HANGMAN PROJECT

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Contents

1 Revision History **3**

2 Vision **3**

3 Project plan **4**

3.1 Introduction 4
3.2 Justification 4
3.3 Stakeholders 4
3.4 Resources 4
3.5 Overall Project Schedule 4
3.6 Scope, Constraints and Assumptions 5

4 Iterations **6**

3.1 Iteration 1 6
3.2 Iteration 2 6
3.3 Iteration 3 6
3.4 Iteration 4 6

5 Risk Analysis **8**

4.1 List of risks 8
4.2 Strategies 8

6 Time log **9**

7 Reflections **10**

1 | Revision History

Date	Version	Description	Author
06/03/2019	1.0	Project Plan & Skeleton Code	T. Mendes
10/04/2019	2.0	Use Cases, Class Diagrams & Major functionalities	T. Mendes
08/03/2019	3.0	Unit Tests	T. Mendes
23/08/2019	4.0	Remaining Use Cases, Final Reflections & Final Manual Tests	T. Mendes
15/04/2022	5.0	Documentation revision and update	T. Mendes

2 | Vision

This project aims to produce a console playable version of Hangman that stays true to the original game while still being playable by almost all ages via the use of a difficulty selection option.
This is to be achieved through the main menu before the start of the game which will allow the player to control the pool from which a random word is selected. As a result, the younger player can enjoy the game while keeping the more experienced player from becoming bored of easy words.

3 | Project Plan

Below the specifics of the project plan will be discussed, namely, a brief introduction, the justification for the project, the resources and overall schedule.

3.1 Introduction

The project aims to create a simple version of the hangman game with visual feedback on how the player is doing through the depiction of the hangman's death stage. The game will include three difficulty settings ranging from easy, medium and hard. This will affect the length and/or complexity of the word thus making the game easier or challenging as the player sees fit.

3.2 Justification

The concept of hangman is simply to pull a random word and guess what it is – in itself the concept is interesting but lacks depth because the resulting words are as random as the word pool of the game – by adding difficulty levels to the game a wider range of audience can be targeted as it provides a form of variety which is consistent with the player's choice – giving the player the option to fine-tailor their hangman experience. The ability to select these difficulties also leaves many options open for future development such as adding word categories alongside the primary difficulty selection option. This structure also lays the foundation for the possibility of adding new words to the word pool.

3.3 Stakeholders

The developer wishes to design the game with feature flexibility in mind so that additional features can be added in the future.

3.4 Resources

- Visual Studio Code 16.2
- Java SE 11.0.2
- Developer 160 hrs max.

3.5 Hard- and Software requirement

- Developers: JDK 11
- Users: Java SE 11.0.2

3.6 Overall Project Schedule

Date	Matter
08/02/2019	• Project Plan • Skeleton code
21/02/2019	• Updated Source Code • Use Case Diagram • Fully Dressed Use Case for “Play Game” • State Machine Diagram • Class Diagram • Time log
08/03/2019	• Test Plan • Manual Test Cases • Automated Unit Test Code
22/03/2019	• Updated Project Plan • Complete All Use Cases

3.7 Scope, Constraints and Assumptions

Scope: The game aims to be a simple and easy to use console version of the game. The start screen will be a greeting to the player with a menu to play the game or close the game.
After selecting a difficulty, a word from the predefined list of words is randomly selected.
The number of letters of the chosen word will be displayed using underscore signs. The player must then guess what letters could form part of the word. In this game the player will be presented with a visual representation of how many lives they have left.
For every correct letter guessed, the corresponding underscore will be replaced with the suggested letter, while every time a mistake is made the next piece of the death scene will be set.

Constraints: The graphical representations of the game are limited to the console’s display capabilities.

Assumptions: The user has access to the necessary hard- and software listed above, as well as access to a Latin alphabet or keyboard on their device in order to navigate the game.

4 | Iterations

4.1 Iteration 1

Due**:** 08/02/2019

Since the first iteration is about setting up the project, the majority of the focus is on the documentation in order to have a clear path in mind that can be referred to in the future. The skeleton serves to be used in iteration 2 where the bulk of the game will be added.

- Write Documentation (Est. 2 hrs)
- Write Skeleton Code (Est. 30 mins)

4.2 Iteration 2

Due**:** 21/02/2019

In the second iteration the bulk of the game is added: The different cases for every “life” the man being hung loses should be visible. It should be possible to start a round with an easy or difficult word. It should be possible to exit at any time as well as cancel the exit request and lastly once victory or defeat is achieved a new round should be playable.

- Write Use Cases (Est. 2 hrs)
- Implementation of Major Functionalities (Est. 4 hrs)
- Use Case Diagram (Est. 1 hr)
- Fully Dressed Use Case (Est. 30 mins)
- Class Diagram (Est. 1 hr)
- State Machine Diagram (Est. 1 hr)
- Time Log (Est. 15mins)

4.3 Iteration 3

Due: 08/03/2019

The third iteration will be dedicated to fixing any known bugs, making sure the expected outcomes occur, as well as checking for any random bugs that may be provoked via manual testing.

- Test Plan (Est. 6 hrs)
- Carry Out Manual Tests (Est. 2.5 hrs)
- J-Unit Testing (Est. 3 hrs)

4.4 Iteration 4

The final iteration is for polishing off the game. Resolving any possible outstanding bugs with the game, as well as writing up the remaining use cases and any final documentation before finally handing in the project.

Due: 22/03/2019

- Complete All Use Cases (Est. 2 hrs)
- Check Final Product and Deliver. (Est. 2 hrs)

5 | Risk Analysis

Risk	Probability	Impact	Strategy
Underestimating Time Required	High	High	Start the task as soon as possible. Keep phone on silent/vibrationless while working.
Changes to Requirements	Low	High	Keep the code structure as clear and flexible as possible using MVC.
Irreversible Hardware Failure	Low	High	Ctrl + S a lot and save all documents from my SSD to my EHD every hour or so that I work on something important or whenever I make big changes to a document.
Illness	Low	Low-Mild	Go swimming and to the sauna 3-4 times a week to help keep the immune system strong. Maintain good hydration.

6 | Time log

Date	Matter	Time Estimate	Time Taken
05/02/2019	Prepare Documentation: • Project Documentation Research	2 hrs	~~2hrs~~ 8 hrs
07/02/2019	Implement Skeleton Code: • Greeter • Want to play? • Want to exit?	30 mins	15 mins
21/04/2021	Create GitLab Repository	5 mins	5 mins
15/04/2022	Write Use Cases: • start game • play game • quit game	15 mins	30 mins

7 | Reflections

Vision:

The process of planning the game didn't pose much of an issue. It was a good opportunity to reflect on the step by step process of how the game would run – and it was fun to go through all the individual parts that would be communicating with each other. It made me question whether I already knew everything that I needed to know in order to achieve the final result of having a functional game. It was also fun to consider that I could actually put my own twist on the game with new features.

Project plan:

Producing a project plan seemed a little redundant at first as I myself am working on the project alone and so have no one to really share any of this information with but myself… and then I remembered how forgetful I can be at times. Past that, I can see how in a corporate setting having a project plan would help keep everyone on track. As it would be clearly stated who is working on what and when the important dates for delivering things are. Ultimately this helps keep the multi-faceted nature of organising several individuals as simple as possible.

Risk analysis:

The risk analysis also seemed somewhat redundant at first glance as, as was mentioned above, there was nobody I needed to share any part of this entire process with. Furthermore, any risks would be completely within the realm of foreseeability for me as, from my own perspective, it could be said that I know what I am capable of. Nonetheless, the process did force me to throw caution to how I would go about the project on a very general level, and what was within the realm of reason in terms of expectations for the final product. It was also a bittersweet reminder of the time I had to spend 6 hours rewriting a report because my EHD, where I stored all my documents at the time developed a corrupt sector where most of my university files were saved.