Final Year Project Report

Project Name: Sim Free Communication

Project Advisor:

Dr. Tahir Mushtaq

Submitted By:

Zohaib ur rehman 14024020165

Muhammad Muneeb Bin Jamil 14024020192

Muhammad Suleman 14024020120

Session

2014-2018

University of Management and Technology

C-II Johar Town Lahore Pakistan

Dedication

In order to achieve goals and aim for them unswervingly, it takes an awful lot of determination and effort as well as guidance of elders especially those who give their valuable time to us. We dedicate our humble effort to our loving

Parents

Who spent their lives to made us what we are today, their love, inspiration and prayers made us accomplish this work and granted us such success and honor Along with all respected

Teachers

For their continuous support and hard work to bring the best out of us.

Final Approval

Panel of Examiners

- **Head of Department** _____
  Department of Computer Science
  UMT Lahore

- **Program Director (Final Year Projects)** _____
  Department of Computer Science
  UMT Lahore

- **Supervisor** _____
  Department of Computer Science
  UMT Lahore

- **Co-Supervisor** _____

Acknowledgment

In the name of ALLAH the most merciful and Beneficial. We would like to take this opportunity to thank Almighty ALLAH who has enabled us to complete this project work on time and with best available resources. We also like to thanks our supervisor Dr.Tahir Mushtaq for his support, guidance and valuable suggestions. We would like to thank our beloved parents and all the friends for their love. Your contribution has been essential in the making of this project and we deeply appreciate that you have taken the time and effort to guide us through the process of decision making. We are indebted to our university and its management for enabling us to conduct this project successfully.

Special thanks for UMT, DLD lab for providing all practical work facilities also thanks to UMT volunteers, students for providing their mobile phone for practical implementation and demonstrations.

Project Title	**Sim Free communication**
Objective	**Communication System**
Supervised by	**Dr. Tahir Mushtaq**
Starting Date	**19/03/2017**
Completion Date	**01/04/2018**
Tools Used	**Android Studio, freepbx**
Operating System	**Android, Linux**

Plagairism Report

Abstract

Pakistan faced serious challenges from large scale natural disasters. In October, 2005 earthquake occurred in Kashmir. It was centered near the city of Muzaffarabad, and also affected Kyber Pakhtunkhwa province. In 2010 floods due to heavy monsoon affected about 20 million people in different areas of Pakistan. Natural disaster results into communication failure

So, licensed band communication cannot help in these types of situation. A free licensed band communication can help us during disasters. Offline communications systems during a natural disaster can be dangerous for affected. One of the quick and huge effects of flooding and cataclysmic events is the sudden and wide-scale breakdown of communications infrastructure. When local communication networks fails, the effect can be broadly felt and can wipe out access to standard versatile or landline telecommunications, notwithstanding Internet and even satellite-based crisis specialized devices. And one more application of this system can be, that there are different companies and organizations that user their own private branch exchange systems. This system can replace that old private branch exchanges.

REVISION CHART

Version	Primary Author(s)	Description of Version	Date Completed
Draft	All members	Information and requirement gathering	05/10/17
Preliminary	Zohaib Muneeb	Functional and non-functional requirements, project overview, system attributes, assumptions	20/10/17
Final	All members	Prototyping, design specifications, UML diagrams, Use cases, database design	03/11/17
Revision 1	M.Muneeb Suleman	Revised draft, Prototyping, debugging errors	18/11/17
Revision 2	M.Suleman M.Muneeb	Revised draft, non-functional requirements, system architecture diagram, data flow diagrams	25/11/17
Revision 3	M.Muneeb Zohaib	Class diagram, test cases, user interface	05/9/18
Revision 4	Zohaib	Whole document revised	19/10/18

CONTENTS

Definitions and Acronyms

Table 1: table of acronyms and definitions

Acronym	**Definition**
SIM	Subscriber Identity Module
PBX	Private branch exchange
Voip	Voice Over ip
SIP	Session Initiation Protocol

List of Figures

List of Tables

1. INTRODUCTION

1.1 Motivations

Pakistan faced serious challenges from large scale natural disasters. In October, 2005 earthquake occurred in Kashmir. It was centered near the city of Muzaffarabad, and also affected Kyber Pakhtunkhwa province. In 2010 floods due to heavy monsoon affected about 20 million people in different areas of Pakistan. Natural disaster results into communication failure, rescue worker can able to communicate with others. So licensed band communication cannot help in these types of situation. A free licensed band communication can help us during disasters. With the help of SIM free communication system we can minimize communication gaps.

1.2 Project Overview

Our project called SIM free communication using Raspberry Pi. During natural disaster communication problems occur. To overcome this problem we are building this system which can work in all situations (independent of telecommunication companies). Another application can be private exchange for private companies or organizations.

Customer can be army, rescue teams and government and also private sectors that want to implement this system in their premises for disaster management or as private phone exchange.

Our goal is to provide a SIM free communication system. So, we can overcome communication failure in disasters.

System functions are, raspberry pi devices which will act as base station through this station android phones can communicate with each other using android application in the form, voice calls.

1.3 Problem Statement

Pakistan confronted genuine difficulties from vast scale catastrophic events. In October, 2005 quake happened in Kashmir. It was focused close to the city of Muzaffarabad, and furthermore influenced Khyber Pakhtunkhwa area. In 2010 surges because of overwhelming storm influenced around 20 million individuals in various regions of Pakistan. Catastrophic event results into correspondence disappointment, safeguard laborer can ready to speak with others. So licensed band communication cannot help in these types of situation. A free licensed band communication can help us during disasters. With the assistance of SIM free framework we can overcome this issue.

Our project is solution to these problems. This system can create communication between affected people and rescue team members.

1.4 Objectives

Our objective is to provide SIM free communication system to the army, police, rescue teams so for disaster mitigation so they can save lives of the affectees. And to provide this system as private phone exchange that can replace typical telephone exchange.