# DEPARTMENT OF COMPUTER & INFORMATION SYSTEMS ENGINEERING BACHELORS IN COMPUTER SYSTEMS ENGINEERING

**Course Code: CS-115**

**Course Title: Computer Programming Complex Engineering Activity**

**FE Batch 2019, Fall Semester 2018**

## Grading Rubric

**Group Members:**

|  |  |  |
| --- | --- | --- |
| **Student No.** | **Name** | **Roll No.** |
| S1 | Hasnain Ali | CS-045 |
| S2 | Owais Ahmed | CS-043 |
| S3 | Muhammad Fasihullah | CS-042 |

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| --- | --- | --- | --- | --- | --- |
| **CRITERIA AND SCALES** | | | **Marks Obtained** | | |
| **S1** | **S2** | **S3** |
| Criterion 1: Does the application meet the desired specifications and produce the desired  outputs? | | |  |  |  |
| 0 – 1 | 2 - 3 | 4 – 5 |
| The application is  producing incorrect outputs. | The program produces correct  outputs but does not display them correctly. | The program works and  meets all of the specifications. |
| Criterion 2: How well is the code organization? | | |  |  |  |
| 0 – 1 | 2 - 3 | 4 – 5 |
| The code is poorly  organized and very difficult to read. | The code is readable only by  someone who knows what it is supposed to be doing. | The code is well organized  and very easy to follow |
| Criterion 3: How friendly is the application interface? | | |  |  |  |
| 0 – 1 | 2 - 3 | 4 – 5 |
| 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. |
| Criterion 3: How did the student answer questions relevant to the task? | | |  |  |  |
| 0 – 2 | 3 - 7 | 8 – 10 |
| The student answered few  questions relevant to the solution. | The student answered most of the questions relevant to the solution. | The student answered all  the questions relevant to the solution. |
| Criterion 4: Does the report adhere to the given format? | | |  |  |  |
| 0 – 1 | 2 - 3 | 4 – 5 |
| The report does not contain  the required information. OR  The organization of the report is poor. | The report contains the required  information only partially. OR  The organization of the report  follows the given format only partially. | The report contains all the  required information and completely adheres to the given format. |
| Total Marks: | | |  |  |  |

Teacher’s Signature:

**REPORT**

***Q1: What are the distinguishing features of your project?***

Our project uses very basic and common functions and methods making the code readable and easy to understand. As it was a group project, we avoided complex additions to the code so that everyone could play his role in developing the code. We paid close attention to the efficiency of our program and tried to make it fast without consuming much time. We made an organized algorithm which doesn’t contain any extra useless feature thus protecting the main purpose of the project. We have just added an option in order to view the rules of the game which will be quite helpful for the user playing the game. All the other features of the project are in order as required.

***Q2. What was the most challenging part for you while working on the project?***

The most challenging part was to put the guessed letter on all the indexes on which it appears in secret word. When a user guessed a letter, which appeared more than one time in the secret word, we simply used the index function but the index operator only gave the first occurrence of the letter in the secret word. In order to find out the indexes of further occurrences of that letter in the word. we gave second argument to the index method which takes in the starting index from which it starts its search for the particular term. I used a for loop and gave my code the required functionality. Except this there were other challenges like finding out the unique letters in the word, hiding the quotation marks of string elements in a list, adding a no. of conditions on user’s input, distinguishing any already guessed letters.

***Q3. Did you learn anything new in Python while working on this project?***

We learned many new things while working on this project. The first one was the use of asterisk before the list in print function which will not display the leading and trailing quotation marks in string. The second one was that there is another parameter of index method which helps in complex searching of elements. Another one was the use of set function; set is particularly a collection which cannot contain same elements within it. We used it to find out the unique letters in secret word. Except these things, all the things implemented in the algorithm are not new and they were brilliantly taught in class as well as in lab.

**CODE**

from wordgenerator import wordgenerator

from tablegenerator import tablegenerator

from rules import rules

from replace import replace

from check import check

from vowelcheck import vowelcheck

from remover import remover

from scorecalc import scorecalc

SecretWord,nwords = wordgenerator()

table,length = tablegenerator(SecretWord)

print(f"Loading word list from file...\n{nwords} words loaded.\nWelcome to the game Hangman!")

i = input("Do you wish to know the rules of the game? Press 'Y' for yes and 'N' for no.").upper()

if i == "Y":

rules()

input("Press enter when ready...")

print("Let's Play!\nI am thinking of a word that is {} letters long.".format(length))

guesses = 6

warnings = 3

aval = ["a","b","c","d","e","f","g","h","i","j","k","l","m","n","o","p","q","r","s","t","u","v","w","x","y","z"]

print("You have {} warnings left".format(warnings))

while True:

print("-------------")

print("You have {} guesses left".format(guesses))

print("Available letters: ",\*aval)

guess = input("Please guess a letter: ").lower()

if guess in SecretWord and guess in aval:

replace(SecretWord,guess,table)

print("Good Guess: ",\*table)

remover(guess,aval)

elif guess not in aval and check(guess):

warnings -= 1

print("Oops! You've already guessed that letter.")

print("You have",warnings,"warnings left: ",\*table)

elif guess not in SecretWord and check(guess):

print("Oops! That letter is not in my word: ",\*table)

remover(guess,aval)

if vowelcheck(guess):

guesses -= 2

else: guesses -= 1

else:

print("Please enter valid character")

warnings -= 1

if warnings>0 :

print("You have",warnings,"warnings left: ",\*table)

if warnings <= 0:

print("You have no warnings left so you lose one guess: ",\*table)

guesses -= 1

warnings = 3

if guesses <= 0:

print("-----------\nSorry, you ran out of guesses.")

print("The word was",SecretWord)

break

if "\_" not in table:

print("------------\nCongratulations, you won!")

score = scorecalc(guesses,table)

print("Your total score for this game is:",score)

break

**SAMPLE TESTS**

**Test Run 1:**

A Loading word list from file...

55900 words loaded.

Welcome to the game Hangman!

Do you wish to know the rules of the game? Press 'Y' for yes and 'N' for no.y

-----------------------------------------------------------------------------------------------------------------------

I will pick a word, randomly form a list of available words, and you will try to guess letters in the word.

You have six guesses and three warnings.

If you will enter a consonant that has not been guessed and the consonant is not in the secret word, you will lose one guess.

If the vowel has not t been guessed and the vowel is not in the secret word, you will lose two guesses.

Each time you will enter anything besides an alphabet (symbols, numbers) or a letter that has already been guessed, you will lose a warning.

If no warnings are left, you will lose a guess.

The game will end when you will construct the full word or run out of guesses.

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Press enter when ready...

Let's Play!

I am thinking of a word that is 8 letters long.

You have 3 warnings left

-------------

You have 6 guesses left

Available letters: a b c d e f g h i j k l m n o p q r s t u v w x y z

Please guess a letter: a

Oops! That letter is not in my word: \_ \_ \_ \_ \_ \_ \_ \_

-------------

You have 4 guesses left

Available letters: b c d e f g h i j k l m n o p q r s t u v w x y z

Please guess a letter: h

Good Guess: \_ \_ \_ \_ \_ \_ \_ h

-------------

You have 4 guesses left

Available letters: b c d e f g i j k l m n o p q r s t u v w x y z

Please guess a letter: c

Good Guess: \_ \_ c \_ \_ \_ \_ h

-------------

You have 4 guesses left

Available letters: b d e f g i j k l m n o p q r s t u v w x y z

Please guess a letter: 5

Please enter valid character

You have 2 warnings left: \_ \_ c \_ \_ \_ \_ h

-------------

You have 4 guesses left

Available letters: b d e f g i j k l m n o p q r s t u v w x y z

Please guess a letter: r

Good Guess: r \_ c \_ \_ \_ \_ h

-------------

You have 4 guesses left

Available letters: b d e f g i j k l m n o p q s t u v w x y z

Please guess a letter: i

Good Guess: r \_ c \_ \_ i \_ h

-------------

You have 4 guesses left

Available letters: b d e f g j k l m n o p q s t u v w x y z

Please guess a letter: f

Good Guess: r \_ c \_ f i \_ h

-------------

You have 4 guesses left

Available letters: b d e g j k l m n o p q s t u v w x y z

Please guess a letter: r

Oops! You've already guessed that letter.

You have 1 warnings left: r \_ c \_ f i \_ h

-------------

You have 4 guesses left

Available letters: b d e g j k l m n o p q s t u v w x y z

Please guess a letter: e

Oops! That letter is not in my word: r \_ c \_ f i \_ h

-------------

You have 2 guesses left

Available letters: b d g j k l m n o p q s t u v w x y z

Please guess a letter: s

Good Guess: r \_ c \_ f i s h

-------------

You have 2 guesses left

Available letters: b d g j k l m n o p q t u v w x y z

Please guess a letter: k

Good Guess: r \_ c k f i s h

-------------

You have 2 guesses left

Available letters: b d g j l m n o p q t u v w x y z

Please guess a letter: o

Good Guess: r o c k f i s h

------------

Congratulations, you won!

Your total score for this game is: 16

**Test Run 2:**

Loading word list from file...

55900 words loaded.

Welcome to the game Hangman!

Do you wish to know the rules of the game? Press 'Y' for yes and 'N' for no.n

Press enter when ready...

Let's Play!

I am thinking of a word that is 10 letters long.

You have 3 warnings left

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You have 6 guesses left

Available letters: a b c d e f g h i j k l m n o p q r s t u v w x y z

Please guess a letter: a

Good Guess: \_ \_ a \_ \_ a \_ \_ \_ \_

-------------

You have 6 guesses left

Available letters: b c d e f g h i j k l m n o p q r s t u v w x y z

Please guess a letter: l

Oops! That letter is not in my word: \_ \_ a \_ \_ a \_ \_ \_ \_

-------------

You have 5 guesses left

Available letters: b c d e f g h i j k m n o p q r s t u v w x y z

Please guess a letter: r

Oops! That letter is not in my word: \_ \_ a \_ \_ a \_ \_ \_ \_

-------------

You have 4 guesses left

Available letters: b c d e f g h i j k m n o p q s t u v w x y z

Please guess a letter: c

Good Guess: c \_ a \_ \_ a \_ \_ \_ \_

-------------

You have 4 guesses left

Available letters: b d e f g h i j k m n o p q s t u v w x y z

Please guess a letter: p

Good Guess: c \_ a \_ p a \_ \_ \_ \_

-------------

You have 4 guesses left

Available letters: b d e f g h i j k m n o q s t u v w x y z

Please guess a letter: s

Good Guess: c \_ a \_ p a \_ \_ \_ s

-------------

You have 4 guesses left

Available letters: b d e f g h i j k m n o q t u v w x y z

Please guess a letter: l

Oops! You've already guessed that letter.

You have 2 warnings left: c \_ a \_ p a \_ \_ \_ s

-------------

You have 4 guesses left

Available letters: b d e f g h i j k m n o q t u v w x y z

Please guess a letter: h

Good Guess: c h a \_ p a \_ \_ \_ s

-------------

You have 4 guesses left

Available letters: b d e f g i j k m n o q t u v w x y z

Please guess a letter: g

Good Guess: c h a \_ p a g \_ \_ s

-------------

You have 4 guesses left

Available letters: b d e f i j k m n o q t u v w x y z

Please guess a letter: e

Good Guess: c h a \_ p a g \_ e s

-------------

You have 4 guesses left

Available letters: b d f i j k m n o q t u v w x y z

Please guess a letter: 4

Please enter valid character

You have 1 warnings left: c h a \_ p a g \_ e s

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You have 4 guesses left

Available letters: b d f i j k m n o q t u v w x y z

Please guess a letter: e

Oops! You've already guessed that letter.

You have 0 warnings left: c h a \_ p a g \_ e s

You have no warnings left so you lose one guess: c h a \_ p a g \_ e s

-------------

You have 3 guesses left

Available letters: b d f i j k m n o q t u v w x y z

Please guess a letter: n

Good Guess: c h a \_ p a g n e s

-------------

You have 3 guesses left

Available letters: b d f i j k m o q t u v w x y z

Please guess a letter: m

Good Guess: c h a m p a g n e s

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Congratulations, you won!

Your total score for this game is: 27

**Test Run 3:**

Loading word list from file...

55900 words loaded.

Welcome to the game Hangman!

Do you wish to know the rules of the game? Press 'Y' for yes and 'N' for no.n

Press enter when ready...

Let's Play!

I am thinking of a word that is 8 letters long.

You have 3 warnings left

-------------

You have 6 guesses left

Available letters: a b c d e f g h i j k l m n o p q r s t u v w x y z

Please guess a letter: a

Good Guess: \_ \_ \_ \_ \_ a \_ \_

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You have 6 guesses left

Available letters: b c d e f g h i j k l m n o p q r s t u v w x y z

Please guess a letter: e

Oops! That letter is not in my word: \_ \_ \_ \_ \_ a \_ \_

-------------

You have 4 guesses left

Available letters: b c d f g h i j k l m n o p q r s t u v w x y z

Please guess a letter: w

Good Guess: w \_ \_ \_ \_ a \_ \_

-------------

You have 4 guesses left

Available letters: b c d f g h i j k l m n o p q r s t u v x y z

Please guess a letter: i

Oops! That letter is not in my word: w \_ \_ \_ \_ a \_ \_

-------------

You have 2 guesses left

Available letters: b c d f g h j k l m n o p q r s t u v x y z

Please guess a letter: +

Please enter valid character

You have 2 warnings left: w \_ \_ \_ \_ a \_ \_

-------------

You have 2 guesses left

Available letters: b c d f g h j k l m n o p q r s t u v x y z

Please guess a letter: d

Good Guess: w \_ \_ \_ \_ a \_ d

-------------

You have 2 guesses left

Available letters: b c f g h j k l m n o p q r s t u v x y z

Please guess a letter: q

Oops! That letter is not in my word: w \_ \_ \_ \_ a \_ d

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You have 1 guesses left

Available letters: b c f g h j k l m n o p r s t u v x y z

Please guess a letter: r

Good Guess: w \_ r \_ \_ a \_ d

-------------

You have 1 guesses left

Available letters: b c f g h j k l m n o p s t u v x y z

Please guess a letter: h

Good Guess: w \_ r \_ h a \_ d

-------------

You have 1 guesses left

Available letters: b c f g j k l m n o p s t u v x y z

Please guess a letter: q

Oops! You've already guessed that letter.

You have 1 warnings left: w \_ r \_ h a \_ d

-------------

You have 1 guesses left

Available letters: b c f g j k l m n o p s t u v x y z

Please guess a letter: n

Good Guess: w \_ r \_ h a n d

-------------

You have 1 guesses left

Available letters: b c f g j k l m o p s t u v x y z

Please guess a letter: r

Oops! You've already guessed that letter.

You have 0 warnings left: w \_ r \_ h a n d

You have no warnings left so you lose one guess: w \_ r \_ h a n d

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Sorry, you ran out of guesses.

The word was workhand

**Test Run 4:**

Loading word list from file...

55900 words loaded.

Welcome to the game Hangman!

Do you wish to know the rules of the game? Press 'Y' for yes and 'N' for no.n

Press enter when ready...

Let's Play!

I am thinking of a word that is 9 letters long.

You have 3 warnings left

-------------

You have 6 guesses left

Available letters: a b c d e f g h i j k l m n o p q r s t u v w x y z

Please guess a letter: a

Oops! That letter is not in my word: \_ \_ \_ \_ \_ \_ \_ \_ \_

-------------

You have 4 guesses left

Available letters: b c d e f g h i j k l m n o p q r s t u v w x y z

Please guess a letter: y

Oops! That letter is not in my word: \_ \_ \_ \_ \_ \_ \_ \_ \_

-------------

You have 3 guesses left

Available letters: b c d e f g h i j k l m n o p q r s t u v w x z

Please guess a letter: n

Good Guess: \_ \_ n n \_ \_ \_ n \_

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You have 3 guesses left

Available letters: b c d e f g h i j k l m o p q r s t u v w x z

Please guess a letter: b

Good Guess: b \_ n n \_ \_ \_ n \_

-------------

You have 3 guesses left

Available letters: c d e f g h i j k l m o p q r s t u v w x z

Please guess a letter: o

Good Guess: b o n n \_ \_ \_ n \_

-------------

You have 3 guesses left

Available letters: c d e f g h i j k l m p q r s t u v w x z

Please guess a letter: u

Oops! That letter is not in my word: b o n n \_ \_ \_ n \_

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You have 1 guesses left

Available letters: c d e f g h i j k l m p q r s t v w x z

Please guess a letter: i

Good Guess: b o n n \_ \_ i n \_

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You have 1 guesses left

Available letters: c d e f g h j k l m p q r s t v w x z

Please guess a letter: e

Good Guess: b o n n e \_ i n \_

-------------

You have 1 guesses left

Available letters: c d f g h j k l m p q r s t v w x z

Please guess a letter: r

Oops! That letter is not in my word: b o n n e \_ i n \_

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Sorry, you ran out of guesses.

The word was bonneting