**Course Title: Computer Programming**

**Complex Engineering Problem**

**FE Batch 2022, Fall Semester 2022**

**Grading Rubric**

**TERM PROJECT Group**

**Members:**

| Student No. | Name | Roll No. |
|---|---|---|
| S1 | | |
| S2 | | |
| S3 | | |

| **CRITERIA AND SCALES** | | | | **Marks Obtained** | | |
|---|---|---|---|---|---|---|
| | | | | **S1** | **S2** | **S3** |
| Criterion 1: Does the application meet the desired specifications and produce the desired outputs? (CPA-1, CPA-3) **[8 marks]** | | | | | | |
| 1 | 2 | 3 | 4 | | | |
| The application does not meet the desired specifications and is producing incorrect outputs. | The application partially meets the desired specifications and is producing incorrect or partially correct outputs. | The application meets the desired specifications but is producing incorrect or partially correct outputs. | The application meets all the desired specifications and is producing correct outputs. | | | |
| Criterion 2: How well is the code organization? **[2 marks]** | | | | | | |
| 1 | 2 | 3 | 4 | | | |
| The code is poorly organized and very difficult to read. | The code is readable only to someone who knows what it is supposed to be doing. | Some part of the code is well organized, while some part is difficult to follow. | The code is well organized and very easy to follow. | | | |
| Criterion 3: How friendly is the application interface? (CPA-1, CPA-3) **[2 marks]** | | | | | | |
| 1 | 2 | 3 | 4 | | | |
| The application interface is difficult to understand and use. | The application interface is easy to understand and but not that comfortable to use. | The application interface is very easy to understand and use. | The application interface is very interesting/ innovative and easy to understand and use. | | | |
| Criterion 4: How does the student performed individually and as a team member? (CPA-2, CPA-3) **[4 marks]** | | | | | | |
| 1 | 2 | 3 | 4 | | | |
| The student did not work on the assigned task. | The student worked on the assigned task, and accomplished goals partially. | The student worked on the assigned task, and accomplished goals satisfactorily. | The student worked on the assigned task, and accomplished goals beyond expectations. | | | |
| Criterion 5: Does the report adhere to the given format and requirements? **[4 marks]** | | | | | | |
| 1 | 2 | 3 | 4 | | | |
| The report does not contain the required information and is formatted poorly. | The report contains the required information only partially but is formatted well. | The report contains all the required information but is formatted poorly. | The report contains all the required information and completely adheres to the given format. | | | |
| | | | Total Marks: | | | |

_____

# REPORT

## Term Project Title:

## Hangman Game

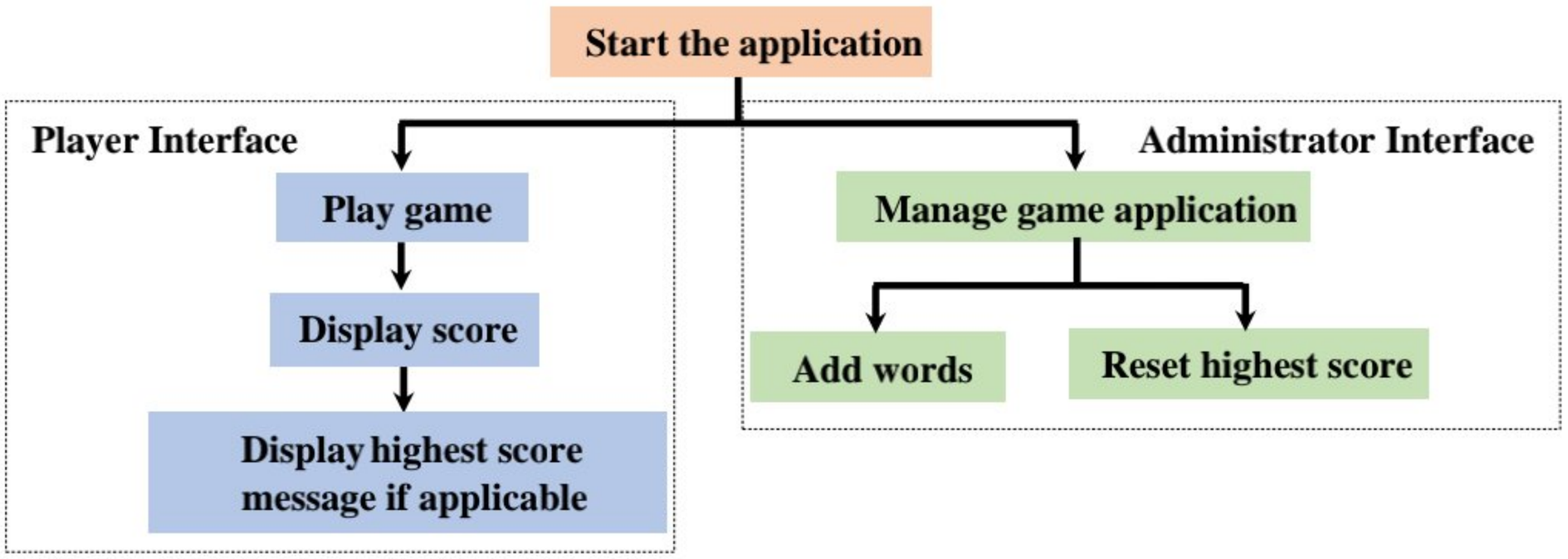
## Problem Description:

This application will allow the user to play the classic word game *Hangman* against the computer.
This application maintains two interfaces: one for the player and one for the administrator, as shown in the following flow diagram. For the game, the computer picks a word, randomly form a list of available words, and the player tries to guess letters in the word.
The player is given a certain number of guesses at the beginning.
The game is interactive; as the player inputs his/her guess, the computer either:

- reveals the letter if it exists in the secret word
- Penalize the user and updates the number of guesses remaining.

The game ends when either the user guesses the secret word, or the user runs out of guesses.

The following flow diagram depicts the overall working of the application:




## Game Rules and Interface:

1. First of all when user opens the application he will have 3 option or choices to choose from:
   i.

```
**********WELCOME TO HANGMAN**********
 1. Enter 'P' for play
 2. Enter 'A' for Administrator
 3. Enter 'E'for Exit
**************************************
Select your choice: _
```

2. PRESS A FOR GO INTO ADMINISTRATOR INTERFACE
3. PRESS P FOR GO INTO PLAY INTERFACE
4. PRESS E FOR TO EXIT FROM GAME

5. When the user selects play option so the game will start.

```
**********WELCOME TO HANGMAN**********
 1. Enter 'P' for play
 2. Enter 'A' for Administrator
 3. Enter 'E'for Exit
****************************************
Select your choice: p
ENTER YOUR NAME: Tooba
**************
WELCOME Tooba
**************
```

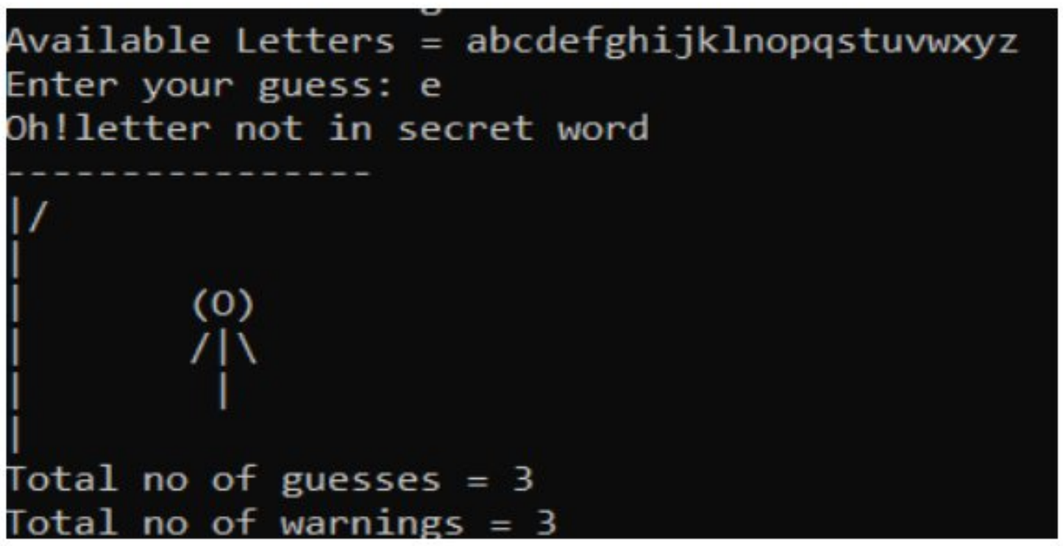
6. The computer must select a word called secret word at random from the list of available words. A file called word.txt is provided with this document that contains 55900 words in lowercase letters. This file must be loaded at the start of the program.
7. Initially user has 6 guesses
8. And 3 warnings.
9. At the start of the game, we let the player know how many letters the secret word contains and how many guesses and warnings are remaining.
10. The computer keeps track of all the letters the player has not guessed so far and before each turn shows the player the remaining letters.
11. We will ask the player to supply one guess at a time. Immediately after each guess, the player should be told whether the letter is in the secret word. Also, display to the player the secret word, with guessed letters displayed and un-guessed letters replaced with an underscore and space (_).
12. The game accepts both upper and lower case letters as valid guesses. If the player inputs anything other than alphabets, prompt the user to enter valid input.
13. If the player inputs a letter that hasn't been guessed before and the letter is in the secret word, the player does not lose any guesses or warnings.

```
I am thinking of word which is of 7 letters
secret word manahil
Total no of guesses = 6
Total no of warnings = 3
Available Letters = abcdefghijklmnopqrstuvwxyz
Enter your guess: M
Good you find the correct letter
m______
Total no of guesses = 6
Total no of warnings = 3
Available Letters = abcdefghijklnopqrstuvwxyz
Enter your guess:
```

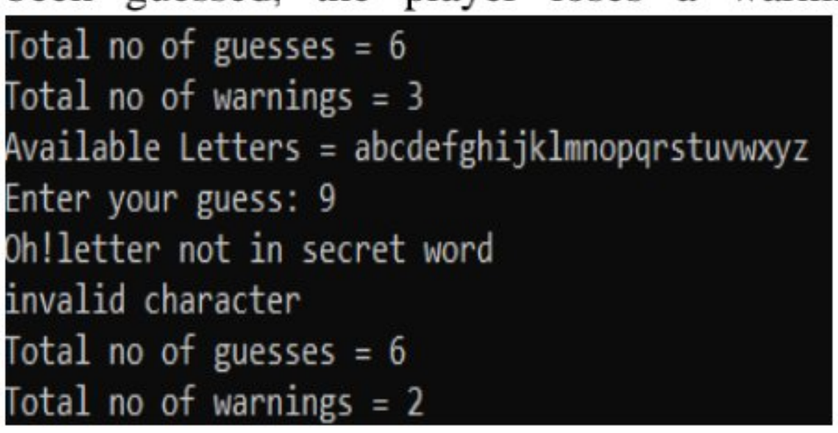
14. If the player inputs a consonant that hasn't been guessed and the consonant is not in the secret word, the user loses one guess if it's a consonant.

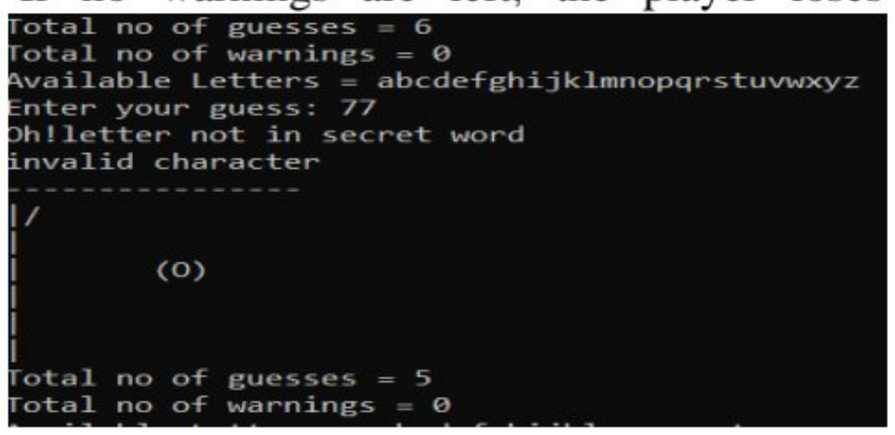
```
Enter your guess: R
Oh!letter not in secret word
consonant letter
not repeated
----------------
|/
|
|        (O)
|
|
|
Total no of guesses = 5
Total no of warnings = 3
Available Letters = abcdefghijklnopqstuvwxyz
```

15. If the vowel hasn't been guessed and the vowel is not in the secret word, the player loses two guesses.

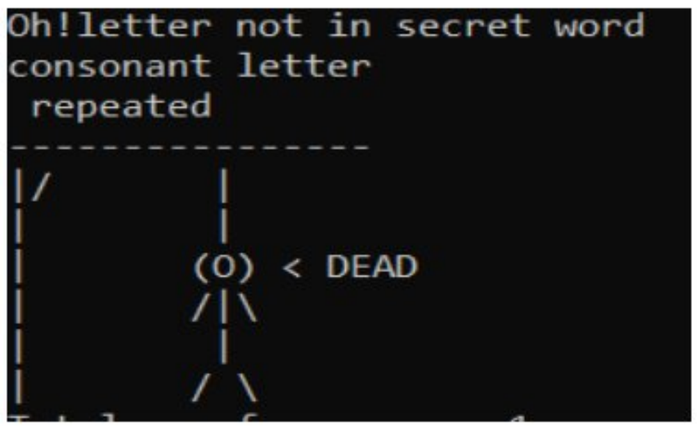



16. Each time the player inputs anything besides an alphabet (symbols, numbers) or a letter that has already been guessed, the player loses a warning. If no warnings are left, the player loses a guess.



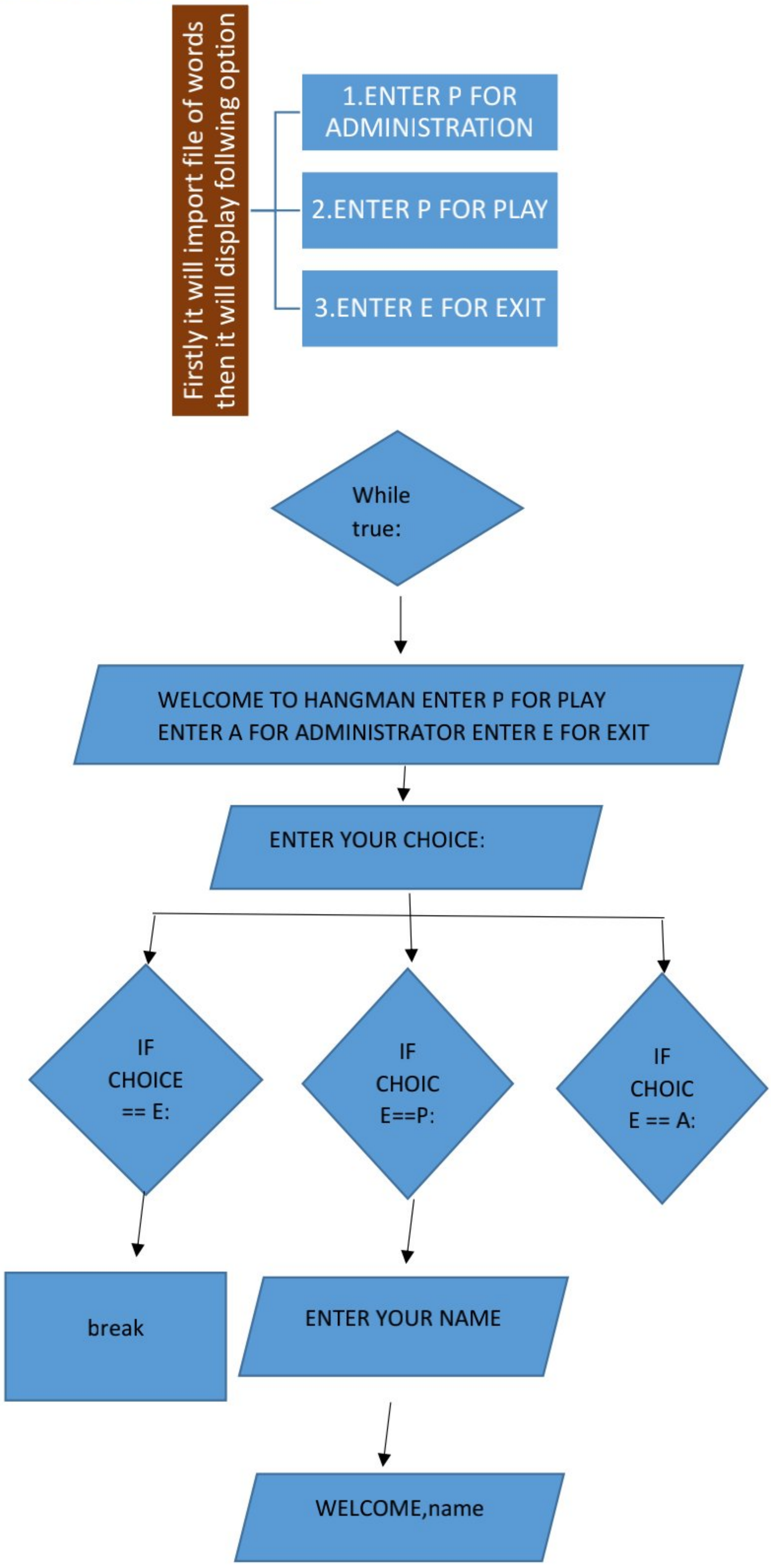



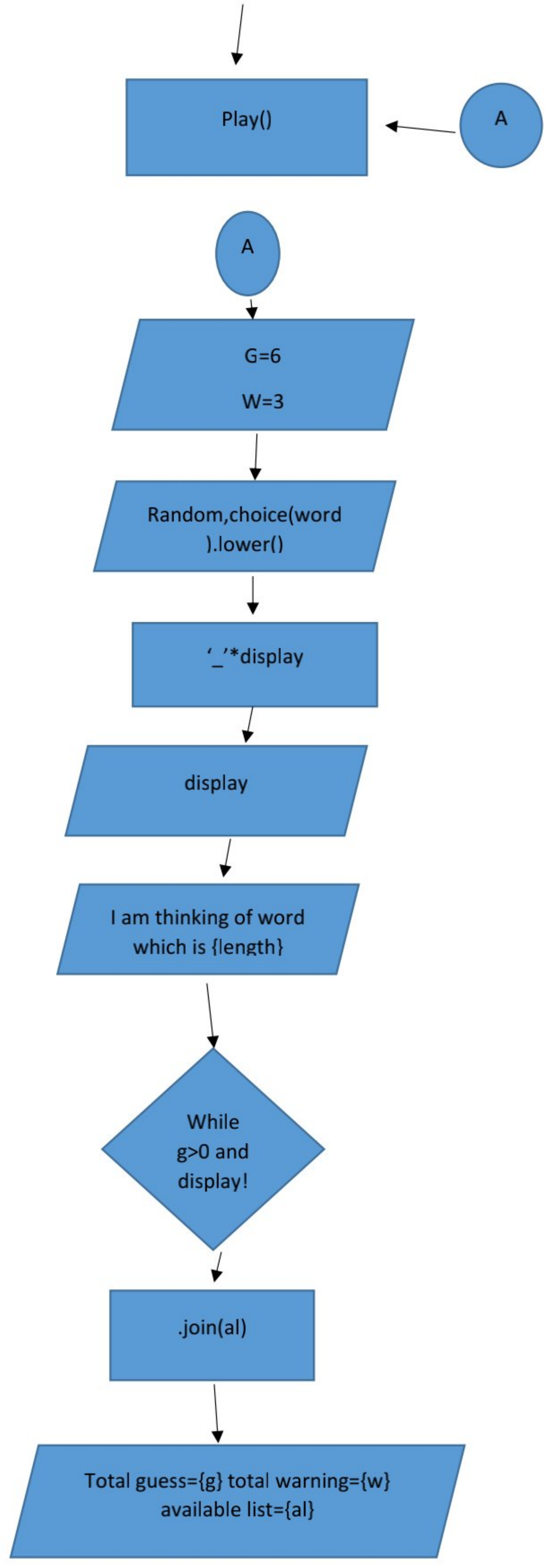

17. The game should end when the player constructs the full word or runs out of guesses.
18. Also we introduce the hangman in the game that works as the no if guesses become less the hangman will go about to die.

i. 


19. If the player runs out of guesses before completing the word, tell them that the game has been lost and reveal the word. The game ends.
20. If the player wins, print a congratulatory message and tell the player the score calculated as follows: Total score = number of guesses remaining x number unique letters in the secret word
21. The game must also keep track of the highest score along with the name of the player and displays a special message if the player achieves a new high score.
22. When the user enters A so he will go into administrator interface
23. Firstly it will ask the password and user id or name if its correct so he will have the right to control the game
24. an administrator interface which allow the administrator to:
25. add new words to the word file,
26. Reset the highest score and name of the player.
27. If the user enter E for exit then the screen will shut off
28. We have set the highest 3 scores along with name.

# FLOW CHART OF HANGMAN




Play()
A
A
G=6
W=3
Random,choice(word
).lower()
'_'*display
display
I am thinking of word
which is {length}
While
g>0 and
display!
.join(al)
Total guess={g} total warning={w}
available list={al}

Elif wchoice in secret and not in al

If word choice in secret and in al:

ELSE

B

W>o:

w-=1

g-=1

AL.remove(wchoice)

Oh letter not in secret

c

Good guess

If secret[i]==wchoice:

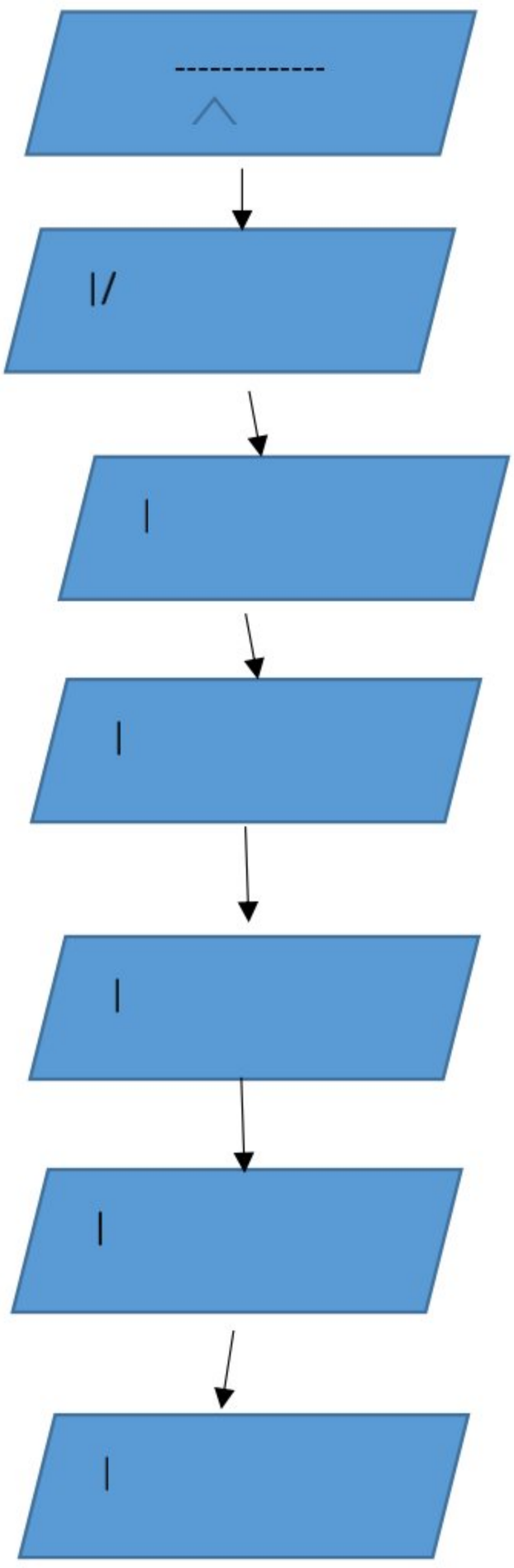
Display=display[:i]+secr et[i]+display[i+1: }

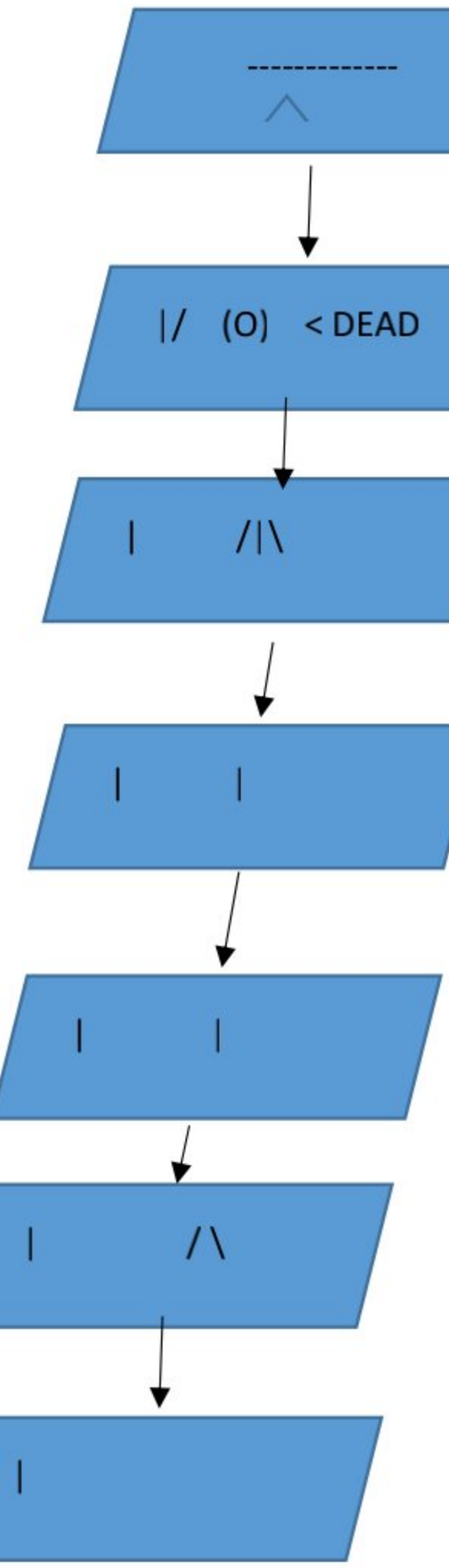
display

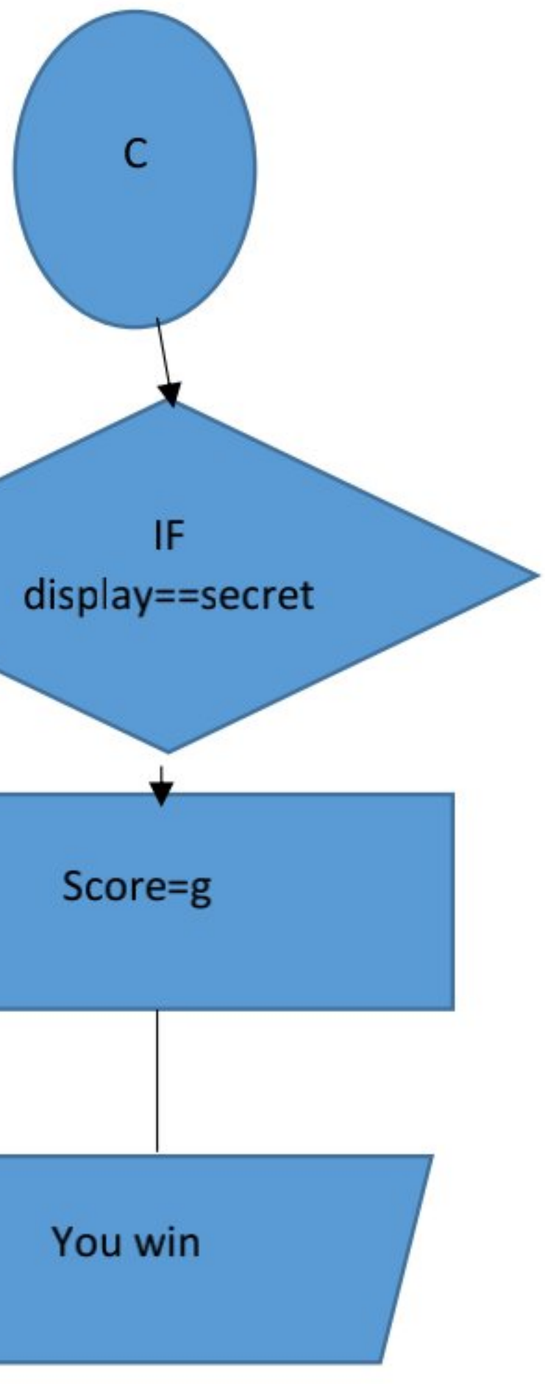
B

G= =0

G= =6






C
IF
display==secret
Score=g
You win

1.By typing A user enters into administrator block
2.It asks user name and password
3.if user enters both things correct, it displays three choices
- to reset high score
- to add word in words.txt file
- exit from administrator block

4.if user write 'add', it then asks word to write into file
5.if user write 'reset', he/she can reset highest score
6.if user write 'exit' , he/she reach to main menu
7.if user enters wrong password or name, it asks either he/she wants to enter password and name again or wants to exit from administrator block and reach him/her to main menu.

## ANY NEW THING LEARNT IN PYTHON WHILE WORKING ON PROJECT

### 1. ROLL NO : CS-22020 Tooba Aftab

Yes I learned some new method like join () method Python String join() Method: The join() method takes all items in an iterable and joins them into one string. A string must be specified as the separator. And I also learned a continue function for which it is mandatory to use while in the beginning.

### 2. ROLL NO : CS-22011 Manahil Ejaz

Through this assignment I have learned how to write long codes, to organize them, to integrate if else conditions and to make integrated loops. To organize the code was the most difficult part of the code for me.

## INDIVIDUAL CONTRIBUTION OF EACH GROUP MEMBER ON GROUP:

1. **ROLL NO CS-22020**: **Tooba Aftab** I made the main game area and its logic which starts from "if choice== 'p' " Where the user enter his/her guesses till the hangman ,and I also made Flow chart and Report.

2. **ROLL NO CS-22011:** **Manahil Ejaz** I made the main administration area which starts from " if choice =='A' "and also I made the starting of code where the file is imported and exit code.high score formula and high score logic.

## Test runs:

```
**********WELCOME TO HANGMAN**
**********
1. Enter 'P' for play
2. Enter 'A' for Administrator
3. Enter 'E' for Exit
**********
**********
Select your choice: p
ENTER YOUR NAME:mano
**********
********** WELCOME mano **********
**********
```

Available Letters = abcdefghijklmnopqrstuvwxyz
Enter your guess: o
Good you find the correct letter
____o___
---------------
|/
|
|      (O)
|
|
|
Total no of guesses = 5
Total no of warnings = 3

Enter your guess: k
Oh!letter not in secret word

_____
Oh! you guess a wrong consonant letter
---------------
|/
|
|      (O)
|
|
|
Total no of guesses = 5