1DV600 - The Hangman Project

Assignment 2

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Contents

1 Time log

1.1 Iteration 2 - Planning

In the second iteration is time to model the game using UML and then to add features and start making a working game. Diagrams are also to be included in this project documentation and should be implemented in the way modelled.

For this iteration the first step is to create a use case model as well as writing the use cases. The use cases model will show the different use cases available and how they relate to the the gamer. The use cases should be fully dressed cases detailing how the game works.

Next up is to create the state machine for the play game use case. The state machine should clearly show how the game is intended to work. Even extra features that might not be implemented in the game during this iteration should be shown in the state machine.

A basic implementation of the hangman game will be created during this iteration, with extra features to be added in a later state. Lastly, a class diagram is to be created documenting the class structure of the implementation.

Read chapters 4, 5, 6, 7, 15 and 20 and watch lectures related to these subjects.

Week 7: 11-17 February
Watch the first lecture of theme two, read chapters 4, 5 and 20. Watch pre-recorded lecture related to these chapters. Create use case model, write uses cases and start implementing the Hangman game.

Estimated time:	
Lectures	6h
Reading	6h
Creating Use Case Model	1h
Writing Use Cases	2h
Coding	3h

Week 8: 18-21 February
Read chapters 6, 7 and 15. Watch pre-recorded lectures related to these chapters. Create state machine for the play game use case. Watch second lecture of theme two. Continue to implement the game until a working version of the game is finished. Create Class Diagram.

Estimated time:	
Lectures	8h
Reading	6h
Create State Machine	2h
Coding	18h
Create Class Diagram	2h

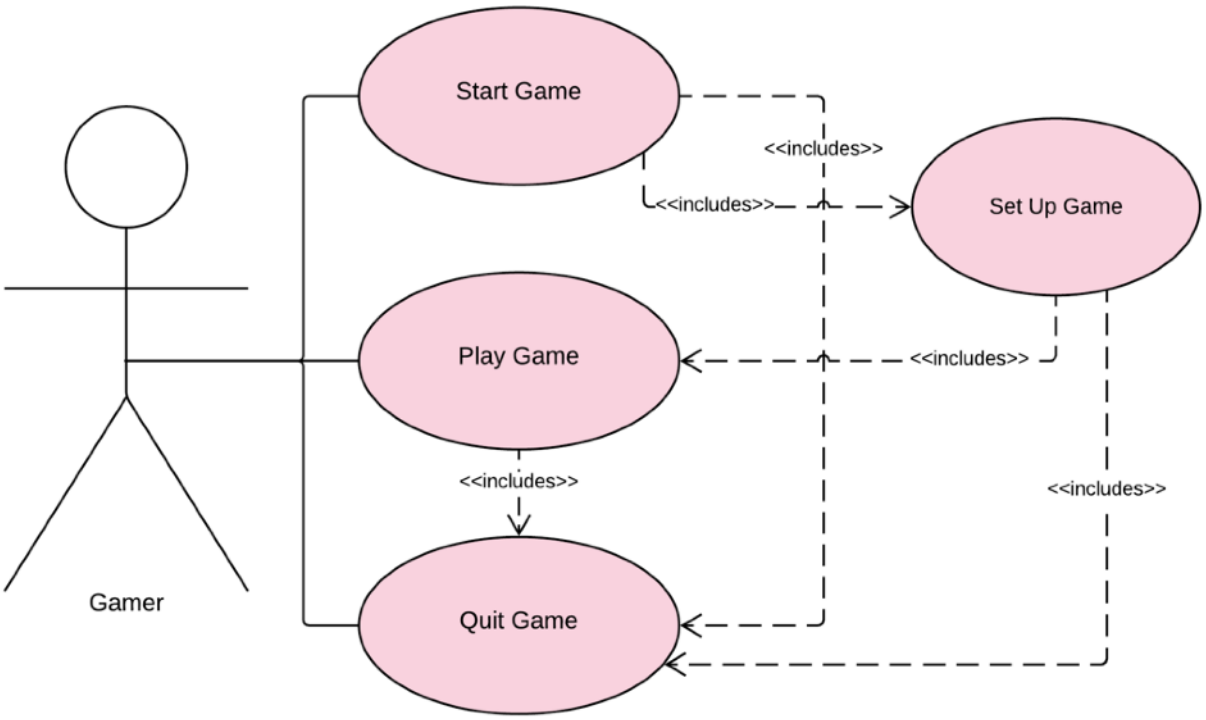
Deadline for iteration 2: 22 February

1.2 Time Log

Date finished	Task	Scheduled time	Actual time
2019-02-06	Watch live lecture on theme 2	2h	2h
2019-02-13	Plan iteration 2	1h	1h
2019-02-18	Expand use case model	1h	1h
2019-02-15	Write fully dressed use case for Play Game	1h	1h
2019-02-17	Write additional use case for Set up Game	1h	0,5h
2019-02-19	Create State Machine Diagram for Play Game	2h	2,5h
2019-02-15	Implement functionality to start game and display a word to guess in Hangman game.	3h	2h
2019-02-15	Read chapter 4	2h	2h
2019-02-16	Read chapter 5	2h	2h
2019-02-18	Read chapter 20	2h	2h
2019-02-18	Watch Lecture 4 – Systems and Software Modeling	2h	2h
2019-02-18	Read chapter 7	2h	2h
	Watch Lecture 5 – Modeling with UML	2h	-
2019-02-20	Read chapter 6	2h	2h
	Watch Lecture 6 – Software Architecture	2h	-
2019-02-20	Read chapter 15	2h	2h
	Watch Lecture 7 – Software Design	2h	-
	Watch Lecture 8 – From Software Design to Implementation	2h	-
2019-02-20	Watch live lecture 2 on theme 2	2h	2h
2019-02-21	Expand functionality in game by implementing updated word after guesses and end game scenarios.	8h	6h
2019-02-22	Finish implementing functionality in Hangman to complete a working game.	10h	8h
2019-02-22	Create Class Diagram	2h	2h
Total time	**Iteration 2**	**55h**	**42h**

This updated planning and time log can also be found in the 1DV600 - Hangman Project Plan.

2 Use Case Diagram



3 Use Cases

3.1 Use Case 1 – Start Game

Precondition: none.
Postcondition: The game menu is shown.

Main scenario

1. Starts when the Gamer wants to begin a session of the hangman game.
2. The system presents the main menu with a title, the option to play and quit the game.
3. The Gamer makes the choice to start the game.
4. The system starts the game (see Use Case 2).

Repeat from step 2

Alternative scenarios

3.1 The Gamer makes the choice to quit the game.

1. The system quits the game (see Use Case 3)

4.1. Invalid menu choice

1. The system presents an error message.
2. Go to 2

3.2 Use Case 2 – Set up Game

Precondition: The game menu is shown.
Postcondition: The difficulty menu is shown.

Main scenario

1. Starts when the Gamer makes the choice to start a new game.
2. The system asks for a user name.
3. The Gamer gives a user name.
4. The system present an option menu with three different difficulties of words.
5. The Gamer makes a choice of difficulty.
6. The system starts a round of the game.

Alternative scenarios

5.1 The Gamer makes the choice to quit the game.
    1. The system quits the game. (see Use Case 4)

5.2 The Gamer makes the choice to go back to menu.
    1. The system shows the game menu. (see Use Case 1)

6.1 Invalid menu choice.
    1. The system presents an error message.
    2. Go to 4.

3.3 Use Case 3 – Play Game

Precondition: The difficulty menu is shown.
Postcondition: The game is running.

Main scenario

1. Starts when the Gamer makes the choice of difficulty.
2. The system present a word to guess with the number of letters in the word, and the number of guesses available.
3. The Gamer makes a guess of a letter.
4. The system presents an updated version of the word with the letter, the number of letters left to guess and the number of guesses left.

Repeat from step 3.

5. The Gamer guesses the last letter and so the whole word correctly.
6. The system presents the finished word and the number of guesses used, as well as the option to start a new round.
7. The Gamer makes the choice to quit the game.
8. The system quits the game. (see Use Case 3)

Alternative scenarios

3.1 The Gamer makes the choice to quit the game.

1. The system quits the game. (see Use Case 4)

4.1 Incorrect guess as the letter is not present in the current word.

1. The system draws a part of the hangman, and presents the number of guesses left.
2. Go to 3.

5.1 The Gamer has no guesses left.

1. The system presents a fully drawn hangman and the correct word.
2. The Gamer choses to start a new game.
3. The system shows the game menu. (see use Case 1)

7.1 The Gamer choses to start a new round.

1. The system shows the difficulty menu. (see Use Case 2)

3.4 Use Case 4 – Quit Game

Precondition: The game is running.
Postcondition: The game is terminated.

Main scenario

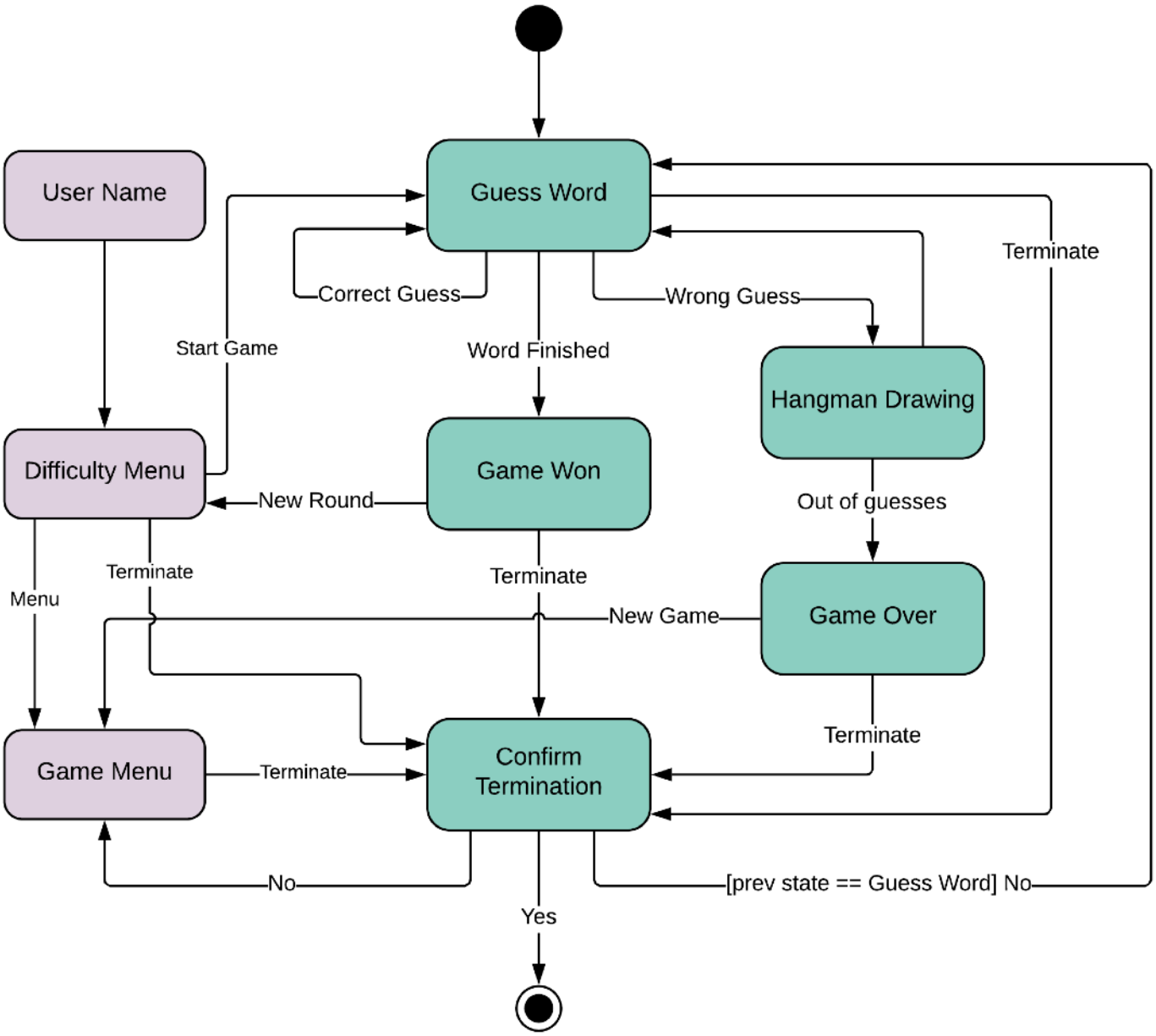
1. Starts when the Gamer wants to quit the game.
2. The system prompts for confirmation.
3. The Gamer confirms.
4. The system terminates.

Alternative scenarios

3.1. The Gamer does not confirm.

1. The system returns to its previous state.

4 Play Game State Machine



5 Class Diagram