Project Name:Hangman

Organisation: Linnaeus university

Project plan

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Github Repo:
https://github.com/sg222wn/Java-Projects

3. Vision

Application to be completed: Hangman game

In the given project, we are required to create a game called “Hangman”. Hangman is a game which started out as a paper and pencil guessing game and eventually made its way to the virtual world. The motive of this game is to make enhance the players’ knowledge in different fields. The game can be played by one or more players. The player has to guess a word based on a given clue and the length of the word. The word or the piece of text to be guessed is in the form of empty blanks or special characters like *, _, etc. If the user guesses the correct letter the number of chances remains the same and the special characters are replaced by letters at its respective positions in the word. The user can guess the letter irrespective of the case. If the player guesses a letter of the word correctly then he progresses further in the game. If he guesses a character wrong then he loses a life. The ultimate vision of the game is to enable the player to know more words in English., so he can apply them in his real life, thus increasing the player’s knowledge in those fields. For example, the word to be guessed is “Hello” and the number of chances the player has is twelve. The word is shown as _ _ _ _ _. If the player’s first guess is ‘l’. Then it is displayed as _ _ a _ _ a _ and the number of chances is still eight.The other hangman games just give the user certain words to guess which won’t be of much curiosity to the user. This hangman game is a really simpler one. This has limited number of words(100 words say) but each word is very different in such a way that people who don’t even like English would want to search up for that word in Google. This will encourage them in using the words in daily conversations. The selected words are almost deserving to be used in daily conversations. That will be the main aim of this game.

Reflections: The vision really helped me in organising all my ideas of what my hangman game should look like in the future once it is done. It also gave a clear idea of what to expect from this game which is really useful as many things can be done in

a simple hangman game but I'm just focussing on one of those features to get the most out of the game, in a much simpler way.

Our Task: There are four iterative process but the task of the assignment 1 is to create the first iterative process of the Hangman game. We need to complete the documentation first so that implementation goals are met. We need to implement an idea and make a skeleton code for the project to work with. However, the main functionality that we will implement in these iterations is to add different ideas to the project. Each iteration has a task which adds new features to the code and develops it incrementally.

4. Project plan

Assignment 1 should be submitted on 8 February 2019. The assignment is based on creating a game called Hangman. The Software Technology course has three themes. All themes have an assignment attached to it. We will be using the concepts from each theme to complete its respective assignment. Theme 1 is based on Process and Planning. This will be used as a part of the assignment 1. In assignment 1 we should create a documentation of the project and add the first iteration which is to implement an idea to develop the game and some skeleton code for the project to work with.
Then in the assignment 2 which has the deadline on 21 Feb 2019, I will further update my code and also the documentations and make some charts and diagrams which will increase the understanding I have on this project and also simultaneously making it more easier to code certain parts of the program.
The assignment 3 which has the deadline on the 8th of March 2019, I will test all the important parts of my code both manually and automate some tests too. This will notify me of some errors which I will correct by the next iteration.
The assignment 4 is the final iteration which consists of some tests in the final version of the game and also a slight code update. This iteration is mainly focussed on the documentation of whatever we did throughout the process of making this game.
Regarding the game first the base version will be implemented in normal Java code and will later be given a UI using JAVAFx or FXml.
Reflection: Planning a project like this in advanced could be really useful as we just have to follow the plan in the future while actually working on the project. The project plan is really useful incase someone else wants to design the same game later in the future but

also doesn't want to waste a lot of time thinking about the basic logic. The project plan is also very organised which leads to less confusion in selecting tasks during the course of the project.

4.1.Introduction

Hangman is basically a game that allows the player to guess a word based in the given hint. If the user guesses the word in less than a specific amount of trials then the player saves a man from getting hanged. If the player is unable to guess the word then he loses and the man is prosecuted.

4.2.Justification

The project deals with the usage of different themes for different assignments. The theme of Process and Planning will be practically implemented in this assignment which can enhance the learning experience.
The code used is very important to determine the working of the game.
The idea is to learn to make high quality software with the course.

4.3. Stakeholders

User*:* Plays the Hangman game designed by the developer. The user is given a limited number of chances to win the game.
Developer*:* Designs the game by constructing the code. Tests the functionality of the code and can adds features like user registration, time limit etc, as well as remove them.

4.4. Resources

The resources available to complete the development process are:

4.4.1. Man- Power: 1 person, about a month to develop using eclipse which runs JAVAFX.

Role: Implementer
Worker: 1
Responsibility: Everything

4.4.2. Tools

JDK version 11.0.1 and Eclipse is used to construct the code and compile it.
Study material from MyMoodle.

4.5. Hard- and Software Requirements

4.5.1 Hardware

A personal computer or laptop with at least 2GB Ram, Intel pentium, 50-60MB of HDD space should run this program with ease.

4.5.2. Software

Eclipse, Java Version 1.8.0_181 or higher.

4.6. Overall Project Schedule

The deadline for assignment 1 is 8 February 2019.
The deadline for assignment 2 is 21 February 2019.
The deadline for assignment 3 is 8 March 2019.

4.7. Scope, Constraints and Assumptions

This project plan applies to achieve the following requirements:
1.Construct a by game using optimized graphics that would run in almost all computers.
2.The theme of Process and Planning will be practically implemented in this assignment which can enhance the learning experience.
3.The idea is to learn to make high quality software with the course.

5. Iterations

This heading consists of various iterations done throughout the course of this project.
Iteration Planning: This project is done through various iterations. So basically the plan for the first iteration is to make a hangman game with simple logic, that runs in the console, without any user interface and also to create a project plan, vision and risks documentation in the iteration. The second iteration consists of making some changes to the game by making it into JAVAFx with some basic gameplay and also making various UML diagrams in making it. The third iteration is saved for testing, which is one of the more important steps in product development and also of course to

add additional features in the game. The final iteration will have the completed user playable game, with complete documentation.

5.1. Iteration 1

The first iteration is this project plan along with some degree of implementation. The documentation should be completed first so that the implementation goals are met in code. An idea and some skeleton code need to be implemented for the project to work with. This is assignment one. In this first implementation, the basic Hangman game is implemented using a word that is defined and the result is displayed in Eclipse. The word defined was “Hello” and the user had to guess that word, which if he did correctly would enable him to win the game.There is no sort of UI in this iteration, just the console in eclipse.

Simple enough I suppose I could allocate 10 mins for coding the logic and spend some time on the documentation part of the project.

Reflection: Writing a basic algorithm for the actual game in JAVA helped very well to actually get an idea of how the actual game would turn out in the final iteration. It would also be easier to divide the code into different functions in the final code which will lead to the code looking more neat. Also the documentation part of the first iteration which is writing the Project Plan, Various Risk Factors, etc. Has allowed me to maintain a decent, organised record of this project, so that it may be used later in the future.

5.2. Iteration 2

This iteration would focus on drawing the UML diagrams for the class, state machine etc,,.. and also simultaneously updating the code to a certain extent. All diagrams need to be included in the project documentation and should be implemented in the way you have written the code for your game.

5.3. Iteration 3

This iteration would mainly focus on testing the various essential parts of code. Testing would include testing manually for the JAVAFx parts of the code and also some automated JUnit tests for testing the methods in the program. A test report will be generated and required changes will be made to the code to achieve complete test success. Additional features may be included to the game in this iteration although the main focus is on testing.

5.4. Iteration 4

This would be the final iteration which is the completed product. This version of the code should contain no errors and fulfills all the Use-Cases that were mentioned in assignment 2. The steps in iteration 1 – 3 must be reiterated for a set of new features. The developer must view the project as a whole and not only its parts. The fourth iteration would also include the complete detailed instructions of how the game was created through various iterations and also the completed documentations.

6. Risk Analysis

Product designing always comes with risks in various forms. Considering this project in particular, the risks associated are mainly project risks as there isn't a budget or business in this project nor a team. So some risks to take into account are, the accidental loss of JAVA code, loss of internet connection etc.

1. I might fall sick during the course of the project which may lead to certain delays in actual working time of the project.

• **Effect**: The assignment might become a failure and I would not get the expected grade.

• **Occurrence level**: Medium

• **Solution**: Stick with the deadlines and plan the work.

2.It is difficult to handle all the errors thrown in the program.

• **Effect**: I might overlook a few errors in the code and my code might lack transformation.

• **Occurrence level**: Medium

• **Solution**: Handle the most repeating or the most important errors.

3. I am not very comfortable in JAVAFx.

• **Effect**: It might be time consuming to learn the concepts of JavaFx and create a proper user interface for the game.

• **Occurrence level**: High

• **Solution**: Although it is not compulsory to make the project in JAVAFX, I personally thought to actually learn and work in JAVAFX to make a neat user interface that would actually make the user to understand what's going on. The deadline for the course assignments must be considered when planning the study schedule for JAVAFx.

4. What if I accidentally delete the Java code files.

• **Effect**: As all components are of equally high priority, it would take a bit of time to re-code the component and merge it again with the main program.

• **Occurrence level**: Highly unlikely

• **Solution**: I must be more careful if I were to set up a disk cleanup sometime. I would also backup the files to an online cloud service like Google Drive,.

Reflection: Writing down the various risks that I might encounter during the process, made it easier for me to know my weaknesses and the parts where I have to work on for a long time. Also simultaneously providing the solutions to the risk has made it easier not to remember the solution if I ever run into a problem. Also just because I wrote down the Risks, I would also be conscious about these risks and handle them with extra care.

7. Time Log

The time log contains the date, time and the task to be performed. It covers the overall time taken to learn and understand a problem as well as plan, implement and reflect a specific task.

Iteration 1:

Estimated time for writing the Vision: 1 hour

Actual time: almost 1:45 hours

It took like 1:45 hours just because I had to write the vision from my own point of view and it took some time to think and put the thoughts in paper.

Estimated time for planning the basic logic(pen and paper): 10 mins

Actual time: 15 mins

Making the logic took about 15 mins. Since it was the first iteration there was not much code that was needed. So to make the pseudo code in pen and paper took about 15 mins

Estimated time for coding the logic into JAVA: 15 mins

Actual time: 5 mins

I could type considerably fast so it took just 5 mins to get the code working.

Estimated time for writing the Project plan : 2 hours

Actual time: almost 1:15 hours

The project plan also required some thinking before I could type it out.

Estimated time for writing the Risk Management: 1 hour

Actual time: almost 30mins

Risk management was basically my weaknesses in this project, which I had thought of before so it was completed considerably faster.