SOFTWARE DEVELOPMENT

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Contents

1 | Revision History

Date	Version	Description	Author
2020/03/26	0.1	Iteration 1	Noorie Esmaili

2 | General Information

Project Summary	
Project Name	Project ID
Hangman Game	Hangman_game2020
Project Manager	Main Client
Noorie Esmaili	Berlitz language School
Key Stakeholders	
The Project Manager The Programmer/Designer The Customer The Tester The Promoter The End User	
Executive Summary	
This project is about Hangman game. Hangman is a guessing game. System choose a word, phrase or sentence and the player tries to guess it by suggesting letters within a certain number of guesses. If player choose wrong letter the system starts drawing a hangman. The game will end after a certain number of wrong answers and player loses. The purpose of this game is to help students in language school entertainingly learn English words or phrases.	

3 | Vision

This vision aims to explain what the achievement of this application is. This application can help people of all ages who like to learn English vocabulary and phrases. When entering the application, the user can select to start a game, view the high score list, or quit the application. If they choose to start the game, any categories like animals, colors, clothes, proverbs, phrases, etc. can be chosen. In this game, the player has ten chances, and the game gives them five extra chances for vowel sounds. However, if the player guesses the correct word, there would be 10 points for each letter, and the player will get score according to word length. As a higher score as the player gets, the higher his rank would be in world rank. These additional features could increase the interest in this hangman game. Put ranking for this application would convince the users to play it more, and that would help them to learn more English language in a funny way.

Reflection:

It was a bit difficult to determine how much details should be included in the vision. Creating a vision statement will cover the project's purpose. Since I never had any experience with project planning, I felt that I need to look at examples of vision statements. First, I tried to explain what hangman game is, but then I understand I need to explain just purpose and new features as well. So, I learnt a little about writing the vision, and I got some idea about how different hangman game can be. As it should not be a detailed text, it was tough to keep the vision as simple as possible.

4 | Project Plan

4.1 Introduction

Hangman game is a guessing game for players. The game comes up with a word, and the system puts a dash for each letter. The player guesses the letters one at a time that they think is in the secret word or phrase. If the player guesses right, the letter comes up over the corresponding dashes. If the player guesses wrong, the system starts drawing gallows. Each time player makes a wrong guess chooses a new body part is drawn and added to the hangman. The hangman consists of gallows, head, body, two arms, and two legs and a corded. If the player correctly guesses before the hangman is complete, they win. Otherwise, they lose. Once the player wins, the player gets the score and be able to guess another word and get a higher score. The main goal of the project is to produce a text-based Hangman game in java code and to complete it within the given time frame.

4.2 Justification

The application can be used for entertainment purposes. It can be useful to particularly people who wants to learn English or improve their vocabulary.

4.3 Stakeholders

Costumers: Customer needs a complete and enjoyable game with no bugs: teachers, game hosting platforms, clients like institutions. Teachers and institutions can use this application for upgrading their smart classes to teach Language more easily. The game Hosting platform is handy as it helps you to connect to the entire world of developers if any of the higher clients love the concept and development; they look up for the upgrade versions.

Developer: wants to develop this game and, as much as possible, make it stable.

Testers: wants structured code, preferably with the distinct hierarchy to make automated testing of separate classes possible.

Promoters: are going to market and make the game known to as many people and players as possible.

End-users: Students who use this application by recommendation of their teachers or language institutions. The end-user will be able to come with some input about which features would be fun or useful in the game. Towards the end of the development, the end-user could tell about the experience of playing the game and minor or significant sources of irritation that should be handled.

4.4 Resources

Since the game use java as a programming language, there are some platforms, and books can be used as resources to develop the game. the platforms which are used as a resource is:

1. The oracle java documentation.
2. The book of Software Engineering 10th ed. by Ian Sommerville.
3. The book of Introduction to Java Programming and Data Structures 11th ed. by Y. Daniel Liang.

The time of the project is divided into four sections:

1. two weeks for making a project plan
2. 21 days to build the complete structure of the game and make required documentation for it
3. 15 days to do required game testing and make documentation for it.
4. 11 days to finish the final details and deliver the game.

The exact project dates are available under the overall project schedule.

4.5 Hard- and Software Requirements

Software required:

1. JDK (java development Kit) version 13 and Java virtual machine that is the base software needed to develop Java programs.
2. Eclipse version 2019/06 ultimate edition to work as an environment for coding the game and Java Version 13.
3. JRE (java runtime Environment)
4. Office Word latest version to help for writing the required documents
5. Adobe Acrobat Reader to help to build the pdf documentation.

Hardware required:

1. Working computer that can handle and run the required software.
2. And to run and play the game, the hardware must have JDK 1.8, at least.

4.6 Overall Project Schedule

1. 2020-02-03 Project plan, Skeleton code.
2. 2020-04-10 Modelling: Create Document Requirements, UML, and build a complete game structure.
3. 2020-04-17 Testing Test various parts of the game and solve the problems if needed.
4. 2020-03-20 Hand-in project: At this point, a finished game of hangman should be able to be delivered to the customer.

4.7 Scope, Constraints and Assumptions

Scope:
This project is text-based, and it also includes high score tables and the ability to remove words from the words list. The game should present a menu to the players and give them a chance to choose from the categories. The player should be able to guess a randomize word by guessing its letters. The players should be able to guess the correct letters 10 times, and they should not be able to guess a letter twice.
Furthermore, the game should be able to show the guessed letters (right or wrong) and the message of winning or losing the players. Moreover, the game should be able to hang a part of the hangman with each wrong guess. And give the players 5 chances for vowel sounds and don't count them as wrong words.

Constraints:

1. The limited time is available for developing this project. This prevents the implementation of some additional functionality to attract more players.
2. The game runs only on a java environment meaning it is not a web application.
3. It has no Sound features.

Assumptions:

1. The game is playable on any java execution programs by running the main file.
2. The user knows how to set up the necessary environment to run the program.
3. The user has JDK and JRE installed on his/her system.
4. It is assumed that the user has at least some basics in English.

Reflection
It was hard for me to understand precisely what and how many details should each part has. Some parts should have dates, but as the new deadlines they were not specified for a second chance, so I used the first deadlines. It was somehow hard to see how many stakeholders our project can have, nevertheless I tried to distinguish some of them, and I hope that will be enough.

5 | Iterations

5.1 Iteration 1

The project's first step consists of drawing up a plan and starting with simple execution. The plan consists of general information, vision, time log, iterations, and should include some reflections. In the first iteration, the skeletal code for the project is required as well as basic classes.

-HangmanManager.java
-Hangmantest.java
-Level.java
-Player.java

6 | Risk Analysis

6.1 List ofrisks

Risk is anything that tends to influence the fluid flow of the project. There are some possible risks to the project mentioned below:

1. The exact time required to develop the game and the documentation has a moderate probability because the project time is limited and can have a high impact on the project.
2. Lack of knowledge is a moderate probability and has a high impact on the project.
3. The risk of losing the project files and data or computer crash has low probability but a high impact on the project.
4. The risk of sickness for the developer is moderate. The sickness can have a low to high impact on the project based on a time of the healing.

It is crucial to be prepared to tackle risks at any time, known as Risk management.

6.2 Strategies

1. Make sure to use all available times and plan ahead of time.
2. Use all the available books and resources like the internet, YouTube, etc.
3. Get a backup from the project on an external hard or online backup like OneDrive.
4. Have healthy diets and prevent them from doing things that make them sick, or they know that they have allergic to them.

Reflection

The nature of the project makes it possible to control and reduce the risks. Although there can be more risks, I have highlighted some of the things can happen during the project above. I must admit to experiencing some of them in the course of them myself. I was hospitalized 2 days to the first submission date and couldn't meet my set target. This affected the progress of the project and thankfully I was out after some days to continue.

7 | Time log

First Iteration

Task	Estimated time (hours)	Actual time Used (hours)	Reflections
Reading 4 chapters of course book	4	6	First, I thought I can handle it in 4 hours, but it takes longer because I needed to take notes.
Understand what exactly this game is	0.5	0.25	Tried to play an online game to see how it works.
General Information & Vision	1	1.5	It was hard to understand what exactly should vision has.
Project plan	8	12	Took more times that expected to understand exactly what each part needs.
Risk Analysis	6	5	It takes less time than expected
Skeleton of code	4		