|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | HangMan Flowchart  Program Design  DT228-1  Maximilian Adrian Mihoc  Student Number : C12728559  E-mail: maxxxx\_adrian@yahoo.com   |  |  | | --- | --- | | *Date : 2nd Nov 2012* |  | | *Last Lab* |  | |  |  | | *Version:* | *1* | | *Status:* | *Draft / Release* | |  |  | |  |  | |  |  | |

Document Control

|  |  |  |  |
| --- | --- | --- | --- |
| Version History | | | |
| **Date** | **Version** | **Status** | **Comments** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

|  |
| --- |
| Changes since last version |
|  |

|  |
| --- |
| Known Omissions |
|  |

Table of Contents

[1 The Assignment 4](#_Toc338615277)

[1.1 Overview 4](#_Toc338615278)

[1.2 The user interface 4](#_Toc338615279)

[1.3 The due date and feedback timeline 5](#_Toc338615280)

[2 Problem Definition 6](#_Toc338615281)

[2.1 Overview 6](#_Toc338615282)

[3 Design 7](#_Toc338615283)

[3.1 Overview 7](#_Toc338615284)

[3.2 Summary Flowchart 9](#_Toc338615285)

[3.3 Hangman Flowchart 13](#_Toc338615286)

[4 Test Cases 17](#_Toc338615287)

[4.1 Overview 17](#_Toc338615288)

[5 Appendix 19](#_Toc338615289)

[5.1 Appendix 1 19](#_Toc338615290)

# The Assignment

## Overview

Design a game of hangman that randomly chooses a word from a list of 20 words stored in an array of word.

Display the game as per the example screens.

There is no need to show a hang man. Instead each time a letter is picked reshow the lives left.

Display the number of characters in the word.

Ask the user to input a letter. They cannot input the same letter twice. If the letter is not part of the word they lose a life. If it is correct show the letter in its position in the word. Keep asking for letters until the user runs out of lives. At the end of the game ask if they want to play again.

The following words should be part of your 20 word list: litter, beanbag, opening, settlement.

## The user interface

Lives: 6

Word: \_ \_ \_ \_ \_ \_ \_

Letters guessed so far :

Guess a Letter :

Lives: 1

Word: P\_OG\_AM

Letters guessed so far :

A,E,I,O,U,P,G,M,Z,F

Guess a Letter :

Lives: 0

Word: P\_OG\_AM

Sorry you lost

The word was:

PROGRAM

Play again Y/N

## The due date and feedback timeline

* The assignment due date is Friday the 2nd of November.
* The assignment will be submitted in word document based on a template to be provided.
* The flowcharts submitted will be assessed in the labs over a two week period from the 5th November to the 16th November, by the lab assistants. Where the student will present their flowchart and explain it.
* The student must have their assignment with them in the lab in two forms
  + A printed copy that will be presented to the lab assistant
  + A digital copy that they can present on the computer in the lab
* They will then be marked.
* A solution flowchart will be provided once all marking is complete.
* Lab work for other students will be provided during the assessment process.
* If you are not at the lab for assessment your mark will be zero.

# Problem Definition

## Overview

For this problem I will create 4 arrays and some variables which will help me to resolve this it.

I need one array for my 20 words that I have to initialise first, one array will contain the random word that the program will chose, one array will contain the correct letters that the player will enter and the last one will contain all letters which were enter by the player.

When the player enters zero the game is exited and every time when he enters another character instead of a letter he will be informed that they have made an invalid entry and is asked to renter a character and this time they will not lose any life.

If the player guess a letter, they will see the place of that letter in the word and they will be asked for another letter, when the word will be finish they will be congratulated and asked if they want to play again.

If the player does not guess the letter within 5 attempts then they are told that they have lost and they are asked if they wish to play again.

# Design

## Overview

*The design considerations or principles behind the design e.g. all inputs have error checking*

All input by the user will be checked to ensure it is of the correct type (number, text, etc.) if an invalid input is received the user will be informed and asked to try again

The program should only terminate when the user indicates that they wish to terminate the program

## User interface design

The HangMan game

Lives 5

The letters guess so far: A

INVALID IMPUT

Your word is: \_ \_ \_ \_ \_ \_

MAKE YOUR GUESS

Please enter a letter or 0 to exit.

The HangMan game

Lives 6

The letters guess so far:

Make your guess

Please enter a letter or 0 to exit.

The HangMan game

Lives 5

The letters guess so far: A

SORRY WRONG LETTER

Your word is: \_ \_ \_ \_ \_ \_

MAKE YOUR GUESS

Please enter a letter or 0 to exit.

The HangMan game

Lives 4

The letters guess so far:A,L,T,B

SORRY, WRONG LETTER

Your word is: L \_ T T \_ \_

Please enter a letter or 0 to exit.

The HangMan game

Lives 5

The letters guess so far: A , L, T

WELL DONE, YOU JUST GUESS A LETTER

Your word is: L \_ T T \_ \_

Please enter a letter or 0 to exit.

The HangMan game

Lives 5

The letters guess so far: A, L

WELL DONE, YOU JUST GUESS A LETTER

Your word is: L \_ \_ \_ \_ \_

Make your guess

Please enter a letter or 0 to exit.

The HangMan game

Lives 3

The letters guess so far:A,L,T,B,I,R

WELL DONE, YOU JUST GUESS A LETTER

Your word is: L I T T \_ R

Please enter a letter or 0 to exit.

The HangMan game

Lives 3

The letters guess so far:A,L,T,B,I

Your word is: L I T T \_ \_

WELL DONE, YOU JUST GUESS A LETTER

Please enter a letter or 0 to exit.

The HangMan game

Lives 3

The letters guess so far:A,L,T,B,X

SORRY, WRONG LETTER

Your word is: L \_ T T \_ \_

Do you want to play again? (Y/n)

The HangMan game

Lives 2

The letters guess so far:A,L,T,B,X,V,K

SORRY, WRONG LETTER

Your word is: L \_ T T \_ \_

Do you want to play again? (Y/n)

The HangMan game

Lives 0

The letters guess so far:A,L,T,B,X,V,K,S,Q

SORRY, YOU LOOSE

The word was: LITTER

Do you want to play again? (Y/n)

The HangMan game

Lives 2

The letters guess so far:A,L,T,B,X,V

SORRY, WRONG LETTER

Your word is: L \_ T T \_ \_

Do you want to play again? (Y/n)

The HangMan game

Lives 3

The letters guess so far:A,L,T,B,I,R,E

WELL DONE, YOU WIN

Your word is: L I T T E R

Do you want to play again? (Y/N)

The HangMan game

Lives 1

The letters guess so far:A,L,T,B,X,V,K,S

SORRY, WRONG LETTER

Your word is: L \_ T T \_ \_

Do you want to play again? (Y/n)

## Summary Flowchart



## Invalid input Handling





## Getting very squished hard to read?

## Initializing words for game

## Hangman Flowchart



**3.7.1 Version without asking to play again**



**3.7.2 Good version but not the best**

**3.7.3 The best version**



## Big version of flowchart





# Test Cases

## Overview

|  |  |  |  |
| --- | --- | --- | --- |
| **Ref** | **Description** | **Test case type \*** | **Expected Result** |
| TC-0010 | When the program starts enter zero | simple | Exit Screen appears saying bye – thanks for playing |
| TC-0020 | Enter the number 5 | simple | Invalid entry screen should appear and the player should be brought back to the main ask for entry a letter or zero to exit screen |
| TC-0030 | Enter the character # | simple | Invalid entry screen should appear and the player should be brought back to the main ask for a letter or zero to exit screen |
| TC-0040 | Enter A | Edge | The good job you find a letter from the word or enter lives – 1 screen with request to enter another letter appears |
| TC-0050 | Enter Z | Edge | The good job you find a letter from the word or enter lives – 1 screen with request to enter another letter appears |
| TC-0060 | After entering the letter A on next request for input enter zero | normal | Exit Screen appears saying bye – thanks for playing |
| TC-0070 | Guess letters until run out of lives  Choose N to replay | normal | See “you lost “ screen.  Exit Screen appears saying bye – thanks for playing |
| TC-0080 | Guess letters until run out of lives  Choose Y to replay  Retry TC-0010 to TC-0060 again where the game is being played following a Y to the replay game question | normal | See “you lost” screen.  Main Screen appears  Should play as per expected results in each case. Looking to see if a variable has not been initialised correctly on the second pass |
| TC-0090 | Guess the letters until win  Choose N to replay | normal | See “you win” screen  Exit Screen appears saying bye – thanks for playing |
| TC-0100 | Guess the letters until win  Choose Y to replay  Retry TC-0010 to TC-0060 again where the game is being played following a Y to the replay game question | normal | See “you win” screen  Main Screen appears  Should play as per expected results in each case. Looking to see if a variable has not been initialised correctly on the second pass |
| TC-0110 | Ensure all letters from A to Z can be entered | normal | Game allows defined letters to be entered |
| TC-0120 | Let say that the random word is litter  If you will guess the all letters  If you enter 6 wrong letter  If you enter another character instead of letter, you will be ask to enter a letter and you will not loose live.  See the user interface design | complex | See ”good job, you win”  See “sorry, you lose” |
| TC-0130 | If the random word would be beanbag or opening or settlement, the program won’t have problems if a letter appears twice, (see user interface design).  If the player guess all letters corect  If you enter 6 wrong letter | complex | See ”good job, you win”  See “sorry, you lose”  And the player would be asked to play again. |

\* Simple, Normal, Complex, edge condition

*You must have tests for the following words : litter, beanbag, opening, settlement – what are you testing in relation to these words?*

# Appendix

## Appendix 1