

Final Year Project Report
Survival Horror Game
(VR and Kinect)



Project Advisor: Dr. Shahid Mehmood Awan

Submitted by:

M. Umer Asghar (14024020210)

Huzaifa Ahmad (14024020080)

Zartasha Jahangir (14024020145)

Session

2014-2018

University of Management and Technology
C-II Johar Town Lahore Pakistan

Dedication

The dedication to this project is equally distributed to the whole group members. Every group member have taken equal part in hard work to this project.

A dedication is not fulfilled without a proper support. We are entirely supported by our friends and colleagues in dedication to this project, especially from our teachers and seniors and we are very much thankful to University of Management and Technology for looking through our project in support.

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

We would like to thank Allah for giving us strength and this much achievement in our project.

We would like to thank our supervisor's in correcting, cooperating and guiding us in the right direction when we would stump at a standstill. We would like to thank our colleagues and friends in giving us the motivation and the ideas that has helped us in our project and the pleasant times they gave when we needed a break.

Finally we are thankful and grateful to our family in giving us the emotional support and the love that they gave.

Project Title

Survival Horror Game

Objective

Object is to develop a horror genre game based on Kinect and VR. Giving the user an interactive gameplay a new experience for targeted users. With the help of this project we intend to promote advance game development throughout Pakistan and to widen the scope of game development industry.

Undertaken by

M.Umer Asghar

Huzaiifa Ahmad

Zartasha Jahangir

Supervised by

Dr. Shahid Mehmood Awan

Starting Date

5th Januaury 2018

Completion Date

1st October 2018

Tools Used

Unity Engine

Blender

Photoshop

MS Kinect V2

VR Box

Operating System

Windows 8.1\10

Supervisor's Approval

I have carefully examined the documentation of the Final Year Project titled "*Survival Horror Game (VR and Kinect)*"; and I endorse that this documentation complies with the standards of an undergraduate level Final Year Project report.

Moreover, I have also checked for the plagiarism beyond Turnitin in the documentation and I am convinced that this documentation is not plagiarized.

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Abstract

Gaming industry is been around since the 1970s. With the introduction of consoles the gaming industry advanced to the next level. Gaming consoles like Xbox and PlayStation exceeded the expectation of people, the gaming industry became more and more focused on realism and intriguing gameplay and this curiosity leads to the invention of Kinect sensor which was introduced by Microsoft as a part of Xbox console. Kinect sensor introduced us to the whole new way of game playing and that is the physical interaction of user towards the game. Xbox released many Kinect base games like Kinect sports series and Blackwater (FPS Shooter) and they all intrigue the user. Now along with Kinect another technology makes an impact and that is the Virtual Reality platform which is based on the augmented reality concept. VR was firstly introduced for Virtual Reality video streaming but then it got the attention of the gaming industry. Today VR have become quite a trendy element in gaming. VR devices companies like Oculus and HTC vive have ensured a reality base experience for the user. Now there are applications that uses both VR and Kinect but there is not much development in that area because of high cost. VR and Kinect are mostly used on separate platforms Kinect on Xbox and VR on mobile or computers so there is very much less attention towards mixing Kinect and VR and the target market which are mostly the gaming zones find high end VR systems very costly. So our solution to this is to develop a singular platform game which in our case is the mobile platform which uses both Kinect and VR. This solution is less costly as compared to installing a whole system of VR, the combine cost of Kinect and Mobile VR is less than a single VR system. Our game is a virtual reality environment game based on the genre of horror survival game where a player can experience a physically interactive gameplay with real-time motion capture through Kinect. The player gets the game view in VR in every direction and with the VR a controller is also given to shoot down at the zombie enemies and survive. The Kinect keep track of the hand position and also track the body gesture to strafe or walk in game. The environment setting of the game takes place in different scenarios. So user can play in different kind of environments. Another thing that we wish to gain to promote the high level game development in Pakistan. The scope of game development is very less in Pakistan, there are some gaming studios but they are only limited to cloning concept. We think through are project we can develop a competitive gaming industry in Pakistan.

REVISION CHART

Version	Primary Author(s)	Description of Version	Date Completed
<i>Draft</i>	<i>M.Umer Asghar Zartasha Jahangir</i>	<i>Initial draft created for evaluation of capston I</i>	<i>15th Feb 2018</i>
<i>Preliminary</i>	<i>M.Umer Asghar Zartasha Jahangir</i>	<i>Second draft created for evaluation of capston II</i>	<i>20th July 2018</i>
<i>Final</i>	<i>M.Umer Asghar Zartasha Jahangir Huzaifa ahmad</i>	<i>Complete draft, for final submission</i>	<i>28th Sep 2018</i>

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Definitions and Acronyms

Table 1: List of Acronyms And Definitions

Acronym	Definition
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VR	Virtual Reality
AR	Augmented Reality
FPS	First Person Shooter
AI	Artificial intelligence
API	Application Programming Interface
SDK	Standard Development Kit
HMD	Head Mounted Display

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1. INTRODUCTION

1.1 Motivations

In the world of Computer Science, every field of it is achieving a level of advancement at rapid pace and one if this field is Game Development. Now game development holds a distinct nature to it than the other software development it may as well can be refer as the “Entertainment side” of the Computer Science. Game is also a software which just like any other software runs on particular systems but unlike other software these are labeled as the most used software in the world. In gaming industry VR and Kinect is a hot topic a whole new trend and a revolutionary step towards the future of gaming. There are many gaming projects related to virtual reality and Kinect but still the world has not yet seen the full capability of the these systems. It is one of our goals in this project to explore the potential of these emerging technologies and take the game development to a whole new level. Another thing that we are aiming for is to widen the scope of gaming industry in Pakistan because IT industry of Pakistan is lacking this element of industry and the developer is also not so much familiar to advance level of gaming. So our project might be able to become a starting link to explore ways in gaming industry.