise called a HTTP cookie, web cookie, or program cookie, a bit of data sent by a Web Server to a Web Browser that the Browser programming is relied upon to spare and to send back to the Server at whatever point the program makes extra demands from the server. The state data can be utilized for confirmation, ID of a client session, client's inclinations, or whatever else that can be refined through putting away content information [21].

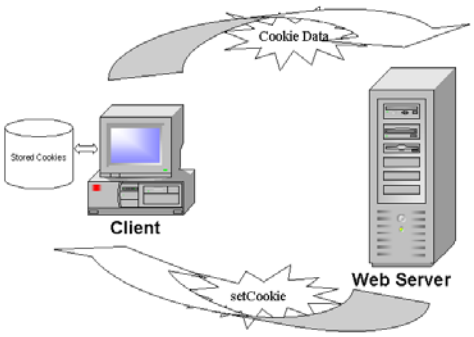



**Figure (3.13): browsingcookies.**

Cookies are not programming. They can't be customized, can't convey infections, and can't introduce malware on the host PC. The cookies are more secure than inquiry string or other system for client following movement and upheld by about every single present day program and thusly take into consideration an incredible adaptability in how client sessions are overseen by the web applications. For web applications that require verification, they regularly utilize the cookies to store session IDs , figure (3.13) delineates the idea of utilizing cookies.

### 3.5.2.5 File management

File management is an essential feature in portal system design that enables users to upload, download and manage their own and public files. Figure (3.14) shows basically how teachers manage the files they can upload, download and delete uploaded files by them or the administrator can delete unwanted files uploaded by users.

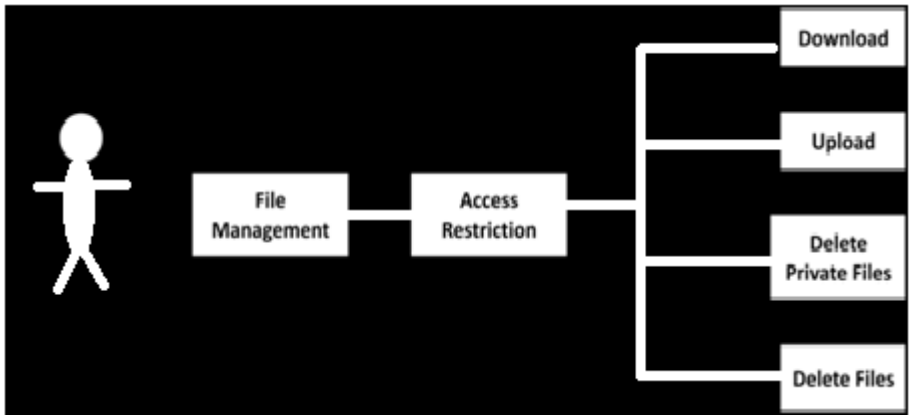



**Figure (3.14): file management system.**

Figure (3.15) demonstrates how documents are transferred and downloaded from the record vault and database in subtle elements, to transfer a document first it is chosen from the customer PC to be placed in a document pool or store on the server side, when the record is transferred in the storehouse; a record for the document with a download connection is spared to the database to be questioned when required by clients.

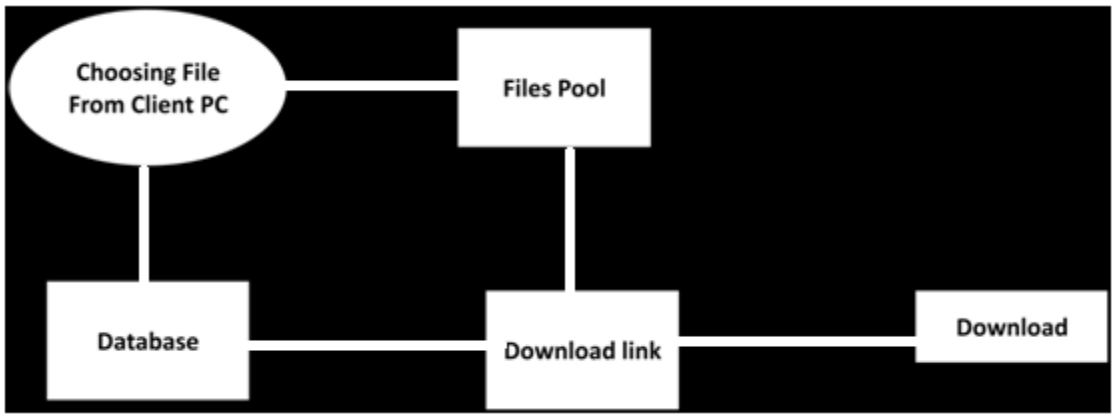



**Figure (3.15): file upload and download.**

### 3.5.2.6 Search services

The portal offers search services that supports distributed, heterogeneous searches across different data sources. The admin can search within the portal resources like the database of file system for different files or even personal information about employees' or mates. The portal provides internet search services like Google for example, in addition to a site directory that contains the important and most related websites to the portal. Figure (3.16) shows the search mechanism in the portal system where the user can make queries (requests for data) from the portal database with one value or multiple values (advanced search) to find the specified object.

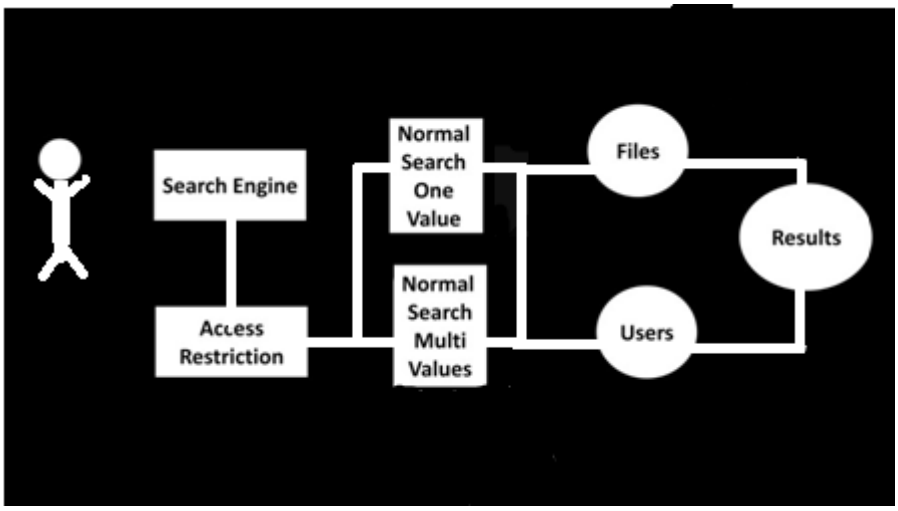



**Figure (3.16): search services.**

### 3.5.2.7 forum

A discussion forum is an important collaborative feature that should be available in the School E-Portal where students and lecturers can hold conversations in the form of posted messages; the forum contains sub forums or section search is related to a specific domain of specialty or department of the School or Department. The user can post new subjects or submit replies to existing subjects, only the administrator have the privilege to manage subjects and answers by updating or deleting them. Figure(3.17) follows depicts the basic operations in the discussion forum for users.

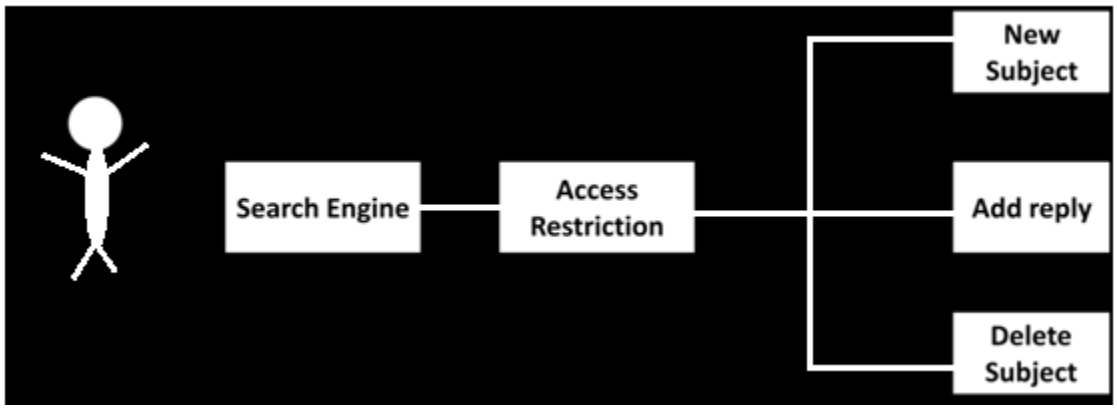



**Figure (3.17): discussion forum in the School E-Portal**

### 3.5.2.8 Timetabling

A schedule is an arrangement of sorting out days for authoritative purposes. This is finished by offering names to time frames, logbook can likewise mean a rundown of arranged occasions identified with the clients for indicating critical dates like exams or workshops for instance. At the point when the client comes to make another log book occasion he will be confronted with two alternatives for the occasion security, so it can be an open occasion that different clients regarding this client or clients inside of the same office or Department can see that occasion and it will be appeared all alone timetables, the second choice is the private occasion which can't be seen by different clients. At the point when the date of the predetermined occasion comes up; the client ought to be told. Figure (3.18) demonstrates to make another occasion in the gateway timetable.

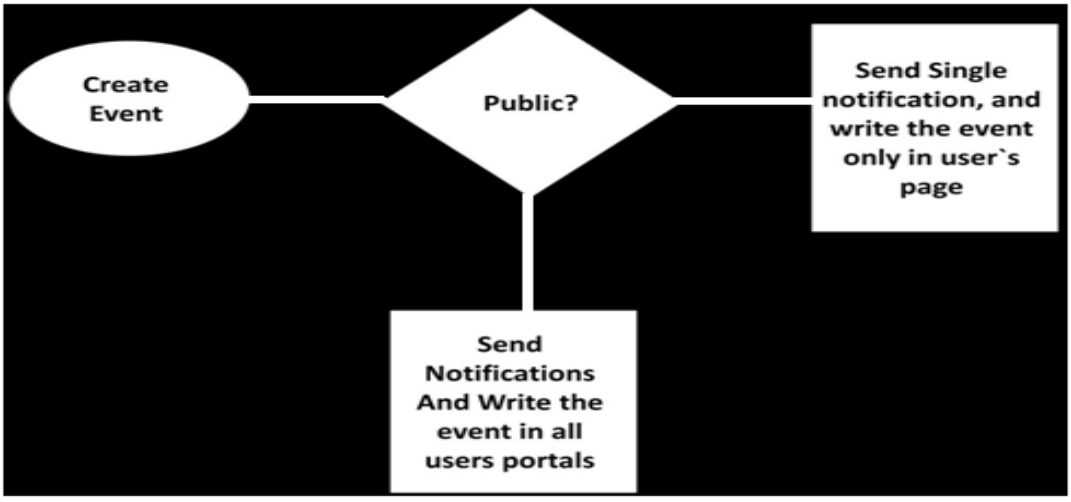



**Figure (3.18): creating a new event in the calendar.**

### 3.5.2.9 Notifying

Telling in the entrance framework is a communitarian highlight used to inform clients in numerous events. In the Department entry, the notice framework will work in one of three conditions; these conditions are: first when a client answers after another client in the exchange discussion in a subject that the second client has made a remark on it. Second when the date of a logbook occasion made by the client gets to be close to; the client ought to be advised that the occasion is occurring soon. Third when a client solicitation to be associated with another client then the second client ought to be told with the new association solicitation and he has the

privilege to acknowledge or decay this solicitation. Figure (3.19) indicates how the notice framework works.

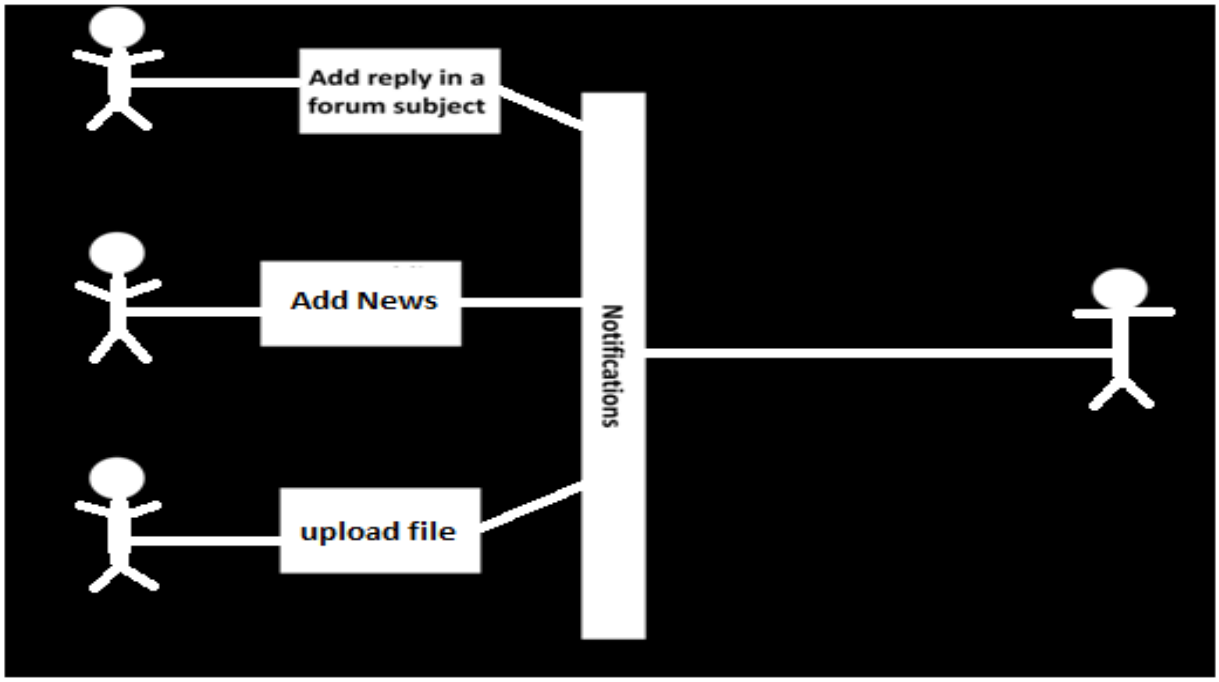



**Figure (3.19) :**
**Notification Use case.**

### 3.5.2.10 News system.

This element can be viewed as imperative in the School entryway to illuminate the Students and the workforce staff with the most recent news of the School or division, it can be additionally open news about different Departments or services exercises, it is likewise one of the community highlights in the gateway framework. The news food is made by the entry framework manager through the administration page; the executive is the main approved individual to do such operation. News will be appeared in all entryway pages when the client sign in as a subtitle bar or in an uncommon port let. Figure (3.20) demonstrates the news encouraging.

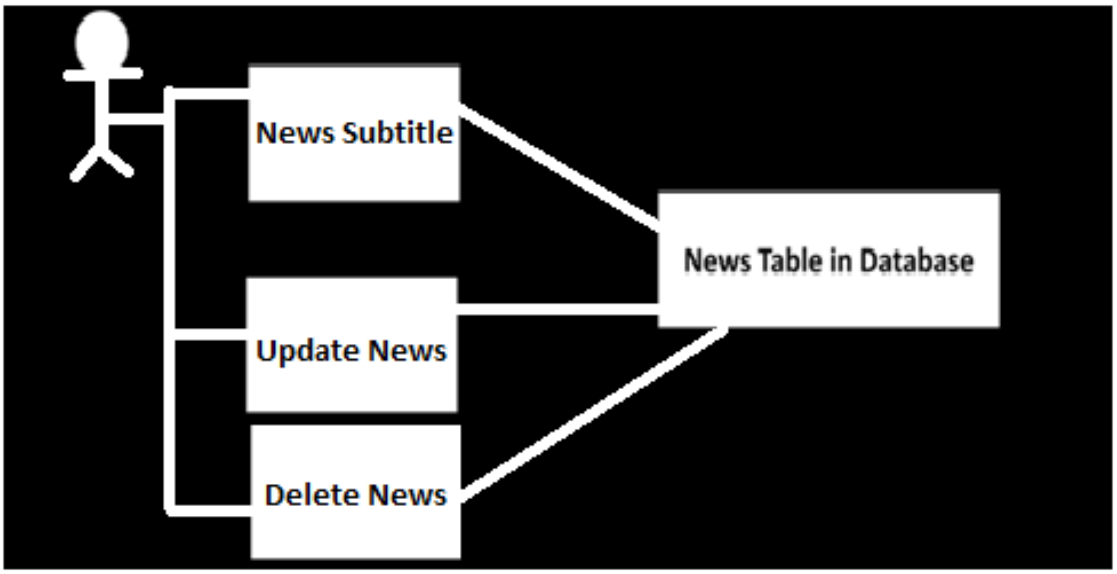



**Figure (3.20): news feeding.**

### 3.5.2.11 E-courses

The rationality behind E-courses is reuse obviously material and asset sharing by various classes, setup under the same course. The fundamental configuration of the entry is such that an admin can setup a class or a course. The substance here alludes to either ebooks or the records from the document framework or database. The educator sets up the course data and presents the course materials; the client can sign into the courses and check the accessible courses then he can select inside of any course he needs to take an interest in after the endorsement of the course teacher or speaker. Figure (3.21) demonstrates the E-courses framework in the Department entry.

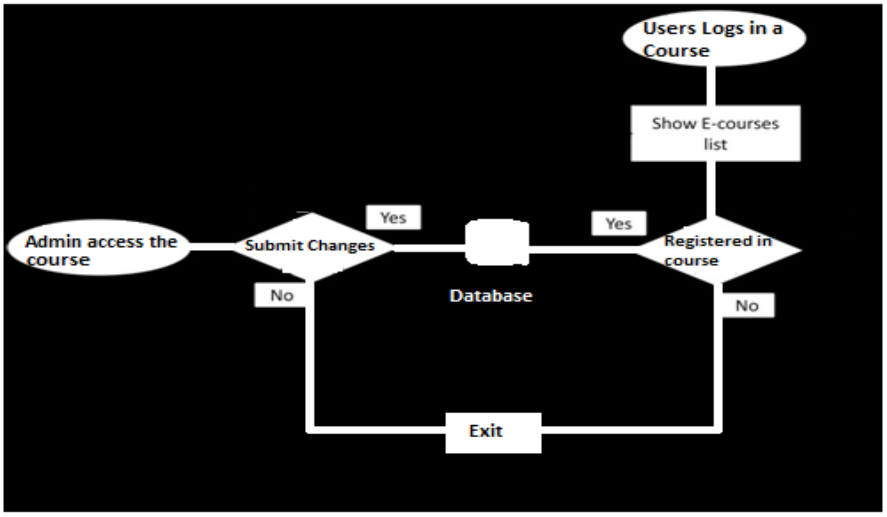



**Figure (3.21): E-courses system.**

### 3.5.2.12 Management(Administration Panel)

Entryway administration is the most critical part in configuration procedure of the School gateway on the grounds that the entryway administrations and assets ought to be overseen deliberately. As said before in past areas that there is an exceptional page called entryway administration page; this page ought to be intended with the end goal of dealing with the gateway administrations accessible in the framework and can be gotten to just by the gateway framework manager and it incorporates numerous tabs every tab is determined for a particular administration. Figure (3.22) demonstrates the essential administrations oversaw by the gateway chairman:

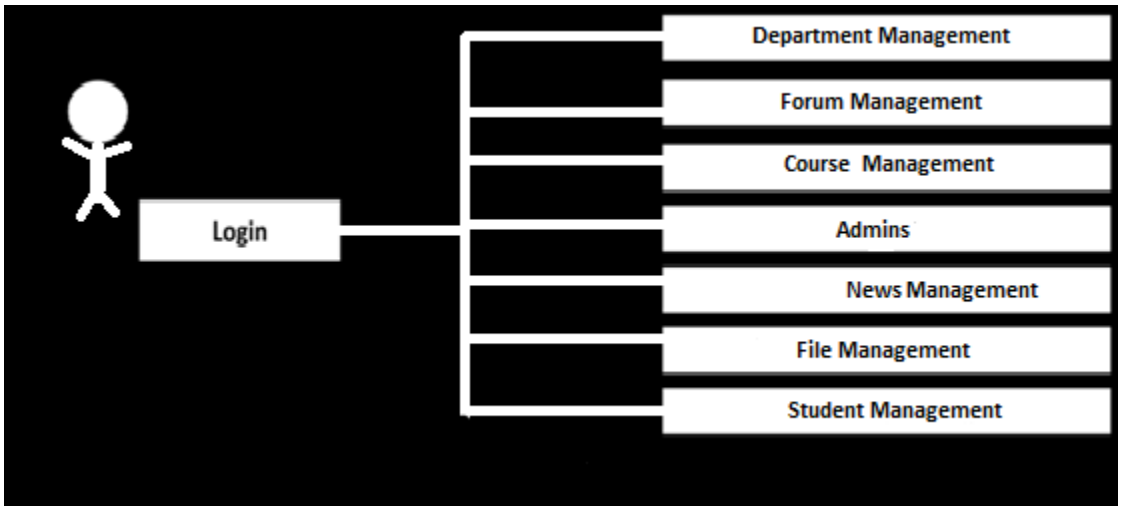



**Figure (3.22): portal management.**

**The following are the main tabs of the management page in which services of the School E-Portal can be managed:**

**Department management tab:** This tab of the administration page permits the director to deal with the Schools or offices in the School E-portal, new Departments can be included or erased, the head additionally can assign new executives or supervisors to any Department. Department data like site and other data can be redesigned through this tab. Every Department added to the entrance is free from different Schools in the entryway from the side of records, occasions, declarations or news sharing however the majority of the Schools utilize the same gateway assets and that confirms the idea of the dispersed gateway as it will be clarified in more subtle elements in the following part.

**Forum management tab:** This tab permits the users to deal with all the talk gathering subjects and replies, he/she can add any subject or reply; the director is the main approved individual to perform such operation as indicated by the manager part outlined.

**Course management:** In this tab the admin can deal with all the courses which is going to introduced in the school. Admin can assign teachers and register students in such coarse.

**Admins tab:** The admin can make new other admin and allot them to any bureau of the Department in the School E-portal.

**News tab:**News in the gateway can be upgraded through this tab by altering the news bar which is spared to the database to be appeared on the entryway fundamental page**.**

**File management tab:** Permits the admin to deal with the documents and overhaul records data for every Department or office.

**Student management:** In such management admin add and remove and upgrade information of students and also assign them courses with respect to assigned teachers.

### 3.5.2.13 Portal Management (Users Panel):

In such portal management, users would be both teachers as well as students. In which authentication is quite different from admin panel. Following are the tabs which is in interface of user panel.

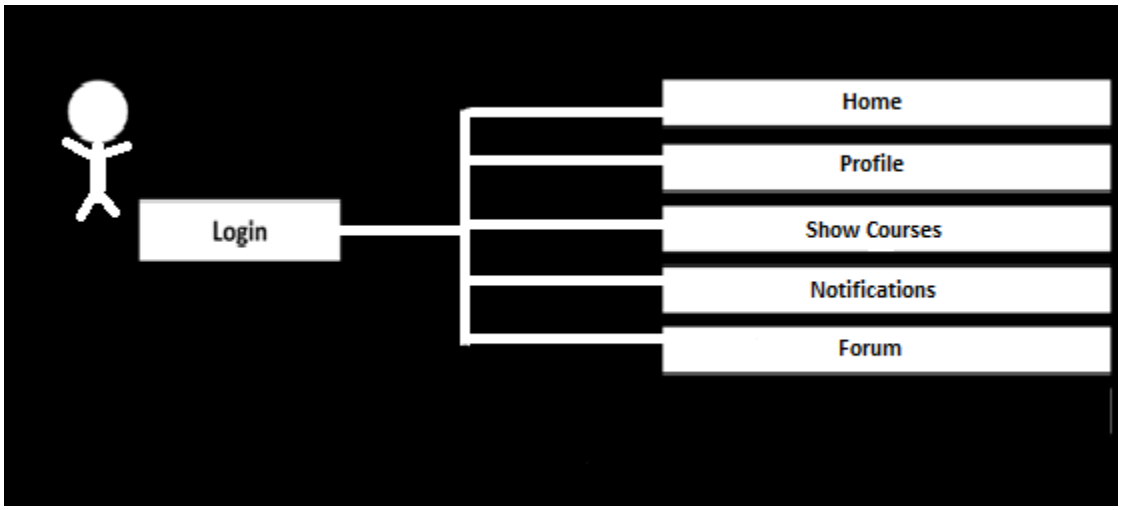



**Figure (3.23): E-portal (user)**

**Home Tab:**

Through Home tab, Users can easily move to their homepage screen wherever they were before. And the News updates will be shown to them through home panel.

**Profile Tab:**

Through Profile tab, Users can view and update their personal information which will be saved in the database.

**Show Courses:**

In this show courses tab, Users can have an ability to view their courses which is being assigned by the admin. Users will be allowed to view the timeline of the course, News update, And files uploaded by the teacher.

**Notifications Tab:**

Notifications tab permits users to move on to such forum or important event in which they are interested. If users commented on any topic of forum, this tab notify them if someone else commented on that.

**Forum Tab:**

Forum Tab give a chance to users to add any topic into the forum for discussions. And also they can view several topics which is uploaded recently and can share views anywhere.

### 3.5.3 Design of the Data layering

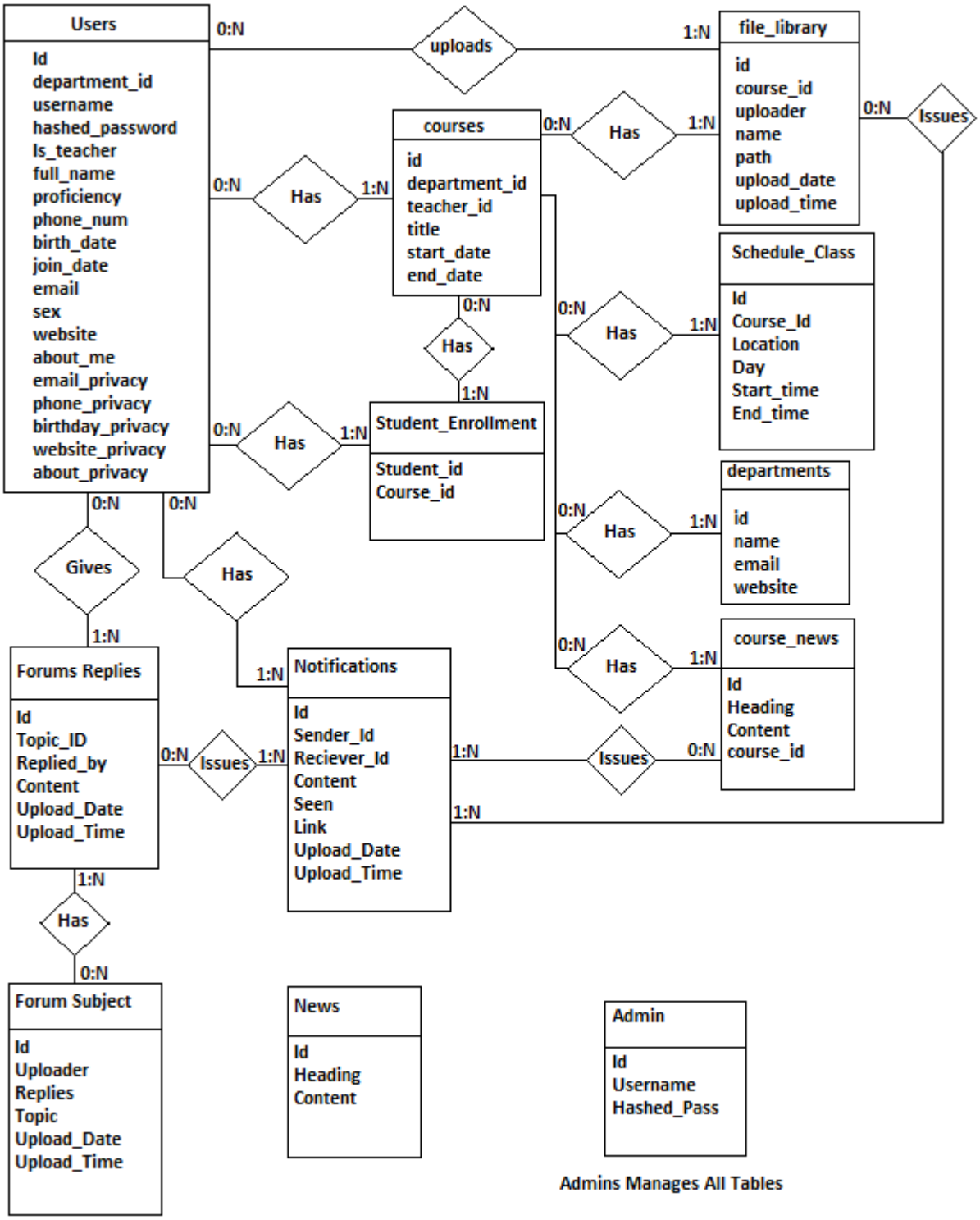
information layer-where all the information in the e portalis saved. It neglected the database and the document vault. Likewise, HTML archive. The database is the most crucial infrastructure of attaining information. It frames the whole entry. Whereas, record storehouse only extra administration, Storage spine on framework appreciating the vast majority of administrations. Such segment for the most part manages the database outline. This is made utilizing ER5-charts and exhibiting the database tables. The record vault is just an index inside of the entry application, where framework executives can include new sub catalogs. There is truly nothing more to be said in regards to it.

#### 3.5.3.1 Database design

The database utilized as a part of the Department Web Portal is MYSQL server Express. The gateway utilizes PHP to be associated with the database; these strategies will be clarified with a ton of points of interest in the following part. The accompanying tables are required in the entry. Tables in the database of the Department gateway framework are introduced in table (3.1), after that every table in the database is clarified with points of interest displayed in appendix (A). Figure (3.36) indicates part of the ER-chart for the database. An ER graph ought to contain all the database tables.

**Table (3.1): tables in the database of the Department web portal.**

| TableName | Application |
|---|---|
| **Departments** | Information about departments in the School E-Portal. |
| **Courses** | Information about existing and newly created courses. |
| **File-library** | Managing files and library materials. |
| **Forum-replies** | Storing forum answers created byusers. |
| **Forum-subjects** | Storing all subjects submitted in the discussion forum. |
| **Course News** | Storing and updating News for specific course. |
| **News** | Storing and updating portal or School news. |
| **Notifications** | Management user's notifications. |
| **Users** | Storing user profile information for all users in theportal. |
| **Admins** | Stores the Record of the Admins, They have access to every area of the portal. |
| **Schedule_ class** | It will keep record of the schedules of the classes. |
| **Student_enrollment** | It will keep record of the enrollment of the student will the specific |




**Figure(3.24): Database ER-modelforThe School E-Portal**

### 3.5.3.2 Database-Interface

The interfaces comprises PHP object. Such database is relies on MYSQL queries. Figure (3.25) display classes of database connection and diagram.

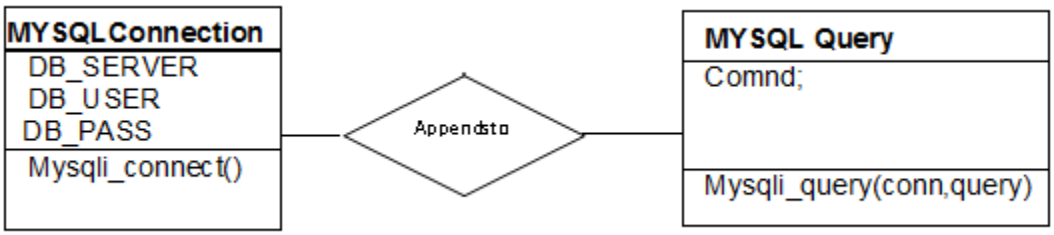



**Figure (3.25): Class Diagram of DDB interface**

### 3.5.3.3 Class Explanation:

**MYSQL QUERY**

All classes needing storage accessibility allude class. Becausesuch reason, The strategy is utilized for insertions, cancellations and different overhauls of the database Managed by Administration.

**MYSQL CONNECTION**

This class makes an association with the database, which can then be utilized by different classes. The system of creating so as to execute MYSQL questions begins the association between the database and the administration layer by conjuring the MYSQL Connection class, after that the MYSQL charge is made and annexed to the association then the summon will be executed, after execution is done, the association is shut. Figure (3.26.A) demonstrates a flowchart of executing a MYSQL summon to embed, erase or overhaul the database:

Another sort of charges that (read) from the database is utilized and the contrast between the execution of this kind of summon and the past one is the utilization of the Reader class to recover information from the database. Figure (3.26.B) beneath demonstrates a flowchart for the

execution of this sort and as beforehand specified, a peruser class is made and annexed to the association to execute this unique kind of orders.

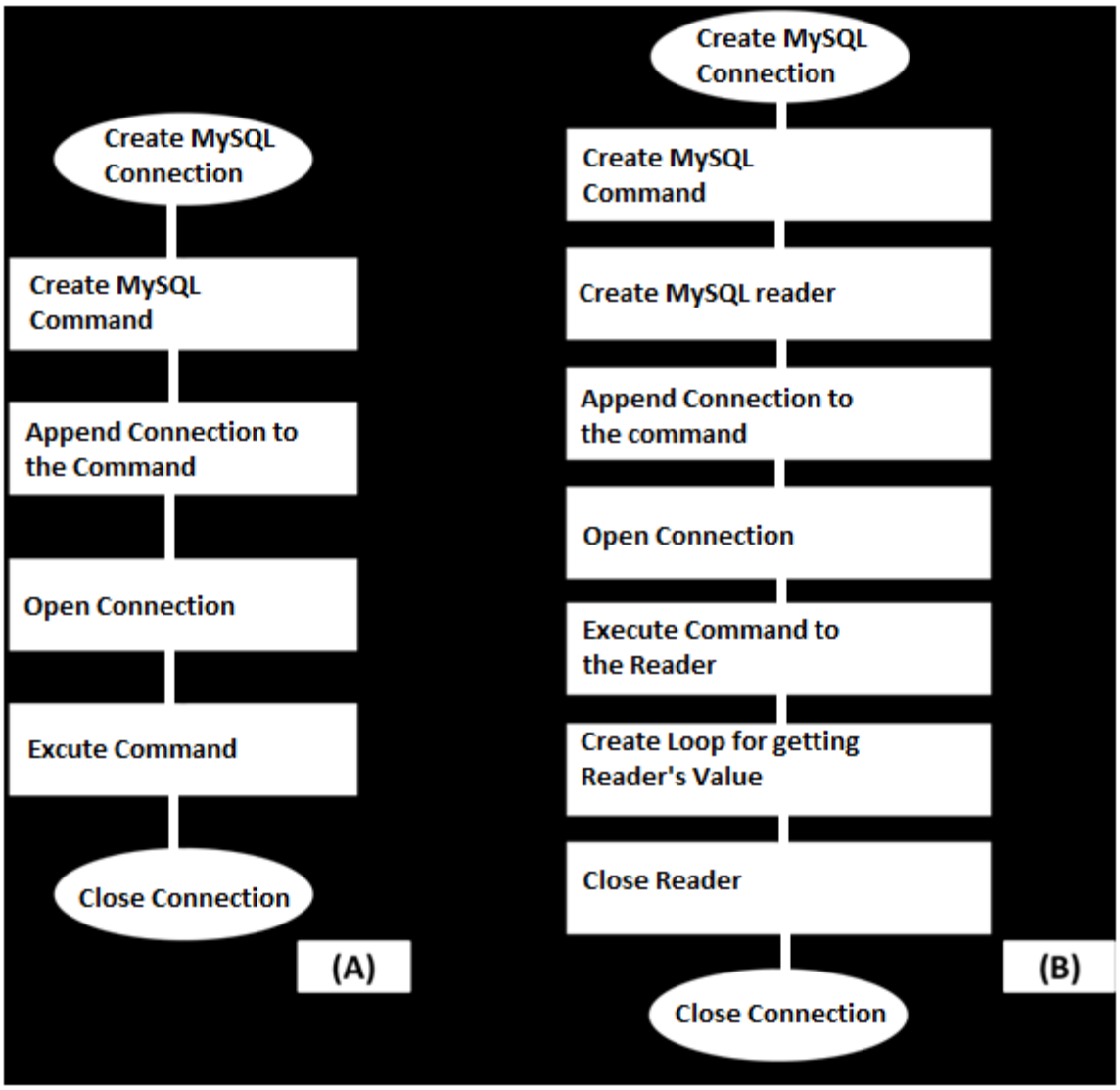



**Figure (3.38): A) a flowchart for insert, delete and update MYSQL commands.B) a flowchart for read MYSQL commands.**

### 3.5.4 Navigation structure design

The outline of the entry way route structure was made on the premise of the framework administrations after they were composed and how they are circulated on the diverse gateway pages. The gateway will have four principle pages every one has sub pages or tabs that incorporate the framework portlets in which every administration is found, these primary pages are (Manage Site, Manage Students, Manage Admins, Manage Departments). The Admin will have get two more options in manage Site to edit or update News of school and Forums. In manage students admin will enroll/unenroll students in courses. In manage departments admin will add/edit departments and within departments admin will add courses and teachers. Admin will have options to edit/update teachers and courses from manage departments.

The portal have public site completely different from admins panel. When user login from the index they enter the home page, they will see the latest news in home page. On top of every page within portal there will be a navigation bar. This bar contains Five primary tabs which are (Profile tab, Home tab, My Course, Forum tab, and Notification) on right side, In left side there will be option of setting and logout . From Profile tab, User will be able to view his/her profile detail. In Home tab, user will get back to home page to view latest news about school. In My Courses, User(student) will shown his enrolled courses or User(as teacher) will be shown the courses they are teaching currently. On clicking any course user will be taken inside the course where they can view the timeline of the course or current students enrolled in the course through which user can view their profile. Teachers will be given option to add files and news. All others can view these files and news. In forum tab, all the current discussions will be shown to be part of. Any user can access the discussion and write reply. On clicking Notifications, User will be shown the latest notification, Which can be, someone replied to your post, or teacher have added updates in course. In left side user will have option to access the setting, to change the privacy about profile, edit profile or change password.

# 4. E-PORTAL CONCEPTS & TECHNOLOGIES

## 4.1 Introduction

This part gives a brief acquaintance and evaluation with the advances that are utilized to execute the School Web Portal. A wide range of advances were utilized in the E-Portal. The framework prototyping notwithstanding testing and assessment will be displayed in this part.

## 4.2 Database

PHP can utilize distinctive sorts of information associations, contingent upon the sort of database to which the application is attempting to interface. The PHP classes whose names begin with MySQL, (for example, the already said MySQL Connection, MySQL Command, and so forth.) are particularly worked to interface with MYSQL Server.

a) MySQL Connection: This class uncovered properties and techniques for associating with a MYSQL Server database.

b) MySQL Query: This class holds information about the MYSQL questions and put away systems that you mean to keep running on your MYSQL Server database.

- Importing the vital namespaces.
- Defining an association with databases with a mysqli_connect().
- When you're ready to manipulate your database, set up the suitable query and execute by mysqli_query().
- Extracting important database information from the from the query result and store in variable. And fetch the data to use in page by mysqli_affected_rows().
- Closing the database association. mysqli_close().

### 4.2.1 Preparing the MYSQL

At the beginning MYSQL should be connected within the PHP code, this connection is established at the beginning.

```php
<?php
    define("DB_SERVER", "localhost");
    define("DB_USER", "root");
    define("DB_PASS", "");
    define("DB_NAME", "sms");

  // 1. Create a database connection
  $connection = mysqli_connect(DB_SERVER, DB_USER, DB_PASS, DB_NAME);
  // Test if connection succeeded
  if(mysqli_connect_errno()) {
    die("Database connection failed: " .
        mysqli_connect_error() .
        " (" . mysqli_connect_errno() . ")"
    );
  }
```

**Figure (4.1): Database Connection.**

### 4.2.2 Executing the Query

Every query is prepared before executed. These queries are stored in a variable then passed to the mysqli_query().

```php
function find_user_by_id($user_id) {
    global $connection;

    $safe_user_id = mysqli_real_escape_string($connection, $user_id);

    $query  = "SELECT * ";
    $query .= "FROM users ";
    $query .= "WHERE id = {$safe_user_id} ";
    $query .= "LIMIT 1";
    $user_set = mysqli_query($connection, $query);
    confirm_query($user_set);
    if($user = mysqli_fetch_assoc($user_set)) {
        return $user;
    } else {
        return null;
    }
}
```

**Figure (4.2): Executing Query.**

## 4.3 E-portalPrototype

This segment manages the counterfeit up model that was built in light of the proposed outline model in the past part. An utilitarian gateway model has been executed by outline model and the route structure introducing the vast majority of the administrations clarified in the administration layer of the configuration engineering; the database likewise has been actualized with full usefulness and a graphical client interface was intended for the entryway framework. The center has not been on the code itself. Rather the configuration model, in view of prior bits of knowledge in this undertaking has been the point of convergence. The framework model actualizes the gateway methodologies examined in the past segment.

## 4.4 The School E-portal GUI

### 4.4.1 Users End:

The graphical client interface was composed utilizing expert pages gave by the PHP outline work. PHP expert pages permit you to make a reliable format for the pages in the application. A solitary expert page characterizes the look and the vibe and the standard conduct that the designer needs for the greater part of the pages (or a gathering of pages) in the application.

One can then make singular substance pages that contain the substance needed to be shown. At the point when clients ask for the substance pages, they converge with the expert page to deliver yield that consolidates the format of the expert page with the substance from the substance page. The design of the substance pages is built by utilizing the table component at the webpage. It don’t comprise for a web table, rather a few webpages settled each between one another. Diverse foundation hues are utilize to create the ranges for the entryway.


**Figure (4.3): An anonymous user accesses a page of e portal.**

The following are some of the prototype implementation aspects of the School E-Portal system. Figure (4.3)shows the anonymous user view for the portal.

#### 4.4.1.1 Home

The prototype design scheme has taken a grey theme as the main page of the School E-Portal as shown in figure (4.4).The portal banner includes the graphical representation of the School E-Portal; .There a real buttons for the main page which contains the main tabs and other pages of the School E-Portal such as the main management page specified for the administrators or the courses management page specified for the lecturers or teacher assistants, and finally the discussion forum page. The tabs in the main page are(profile, My Courses, Notifications, Forums and Settings tab).

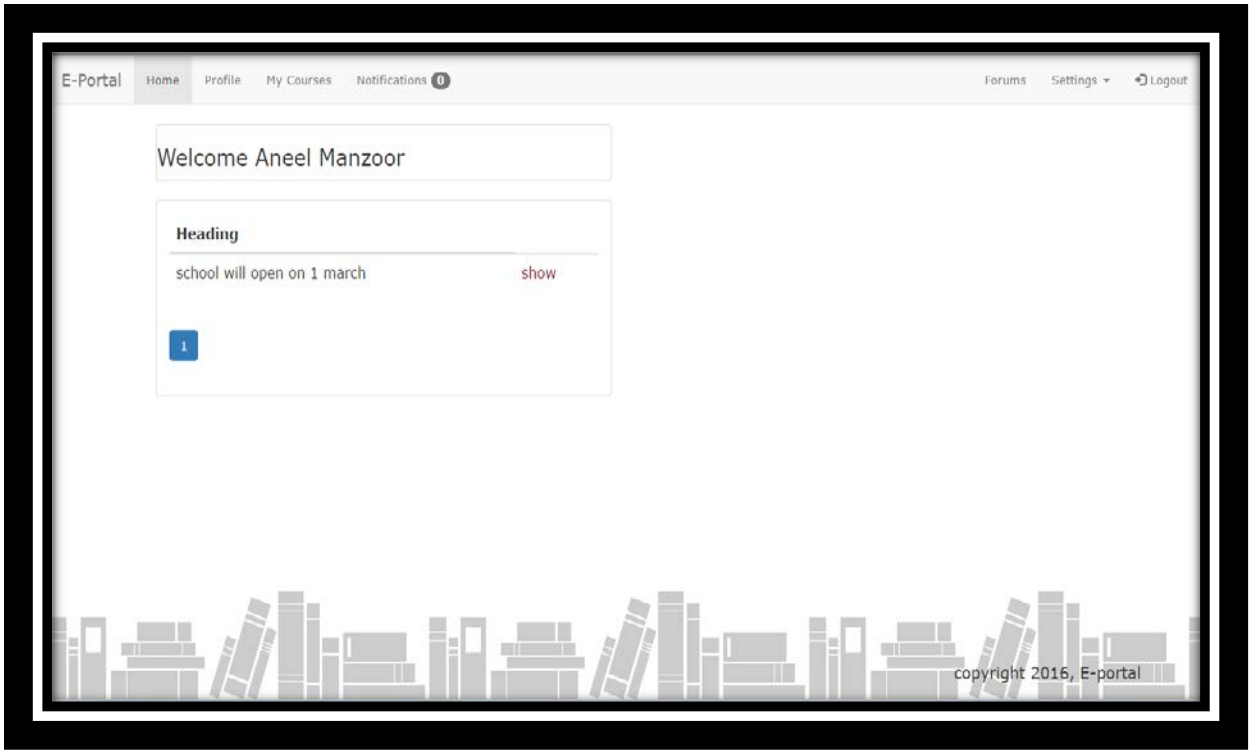



**Figure (4.4): Screen shot for home tab in the main page, a registered user has logged in**

#### 4.4.1.2 Courses

In the main page of the School E-Portal prototype, the courses tab allows the admin to select and enroll users(Teachers&Students)within a course from the available courses to get information about this course and materials specified to it.

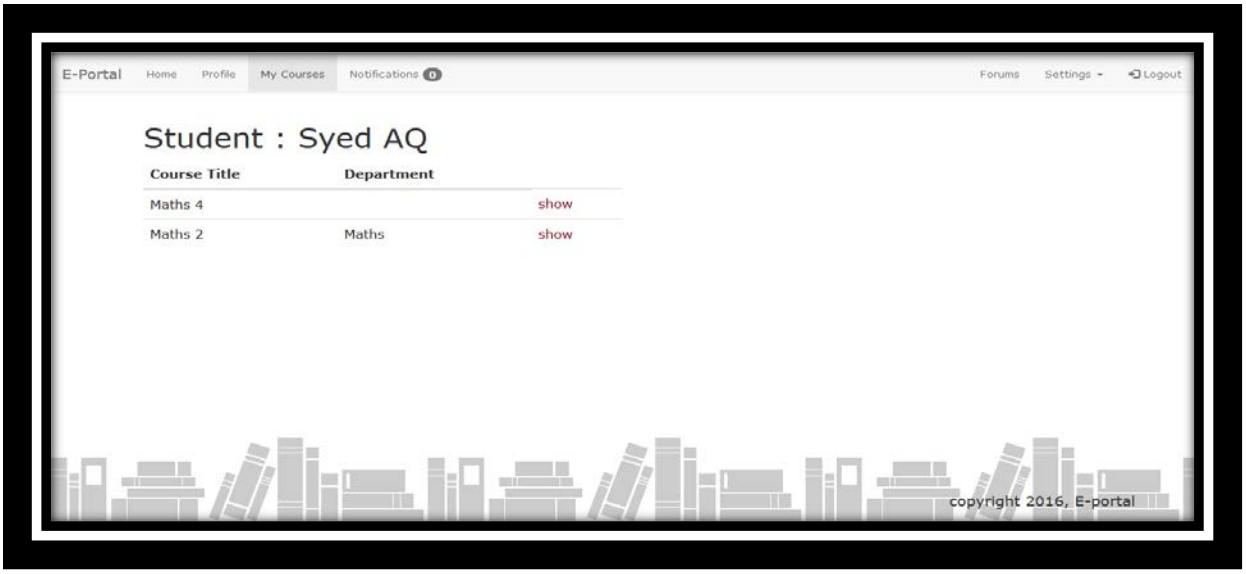



**Figure (4.5): My coursesTab.**

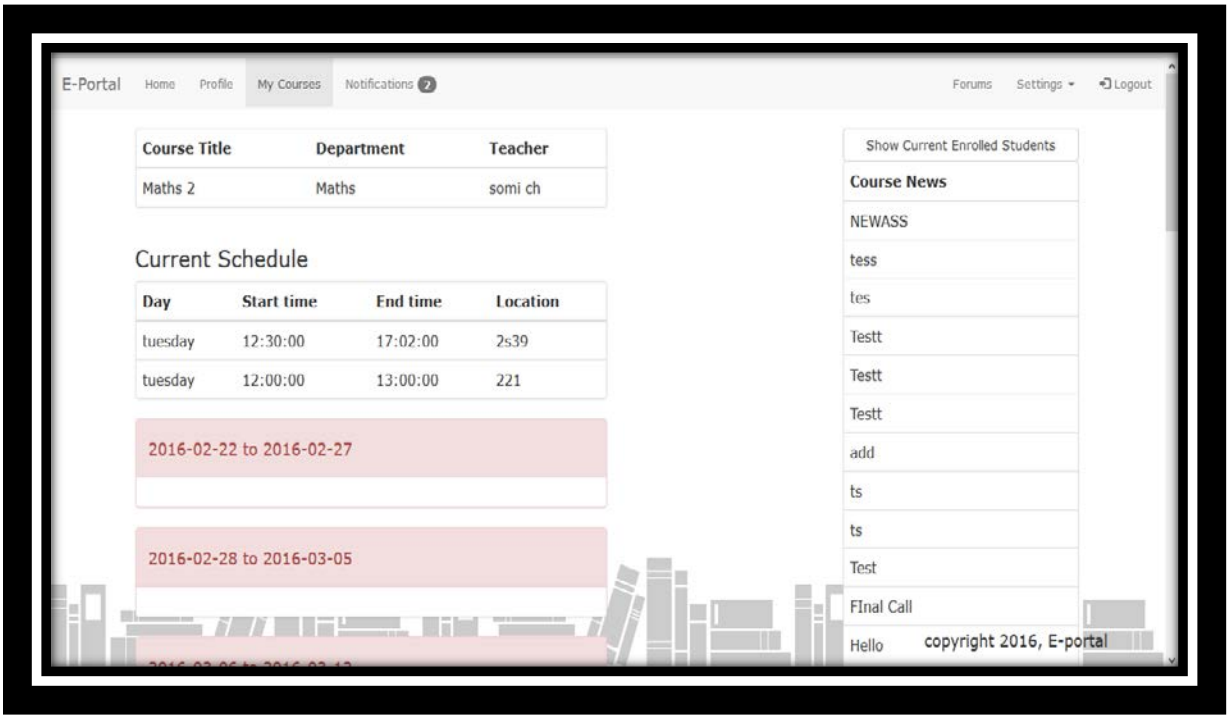



**Figure (4.6): Course View.**

Courses are managed by users having accounts with the teacher role(only lecturers have such accounts as imposed by the system design); the management is done through a special page

called course managementas shown in appendix (B). Figure (4.8) shows the student course page interface.

#### 4.4.1.3 Notifications:

The notifications tab opens a page in which notifications where users have already commented or interested will appears. And whenever notifications appear it will be highlighted by numbers of notifies.

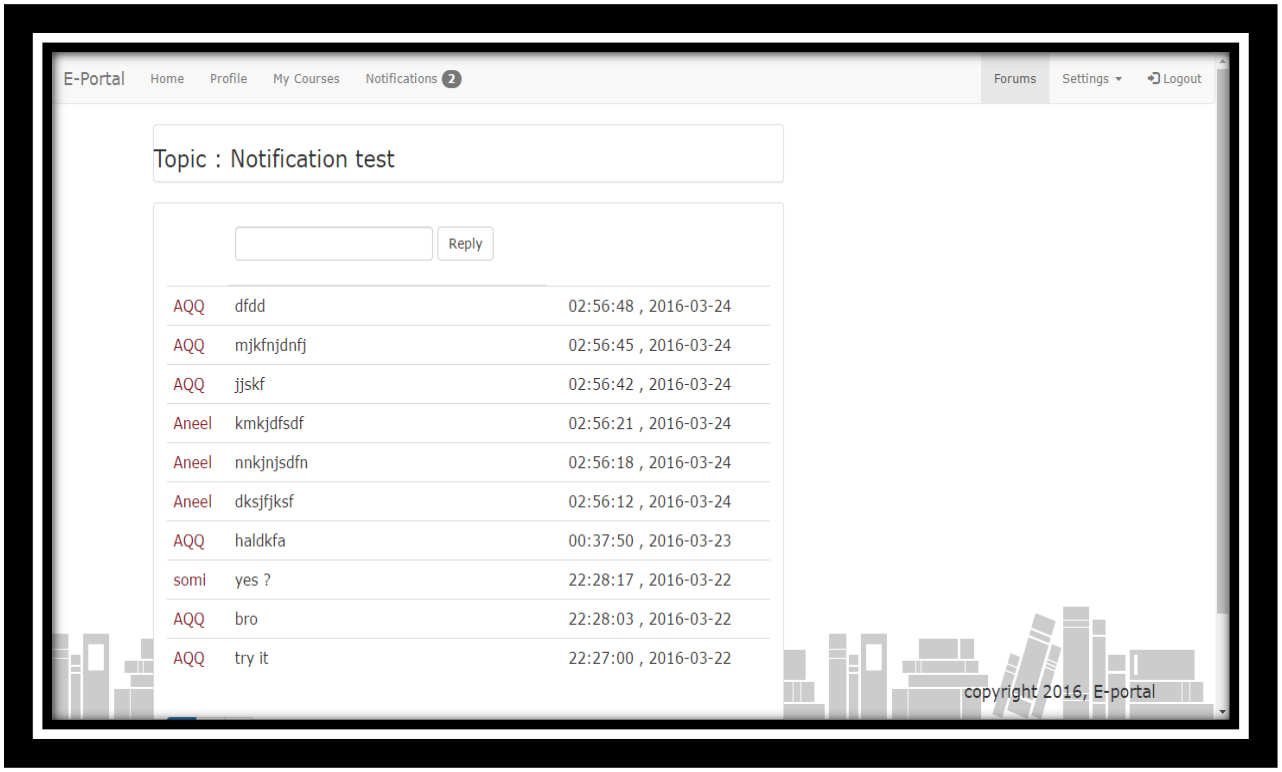


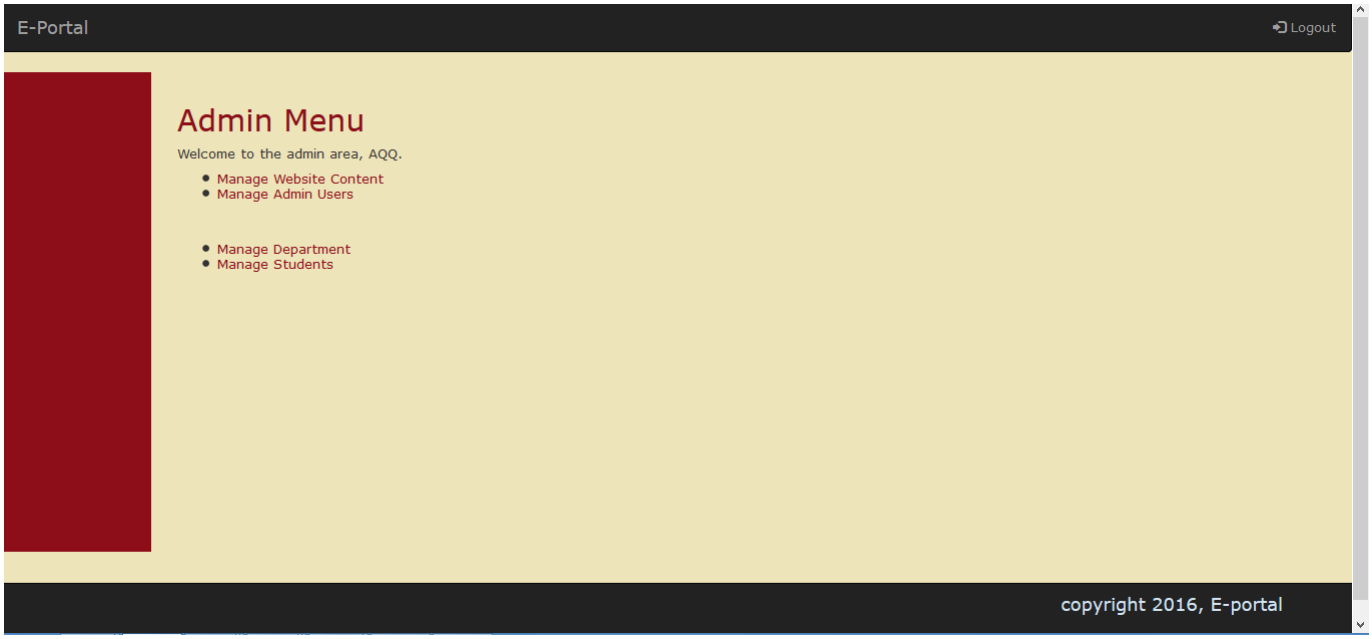

**Figure (4.7): Notification tab in the main page.**

### 4.4.2 Administrators End:

#### 4.4.2.1 Home

In the GUI of Admin panel, there are certain options in the menu at Main page. Such as Manage website content, Manage admin users( to add or remove admin), Manage Department, Manage Students.

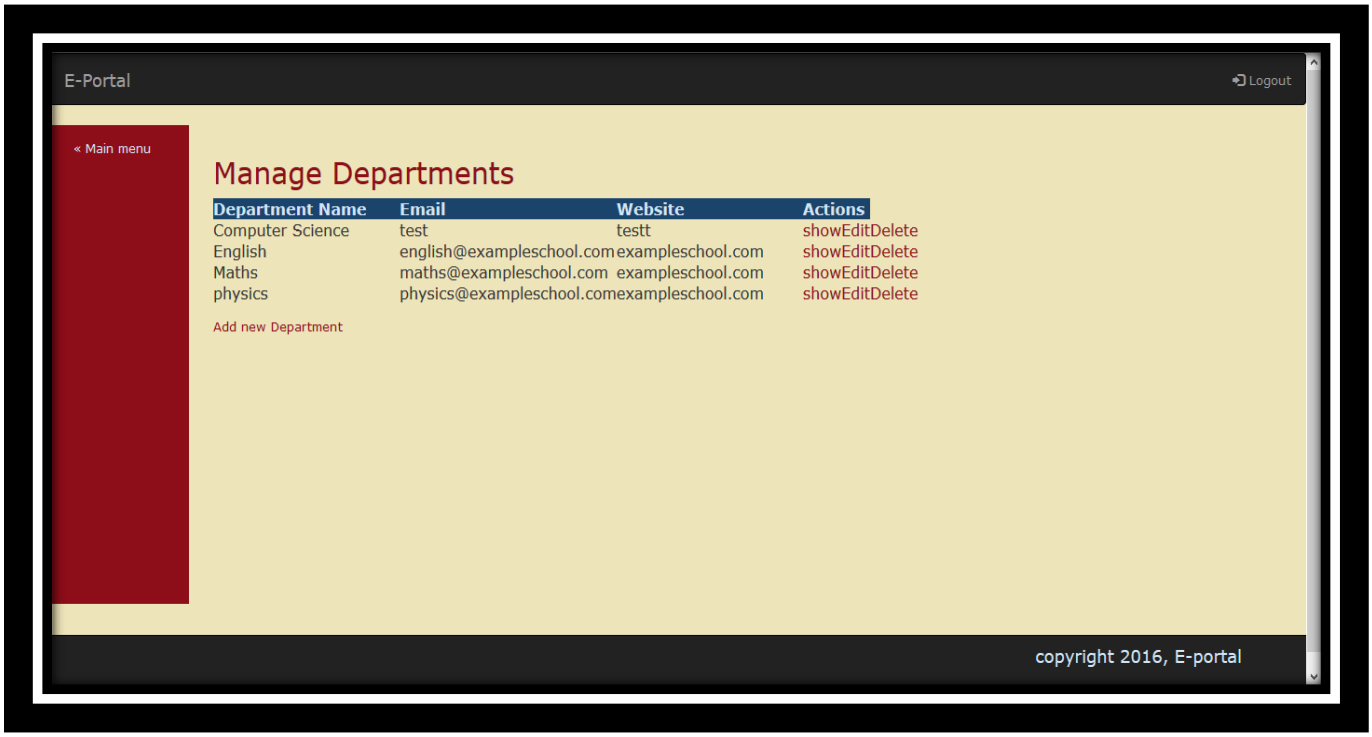
**Following are some prototypes of admin GUI.**




**Figure(4.8) Shows the Home page of admin Menu**

### 4.4.2.2 Manage Departments:

In such tab, admin can add or edit existing departments of school and also delete them. Following figure shows the interface of such page.




**Figure(4.9) shows the web page of Manage Departments.**

## 4.5 **PrototypeTesting**

The profile tab in the principle page contains the individual data of the client such as name, age, contact data, Department or division, and so on… with the capacity of altering the profile, it contains likewise the associations made by the client with various individuals in the Department entrance. Through this tab additionally the admin can sign into pupil's courses that he has as of now taken an interest in and see the course data and materials in the courses tab clarified before. Client can overhaul and deal with the tab data and can likewise change the individual picture. Figure (4.9) demonstrates the profile tab in the fundamental page.

**Table (4.1): Logging\ Authentication**

| **Characteristics** | **Situation** | **Test** | **Feedback** |
|---|---|---|---|
| Log as registered | Executed | Test ok | |
| Grant\deny access | Executed | Test ok | Check the user role and |

**Table (4.2): Editing userprofile**

| **Characteristics** | **Situation** | **Test** | **Feedback** |
|---|---|---|---|
| Update user information | Executed | Testok | Change user information and save to the database. |
| Change privacy | Executed | Testok | Change user privacy and save to database |
| Log in and out courses | Executed | Testok | |
| Add new contact | Executed | Testok | The requested partner willbe notified. |

**Table (4.3): Roles\Upgrading accounts**

| Characteristics | Situation | Test | Feedback |
|---|---|---|---|
| Student role | Executed | Test ok | Lower level of authorization. |
| Teachers role | Executed | Test ok | Privileged to access courses management page. |
| Administrator role | Executed | Test ok | Have full privileges and can access to all portal resources from the portal management page. |
| Upgrade account | Executed | Test ok | Done by administrator to upgrade the level of user authorization. |

**Table (4.4):Security**

| Characteristics | Situation | Test | Feedback |
|---|---|---|---|
| Registration using security keys | Executed | Test ok | |
| Data encryption | Executed | Test ok | Using MD5algorithm. |
| Sessions | Executed | Test ok | |

**Table (4.5): File library**

| Characteristic | Situation | Test | Feedback |
|---|---|---|---|
| Download file | Executed | Test ok | |
| Upload file | Executed | Test ok | |
| Delete file | Executed | Test ok | Teachers and admins can only delete files |

**Table (4.6): Searching services**

| Characteristics | Situation | Test | Feedback |
|---|---|---|---|
| Search with IDs | Executed | Test ok | |

**Table (4.7): Discussion forum**

| Characteristics | Situation | Test | Feedback |
|---|---|---|---|
| Read subject | Executed | Test ok | |
| Post a new subject | Executed | Test ok | |
| Edit subject | Not Executed | | |
| Reply to subject | Executed | Test ok | |
| Edit reply | Not Executed | | |
| Delete subject | Executed | Test ok | Administrators only can delete subjects. |
| Delete reply | Executed | Test ok | Administrators only can delete reply. |

**Table (4.8): News\Timeline**

| Characteristics | Situation | Test | Feedback |
|---|---|---|---|
| Create course timeline | Executed | Test ok | |
| Create Course News | Executed | Test ok | News will be visible in course |
| Delete News | Not Executed | | Only admins can remove the News |

**Table (4.9):Notifying**

| **Characteristics** | **Situation** | **Test** | **Feedback** |
|---|---|---|---|
| Notify when new occurs in | Executed | Test ok | News alert. |
| Notify when file is added in | Executed | Test ok | New file alert. |
| Notify by the discussion forum after | Executed | Test ok | |
| Clear notification automatically after it is seen. | Executed | Test ok | This is Executed using a flag in the database. |

**Table (4.10):News**

| **Characteristic** | **Situation** | **Test** | **Feedback** |
|---|---|---|---|
| Update news | Executed | Test ok | System administrator only can update news |
| Delete News | Executed | Test ok | System administrator only can remove news |

**Table (4.11):Department**

| **Characteristics** | **Situation** | **Test** | **Feedback** |
|---|---|---|---|
| Create new Department | Executed | Test ok | Administrator Privilege only |
| Edit Department | Executed | Test ok | Administrator Privilege only |
| Delete Department | Executed | Test ok | Administrator Privilege only |

**Table (4.12): Course**

| Characteristics | Situation | Test | Feedback |
|---|---|---|---|
| Create new course | Executed | Test ok | Administrator Privilege only |
| Edit course | Executed | Test ok | Administrator Privilege only |
| Delete course | Executed | Test ok | Administrator Privilege only |

**Table (4.13):Student**

| Characteristics | Situation | Test | Feedback |
|---|---|---|---|
| Create new student | Executed | Test ok | Administrator Privilege only |
| Edit student | Executed | Test ok | Administrator Privilege only |
| Delete student | Executed | Test ok | Administrator Privilege only |
| Enroll student to course | Executed | Test ok | Administrator Privilege only |
| Un-enroll student from course | Executed | Test ok | Administrator Privilege only |

**Table (4.14):Teacher**

| Characteristics | Situation | Test | Feedback |
|---|---|---|---|
| Create new Teacher | Executed | Test ok | Administrator Privilege only |
| Edit Teacher | Executed | Test ok | Administrator Privilege only |
| Delete Teacher | Executed | Test ok | Administrator Privilege only |
| Assign Course | Executed | Test ok | Administrator Privilege only |
| Un-assign Course | Executed | Test ok | Administrator Privilege only |

**Table (4.15):Setting.**

| **Characteristics** | **Situation** | **Test** | **Feedback** |
|---|---|---|---|
| Test Edit Privacy | Executed | Test ok | |
| Test Edit Profile | Executed | Test ok | User may change the Information |
| Change Password | Executed | Test ok | User may change the password |

# 5. E-PORTAL CONCEPTS & TECHNOLOGIES

## 5.1 Conclusions

This work has come to the following conclusions:

- The application of the Department E-portal has been developed as a online application utilizing an open source innovation rather than the business advancements clarified before on the grounds that open source innovation is free and taking into account different guidelines, Non proprietary and can work with free databases, working frameworks, and other tools, and at last it underpins a few distinctive working systems, application servers, and Web servers.

- According to the specified classifications of entry frameworks the Department E-gateway can be considered as a vertical scholarly web portal.

- The Portal ought to give access to data identifying with a wide assortment of exercises. In any case it will likely concentration educating and learning and understudy organization. Different territories like library administrations, client single sign on, client authentication, profiling, joint effort and work process, seek services, customization, personalization, security, content administration, and finally web administrations and internet tools.

- E-gateway security kept up numerous levels of security including client confirmation system, information encryption, and route security.

- Through a way prototyping is the product display that was utilized to actualize the framework where an on conclusive framework is conveyed to be utilized by the end client to utilize and assess then gives an input tore-model the framework with all the more surely knew framework prerequisites.

- Service testing has been executed implying that the framework administrations have been tried independently amid the run time; application highlights have been tried and observed to be work accurately, and the test interim observed to be longer than the usage stage.

- The design utilized is a three layered engineering which makes the accompanying advantages: Encapsulation of execution details, Easiness of correspondence, and Separation of usefulness into modules.

## 5.2 **Recommendations for future work**

Some framework prerequisites are still not completely satisfied; this can be done as a major aspect of the future works

- Future examination of colleges gateways might incorporate a few sorts of clients other than the as of now talked about in this work like employees and specialized staff.
- The utilization of customer side scripts for more intuitiveness for instance java scripts. It permits intuitive graphical client interfaces like popup records, dynamic impacts, and it offers proficient web plan administrations.
- Evaluating the E-gateway application as indicated by the standard ISO/IEC 9261, Information Technology Software quality attributes and measurements. The standard's center is towards evaluating a product item's ease of use in connection to a particular use or utilization situation. The standard makes utilization of a few inner attributes in surveying a product item's quality being used.

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# APPENDIX A

**Table (A-1): Admins**

| Value | Description |
|---|---|
| ID | Admins identifier |
| Username | Username of Admin |
| hashed_password | Password converted into hashed using MD5 |

**Table (A-2): Courses**

| Value | Description |
|---|---|
| ID | Courses identifier. |
| Department_id | Department identifier to know the department of course. |
| Teacher_id | Teachers identifier to know the respective teacher of the course. |
| title | Title of the course. |
| Start_date | Starting date of the course. |
| End_date | The ending date of the course. |

**Table (A-3): Department**

| value | Description |
|---|---|
| ID | School identifier. |
| E-mail | E-mail of Department. |
| Name | Name of the Department |
| Website | Website of Department |

**Table (A-4): File-librarytable**

| Value | Description |
|---|---|
| ID | Fileidentifier. |
| Course_id | Course identity |
| Uploader | Uploading files |
| Name | Names of Files |
| Path | Path of files |
| Uploader_date | Date of uploading |
| Uploader_time | Time of uploading |

**Table (A-5): Forum-replies**

| Value | Description |
|---|---|
| ID | Reply identifier. |
| Subjec tID | Subject identifier where the answer is submitted. |
| Replied By | Reply given by |
| Replied ID | Replied Id |
| Content | Content of forum |
| UserID | User identifier who submitted theanswer. |

**Table (A-6): Forum-subjectstable**

| Value | Description |
|---|---|
| ID | Subjectidentifier. |
| SubjectName | Name of the newsubject. |
| Upload_Date | Date the subjectcreated. |
| Uploader | User identifier who created thesubject. |
| Upload_time | Time of upload |
| Replies | No.of replies |

**Table (A-7): Newstable**

| Value | Description |
|---|---|
| ID | Newsidentifier. |
| Heading | Heading of news |
| Content | Content of news |

**Table (A-8):CourseNewsTable**

| Value | Description |
|---|---|
| ID | Newsidentifier. |
| Course_Id | Course Identifier of News |
| Heading | Heading of news |
| Content | Content of news |

**Table (A-9): Notificationstable**

| Value | Description |
|---|---|
| ID | Notificationidentifier. |
| Sender_Id | Identity of Sender |
| Receiver_ID | Receiver Id |
| Content | Content of Notification. |
| Seen | Seen by the user. |
| Link | Link of forum or comments |
| Upload_date | Date of uploading. |
| Upload_Tine | Time of Uploading. |

**Table (A-10): Schedule Class**

| Value | Description |
|---|---|
| ID | Portletidentifier. |
| Course_id | Identity of Course |
| Location | Venue of schedule |
| Day | Day of schedule |
| Start_time | Time of starting |
| End_Time | Ending time of schedule |

**Table (A-11): Student_Enrollment**

| Value | Description |
|---|---|
| ID | Courseidentifier. |
| Student_Id | Id of student |
| CourseID | Course registeredidentifier. |

**Table (A-12): Users**

| Value | Description |
|---|---|
| ID | User identifier. |
| User_Name | User name. |
| Proficiency | Information about the teacher assistantexperience. |
| Full Name | User's Full name |
| Department_Id | Department Identifier(Teacher) |
| IsTeacher | Check Teacher or Not |
| JoinDate | Join date to theportal. |
| Hashed_Password | Accountpassword. |
| Birthday | Daye ofbirth. |
| AbouteMe | Personalinformation. |
| Sex | Teacher assistantgender. |
| Website | Website ifavailable. |
| Email | Email ifavailable. |
| PhoneNumber | Phone number ifavailable. |
| phoneNumberPrivacy | Contact information visibility to otherusers. |
| EmailPrivacy | Contact information visibility to otherusers. |
| AboutMePrivacy | Personal information visibility to otherusers. |
| BirthDayPrivacy | Personal information visibility to otherusers. |
| WebsitePrivacy | Contact information visibility to otherusers. |

# LIST OF ABBREVIATIONS

| Abbreviation | Description |
|---|---|
| ADO | Active Data Objects(PHP) |
| CSS | Asynchronous JavaScript andXML |
| API | Application ProgrammingInterface |
| ASCII | American Standard Code for InformationInterchange |
| ASP | Active Server Pages(PHP) |
| B2B | Business toBusiness |
| B2C | Business toConsumer |
| B2E | Business toEmployees |
| CGI | Common GatewayInterface |
| CLR | Common LanguageRuntime |
| CSS | Cascading StyleSheets |
| DBMS | Database ManagementSystem |
| DHTML | Dynamic Hyper Text MarkupLanguage |
| DOM | Document ObjectModel |
| ebXML | Electronic Business Extensible MarkupLanguage |
| ECMA | European Computer ManufactureAssociation |
| EIP | Enterprise InformationPortal |
| EJB | EnterpriseJavaBeans |
| ER | Entity-Relationship |
| HTML | Hyper Text MarkupLanguage |
| HTTP | HyperText TransferProtocol |
| IEC | International ElectrotechnicalCommission |

| | |
|---|---|
| IIS | Internet and InformationServices |
| ISP | Internet ServiceProvider |
| JDBC | Java DatabaseConnectivity |
| JSP | Java ServerPages |
| JSR | Java SpecificationRequest |
| J2EE | Java 2 EnterpriseEdition |
| LDAP | Lightweight Directory AccessProtocol |
| MD5 | Message Digest 5Algorithm |
| MSIL | Microsoft IntermediateLanguage |
| MYSQL | MYSQL ServerDatabase |
| ODBC | Open DatabaseConnectivity |
| OLEDB | Object Linking and EmbeddingDatabase |
| PHP | HypertextPreprocessor |
| POP | Post OfficeProtocol |
| SMTP | Simple Mail TransferProtocol |
| SOAP | Simple Object AccessProtocol |
| MYSQL | Structured QueryLanguage |
| TCP | Transmission ControlProtocol |
| UDDI | Universal Description, Discovery andIntegration |
| URL | Universal ResourceLocator |
| UML | Unified ModelingLanguage |
| WAP | Wireless AccessPoint |
| WSDL | Web Services DescriptionLanguage |
| WSRP | Web Services for RemotePortlets |
| W3C | World Wide WebConsortium |
| XML | eXtensible MarkupLanguage |

# THE END