Faculty Name: IT
Qualification Name:
Programming Foundation
Group Activity 1

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Group Assessment: Programming with Python

Group Activity 1

Faculty Name:	Information Technology
Qualification Name:	IT Certificate in Programming Foundation
Module Name:	Programming with Python Semester 1
Module Code:	PRP411
Hand Out:	18 – 03 – 2023
Hand In:	30 – 03 – 2023
Total Marks:	100
Examiner:	Mr Junior Manganyi
Resources Required:	None

Instruction to Students

1. Read all instructions carefully before beginning the assessment.

2. Read each question carefully and make sure you understand what is being asked.

3. Show all work and clearly label your answers.

4. Use correct grammar, spelling, and punctuation.

5. When you have finished the assessment, check your work to make sure you have answered all questions to the best of your ability.

6. Answer all multiple-choice questions in a Word file.

7. Programmes to be written in Visual Studio Code in python. Provide comments to all code.

8. Screenshot all code and include that in the Word file, save as PDF.

Question 1: Theory-based (40 marks)
Instructions: Choose the correct answer for each question.

1. What is Python?
   a. A reptile
   b. A programming language
   c. A type of computer
   d. An operating system

   [2]

2. Which of the following is a valid variable name in Python?
   a. 123var
   b. my_variable
   c. var!name
   d. None of the above

   [2]

3. Which of the following datatypes is mutable?
   a. Integer
   b. String
   c. Tuple
   d. Dictionary

   [2]

4. What is the result of the following code?
   x = 5 + "10"
   a. 510
   b. 15
   c. Error
   d. None of the above

   [2]

5. Which of the following is a Boolean expression?
   a. 5 + 2
   b. "Python" == "python"
   c. "True" or "False"
   d. None of the above

   [2]

6. What is the output of the following code?
   x = "Hello World"
   print(x[3])
   a. "Hello World"
   b. "H"
   c. "l"
   d. None of the above

   [2]

7. What does the keyword "in" do in Python?
   a. It checks if a value is in a list, tuple, or string.

b. It declares a variable.

c. It creates a loop.

d. None of the above

[2]

8. Which of the following is a valid way to declare a multiline string in Python?

a. str = "Hello\nWorld"

b. str = "Hello

World"

c. str = """Hello World"""

d. All of the above

[2]

9. Which of the following is a valid way to start a comment in Python?

a. //

b. /*

c. #

d. None of the above

[2]

10. What is the output of the following code?

```
x = 10
if x > 5:
    print("x is greater than 5")
else:
    print("x is less than or equal to 5")
```

a. x is greater than 5

b. x is less than or equal to 5

c. Error

d. None of the above

[2]

11. What is the output of the following code?

```
x = 10
y = 2
z = x / y
print(z)
```

a. 5

b. 2

c. 0.2

d. None of the above

[2]

12. Which of the following is a valid way to check if a number is even in Python?

a. x % 2 == 0

b. x / 2 == 0

c. x * 2 == 0

d. None of the above

[2]

13. What is the output of the following code?

```
x = [1, 2, 3]
y = x.pop()
print(y)
```
    a. 1
    b. 2
    c. 3
    d. None of the above

[2]

14. Which of the following is a valid way to create a dictionary in Python?
    a. {1, "apple", 2, "banana"}
    b. [1:"apple", 2:"banana"]
    c. {1:"apple", 2:"banana"}
    d. None of the above

[2]

15. What is the output of the following code?

```
x = [1, 2, 3]
y = x[1:3]
print(y)
```
    a. [1]
    b. [2, 3]
    c. [1, 2, 3]
    d. None of the above.

[2]

16. Which of the following is a valid way to create a function in Python?
    a. def myFunction(): print("Hello World!")
    b. function myFunction(): print("Hello World!")
    c. myFunction = def(): print("Hello World!")
    d. None of the above

[2]

17. What is the output of the following code?

```
x = 1
while x < 5:
    print(x)
    x += 1
```
    a. 1 2 3 4
    b. 1 2 3 4 5
    c. 0 1 2 3
    d. None of the above

[2]

18. What is the output of the following code?

```
for x in range(2, 6):
    print(x)
```
    a. 2 3 4 5

 b. 1 2 3 4 5
 c. 1 2 3 4
 d. None of the above [2]

19. What is the output of the following code?
 x = (1, 2, 3)
 print(x[1])
 a. (1, 2, 3)
 b. 1
 c. 2
 d. None of the above [2]

20. What is the output of the following code?
 x = [1, 2, 3]
 for i in x:
     print(i)
 a. 1 2 3
 b. [1, 2, 3]
 c. 0 1 2
 d. None of the above [2]

Total [40]

Question 2: Practical-based (60 marks)

Instructions: Complete the following three programming tasks using Python. Each task is worth 20 marks.

Part 1:

Calculator Create a calculator program that asks the user to enter two numbers and an operator (+, -, *, /). The program should then perform the specified operation on the two numbers and display the result. The program should keep asking the user for new inputs until they choose to quit. The programme should check whether or not the user tried to divide by 0. The programme should display an error to the user if they try to divide by 0 and ask for a reprompt. The user should only be allowed reprompts before exiting the programme with a message to the user that they exceeded their limit. [20]

Part 2:

Palindrome Checker Create a program that asks the user to enter a word or phrase and then checks if it is a palindrome. A palindrome is a word or phrase that is spelled the same way forwards and backwards. For example, "racecar" is a palindrome. The program should display a message indicating whether the input is a palindrome or not. [20]

Part 3:

Create a program that defines three functions:

- Function 1: Takes in a list of numbers and returns the sum of all the numbers in the list.
- Function 2: Takes in a list of words and returns the length of the longest word in the list.
- Function 3: Takes in a string and returns the string reversed.

In the main program, prompt the user to enter a list of 10 numbers. Then call the appropriate function and display the result. Prompt the user if they would like to try again with a new list.

Next, prompt the user to enter a list of 10 words. Then call the appropriate function and display the result. Prompt the user if they would like to try again with a new list.

Next, prompt the user to enter a string. Then call the appropriate function and display the result. Prompt the user if they would like to try again with a new list.

[20]

Total [60]

Total [100]

Completed Declaration of Authenticity

I _____ hereby
          (FULL NAME)

declare that the contents of this assignment **_____** is entirely my own
work except for the following documents: (List the documents and page numbers of work in this
portfolio   that were generated in a group)

Activity	Date

Signature: _____ Date: _____