Department of Electrical Engineering Assignment Date: 07/05/2020
Course Details

Course Title: Programming Fundamentals **Module:** 02 **Instructor: Total Marks:** 20

Student Details

Name:Mansoor Jadoon

Student ID: 16637

Q1. (a) Write a Guess the Word program in Python, The user needs to be able to input letter guesses. A limit should also be set on how many guesses they can use. This means you'll need a way to grab a word to use for guessing, this can be grabbed from a pre-made list. You will also need functions to check if the user has actually inputted a single letter, to check if the inputted letter is in the hidden word (and if it is, how many times it appears), to print letters, and a counter variable to limit guesses.

Marks 5 CLO 2

Ans:

```
name = input("What is your name? ")

print("Good Luck ! ", name)
```

```
words = ['rainbow', 'computer', 'science', 'programming',
        'python', 'mathematics', 'player', 'condition',
        'reverse', 'water', 'board', 'geeks']

word = random.choice(words)



print("Guess the characters")

guesses = ''

turns = 12

  while turns > 0:

    failed = 0
.
    for char in word:
```

```
    if char in guesses:
        print(char)

    else:
        print("_")

        failed += 1


if failed == 0:

    print("You Win")

    print("The word is: ", word)

    break

guess = input("guess a character:")

guesses += guess
```

```
if guess not in word:

    turns -= 1

    print("Wrong")

    print("You have", + turns, 'more guesses')



    if turns == 0:

        print("You Loose")
```

Q2. (a) Write a Password Generator program in Python, which generates a random password for the user. Ask the user how long they want their password to be (minimum 8 to 15 characters), how many letters, symbols and numbers they want in their password. Password generated MUST have a mix of upper and lowercase letters, as well as numbers and symbols

Marks 10 CLO 1

```
Password = input("Enter the password under 8 to 15 characters ")

letter = input("Enter the letters you want ")

symbol = input("Enter the symbols you want ")

 number = input("Enter the numbers you want ")

MAX_LEN = 12

DIGITS = ['0', '1', '2', '3', '4', '5', '6', '7', '8', '9']
LOCASE_CHARACTERS = ['a', 'b', 'c', 'd', 'e', 'f', 'g', 'h',
                     'i', 'j', 'k', 'm', 'n', 'o', 'p', 'q',
```

```
                'r', 's', 't', 'u', 'v', 'w', 'x', 'y',
                'z']

UPCASE_CHARACTERS = ['A', 'B', 'C', 'D', 'E', 'F', 'G', 'H',
                'I', 'J', 'K', 'M', 'N', 'O', 'p', 'Q',
                'R', 'S', 'T', 'U', 'V', 'W', 'X', 'Y',
                'Z']

SYMBOLS = ['@', '#', '$', '%', '=', ':', '?', '.', '/', '|', '~', '>',
        '*', '(', ')', '<&# 039;]

COMBINED_LIST = DIGITS + UPCASE_CHARACTERS +
LOCASE_CHARACTERS + SYMBOLS

rand_digit = random.choice(DIGITS)
rand_upper = random.choice(UPCASE_CHARACTERS)

rand_lower = random.choice(LOCASE_CHARACTERS)

rand_symbol = random.choice(SYMBOLS)
```

```
  temp_pass = rand_digit + rand_upper + rand_lower + rand_symbol


for x in range(MAX_LEN - 4):
    temp_pass = temp_pass + random.choice(COMBINED_LIST)


    temp_pass_list = array.array(&# 039;u&# 039;, temp_pass)


    random.shuffle(temp_pass_list)


password = ""


for x in temp_pass_list:


 password = password + x


print(password)
```

Q3. (a) Write a Message Encryption Decryption program in Python, The user will input any text and

your program must encrypt the text by using Base64 or HEX. The text must then be decrypted from the encrypted form to show that the decrypted text is the original form.

Marks 10 CLO 1

Ans:

FOR ENCODE:

```
sample_string = "My Work"
sample_string_bytes = sample_string.encode("ascii")

base64_bytes = base64.b64encode(sample_string_bytes)
base64_string = base64_bytes.decode("ascii")

print(f"Encoded string: {base64_string}")
```

FOR DECODE:

```
base64_string =" R2Vla3NGb3JHZWVrcyBpcyB0aGUgYmVzdA =="

base64_bytes = base64_string.encode("ascii")


sample_string_bytes = base64.b64decode(base64_bytes)

sample_string = sample_string_bytes.decode("ascii")


print(f"Decoded string: {sample_string}")
```

Q#3:

Ans:

FOR ENCODE:

```
sample_string = "My Work"
sample_string_bytes = sample_string.encode("ascii")

base64_bytes = base64.b64encode(sample_string_bytes)
base64_string = base64_bytes.decode("ascii")

print(f"Encoded string: {base64_string}")
```

FOR DECODE:

```
base64_string =" R2Vla3NGb3JHZWVrcyBpcyB0aGUgYmVzdA =="

base64_bytes = base64_string.encode("ascii")


sample_string_bytes = base64.b64decode(base64_bytes)

sample_string = sample_string_bytes.decode("ascii")


print(f"Decoded string: {sample_string}")
```