TERMINAL HACKER

A Report for the Evaluation 1 of Project 2

Prajwal Joshi

Admission No. :16SCSE101535

Under the Supervision of

Mr D. Damodharan

School of Computing Science and Engineering

Greater Noida ,Uttar Pradesh

2019-2020

TABLE OF CONTENTS

Abstract

Terminal Hacker is a word game in which one is required to guess a correct word from a set of given letters. It is coded in C# and runs on Unity engine.

The basic objective of developing this project is:

- Integrate games with words, thus creating a better way to learn new words
- Help players to improve their vocabulary and knowledge with an interesting way
- Designing an interesting and less complicated way to learn English words
- Making players realize how much progress they have made due to level driven nature of the game

- Player needs to start from level 1.

- Player can quit at any point they want to.

- Player needs to complete a level before proceeding to next one

- An incorrect answer causes a reset, i.e. the player will be asked to answer again.

- Programmer can add new words to the game

- Programmer can remove existing words from the game

- Programmer can add new levels to the game

- Programmer can remove existing levels from the game

2. Introduction

Gaming industry is at its peak in the current and is still expanding. There are many varieties of games in market nowadays. Shooter, story driven, sports… a lot of them. Games are eventually becoming a part of our life. But most games don't provide with knowledge. And ones that do are quite boring. So here's Terminal Hacker, a word game that makes you feel like a mastermind hacker of the sci-fi movies. So it provides both, entertainment and knowledge.

In order to play Terminal Hacker, windows 7 64 bit or higher OS is needed.

System should have built in security features to handle different security threat like SQL injection, cross scripting, spamming.

This project report describes the software functional and non-functional requirements for release 1.0 of Terminal Hacker. This document is intended to be used by the members of the project team that will implement and verify the correct functioning of the system. Unless otherwise noted

2.1 Overall Description

User Characteristics

Player

Able to start, play, quit and continue the game from where they quit

Programmer

Programmer will have all the access rights. Programmer can create new levels, destroy existing ones, add new words and remove existing ones.

2.2 Purpose

Gaming industry is at its peak at the moment and is still growing. There are many varieties of games in market nowadays. Shooter, story driven, sports… a lot of them. Games are eventually becoming a part of our life. But most games don't provide with knowledge. And ones that do are quite boring. So

here's Terminal Hacker, a word game that makes you feel like a mastermind hacker of the sci-fi movies. So it provides both, entertainment and knowledge.

Word games are generally used as a source of entertainment, but can additionally serve an educational purpose. People can enjoy playing games such as Hangman, while naturally developing important language skills like spelling. Researchers have found that adults who regularly solved crossword puzzles, which require familiarity with a larger vocabulary, had better brain function later in life. The purpose of the project is also to make word games visually better. Word games, which are normally thought as boring and bland will be getting a total turnover due to this project.

In order to play Terminal Hacker, windows 7 64 bit or higher OS is needed.

System should have built in security features to handle different security threat like SQL injection, cross scripting, spamming.

This project report describes the software functional and nonfunctional requirements for release

1.0 of Terminal Hacker. This document is intended to be used by the members of the project team that will implement and verify the correct functioning of the system. Unless otherwise noted, all requirements specified here is high priority and committed for release 1.0.

2.3 Project Scope

The gaming industry is ever-growing. With this project that ties gaming with knowledge, it's hoped that the game will grow and more parts will be added into it so that it could thrive in the industry. Also this project is targeted towards the people who want to improve their knowledge in English language but don't want to spend time reading books. Hopefully this project can be implemented for other languages too

Literature Survey

Decision making structures require that the programmer specifies one or more conditions to be evaluated or tested by the program, along with a statement or statements to be executed if the condition is determined to be true, and optionally, other statements to be executed if the condition is determined to be false. There are many ways to implement decision making, i.e. switch…case, if…else, loops. Unity engine can be used to provide sounds and effects in games.

Digital games play a significant role in the life of the new generation. Although there are many criticisms, many studies focus on the importance of digital games in improving learner's vocabulary in the target language. Researchers have begun conducting several researches on how using games in the class can foster vocabulary learning. The aim of this paper is to investigate the impacts of digital games on children's vocabulary learning depending on a literature review. Many studies focus on the impacts of digital games on different aspects of education. This conceptual paper aims to shed light on some games' benefits, and challenges which educators and children

face in the use of digital games. The findings of this paper show that Games are used not only for making children successful in EFL classes but more importantly, for motivating them and increasing the cooperation among children. In addition, the findings state that there are advantages as well as disadvantages in using games for learning English vocabulary. However, researchers, teachers and designers of learning resources are beginning to ask how this powerful new medium might be used to support children's learning. Rather than shutting the door of the school against the computer game, there is now increasing interest in asking whether computer games might be offering a powerful new resource to support learning in the information age. This review is intended as a timely introduction to current thinking about the role of computer games in supporting children's learning inside and out of school. It highlights the key areas of research in the field, in particular the increasing interest in pleasurable learning, learning through doing and learning through collaboration, that games seem to offer. At the same time, the review takes a measured tone in acknowledging some of the obstacles and challenges to using games within our current education system and within our current models of learning. It goes on to propose some ways in which designers, researchers and educational policy makers might draw on the growing body of research in the field to create learning resources and environments that go beyond a sugar-coating of 'fun' to the full engagement that computer games seem to offer so many children today.After systematically reviewing their abstracts, a final shortlist of 628 potential full text articles emerged. Two hundred and seventeen out of the 628 were excluded, primarily, due to undesirable focus (e.g. theoretical scenarios for

using simulations in education). For each of the remaining 411 studies, the researchers identified and recorded some basic themes, for example, types of learning outcomes, effect or impact of game and simulation methods on learning goals, participants and settings, research questions, research methodology and results. Of these, 123 papers, which are found to contribute data, are selected for the review, whereas the remaining 288 articles are excluded, due to the fact that they are written in a language that the researchers do not understand, or because they are focused on a field other than higher education.

Proposed System

- Terminal hacker is a word game in which the player is required to guess a correct word from a set of given random letters. The set of letters will definitely result in a word as it is a random arrangement. For every successful completion of the level, the player gains a special item as a trophy. The decision making functions ensure that there are no errors from programmer's side

- Terminal hacker is a word game that's unlike any other games of its category. It makes the player feel like they're hacking into something, although they're just playing jumbled words. The interface generated by using Unity resembles that of the 90's computer, dark background with green text. Also the sounds of the keys and the running system generated by the system in those days give a nice feel to it. All sounds are generated by Unity engine.

- Terminal hacker can also help people improve their vocabulary along with entertaining them. They don't need to refer to costly books, by which they eventually get bored.

Existing System

Video games have become part of one's daily lives. Everyone nowadays plays video games on various platforms, be it mobile, personal computer or a console. Just like platforms, there are various categories of games. Shooting, role-playing, sports, arcade, puzzles etc.. There are various games under these categories, with each of them having their unique features.

But a lot of these games provide the players only entertainment. They don't actually provide anything useful, maybe except for some moral lessons. Also most of the word games like Scramble, Word puzzle etc. cannot be played digitally. Even if they can be, the interface is really bland and boring compared to the games of other categories. The project is aimed towards introducing a digital word game that can rival the games of other categories.

English is one of the most used languages and arguably the most important one to learn. But the available methods of improving English are either too expensive or very boring. The project also aims towards providing an interesting and inexpensive source for it.

Proposed Model

In Terminal Hacker**,** the player is given a set of random letters. Using those letters, they are supposed to make a meaningful word. Randomization is applied in order to generate the letters and control flow with loops, if…else and switch…case makes the game perform intelligently.

If the player is able to answer the word correctly, they get a new set of letters to guess another word. If not, they are asked to answer again. Answering a few words correctly leads them to a new level. The player can quit the game anytime whenever they wish to.

By implementing the Unity engine, the game has the interface of computer of older times. The black screen with green text, along with the sound of CPU makes one feel like that they're a real genius, thus making the gameplay interesting

Implementation of proposed model

1. Storage and randomization

A set of words is stored in the game by the game programmer. They are stored in an array By a randomizing function, the word is converted into a set of letters and is displayed on the screen for the player.

2. "Intelligence" of the game

By intelligence of the game, it implies the lack of loopholes and exploitable bugs. In Terminal Hacker, it is maintained by using decision making functions wherever appropriate.

3. Gameplay

The player sees the word on the screen along with a prompt that asks for the correct answer. If the player enters the incorrect answer, they are redirected to the part when it asks for the answer again. If the answer is correct, there can be two scenarios. If the player was not in the final level, the correct answer takes them to next level. If they were on the last level, the win screen appears.
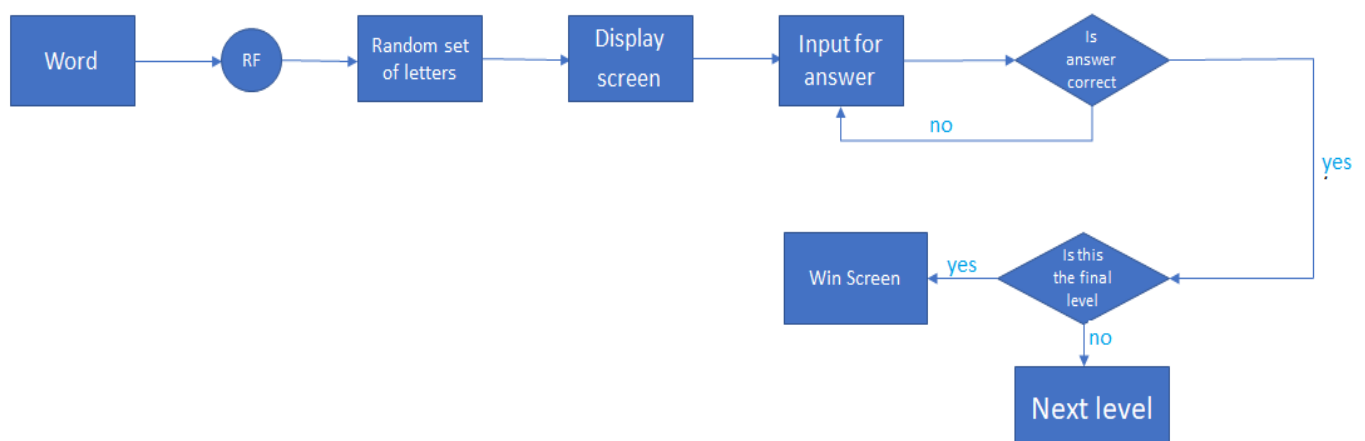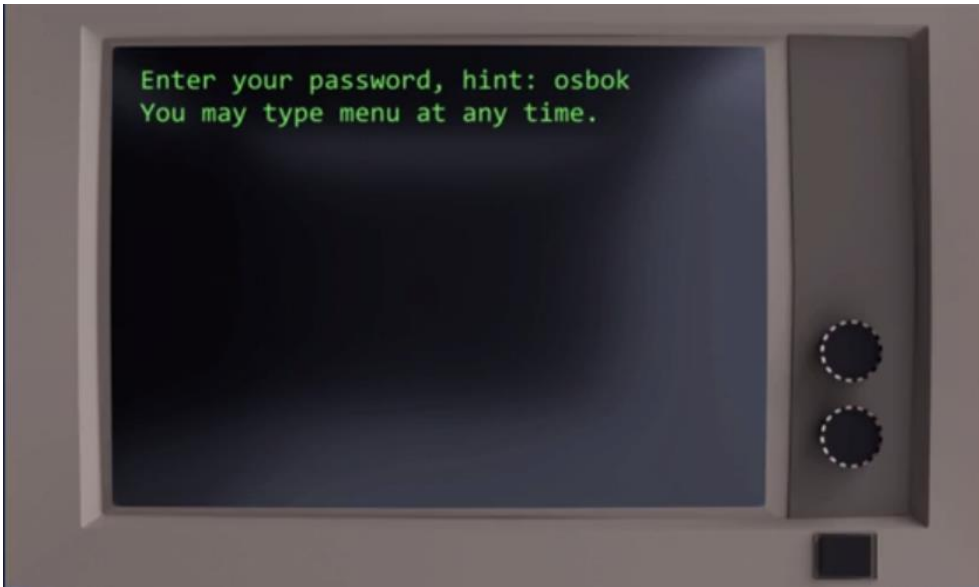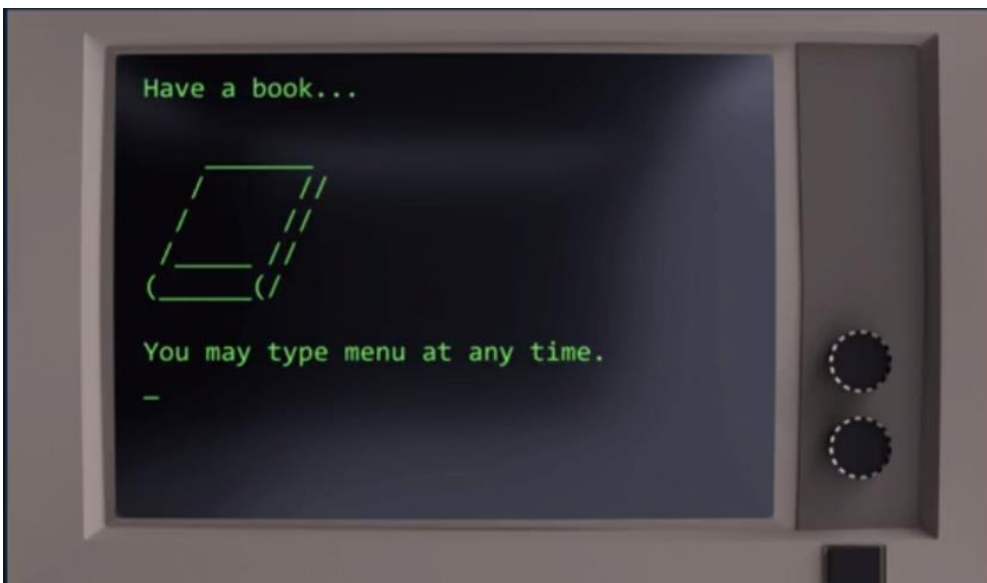
Output screenshots
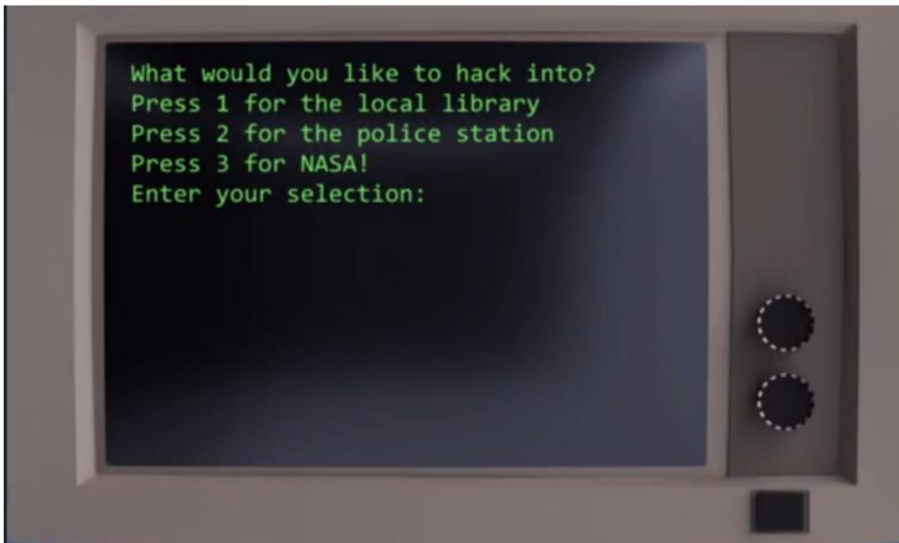
Menu Screen
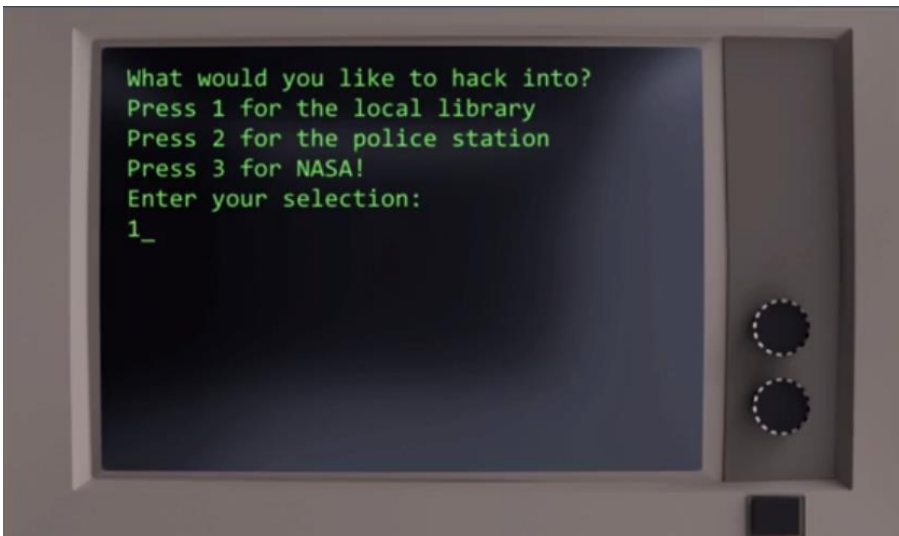
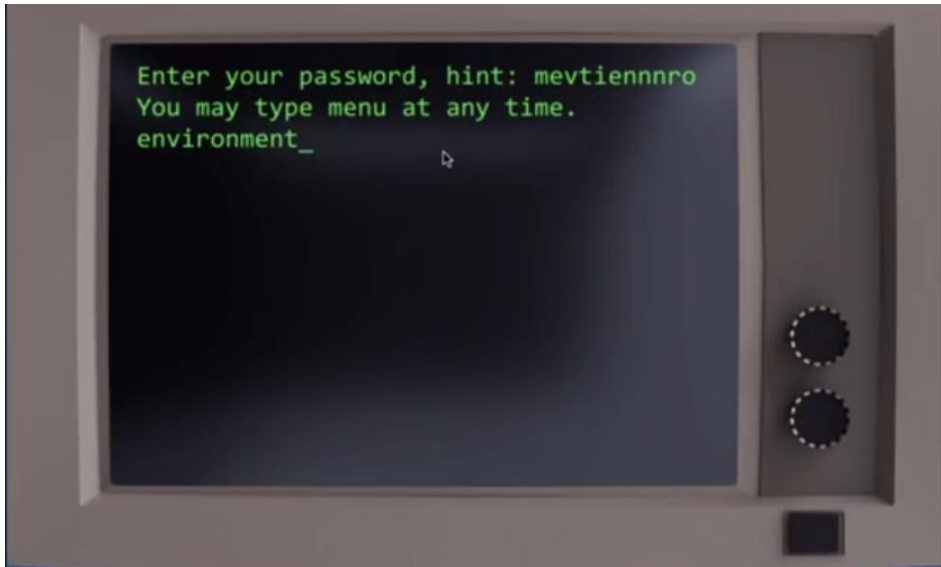Putting in the choice of their level

Player asked for their response

Player "rewarded" for correct response

Player asked for and answered correctly for the final level

The win screen of the game

Conclusion and future enhancement

Conclusions

- The game performed intelligently due to implementation of decision making. No anomalies were observed while the player was playing the game.

- The player who was able to answer all the words correctly won the game and was able to make the win screen pop up.

Future Enhancements

In future, more word games would be added. As of now, the game is only for the ones who wish to improve their English, but something for people who are new to it will also be planned. The programmer plans to release this game for other languages too, not only English. Last but not the least, some more themes would be added so that players can set a theme according to their convenience

References

1. Unity - Used for visual and sound effects

2. C# - Used for coding.

3. Microsoft Visual Studios- IDE for writing C# code

OS used- Windows 10- 64 bit

Device used- Dell Inspiron

Websites:

https://www.google.com

https://unity.com/

https://visualstudio.microsoft.com/

https://docs.microsoft.com/en-us/dotnet/csharp/

Books:

1. C# in a nutshell by Joseph Alabhari

2. Learning C# programming with Unity 3D by Alex Okita