Programming Lab (Lab 11)

zyBooks & Python

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Table of Contents

INTRODUCTION

- In this lab, we used a combination of practices. We finish chapter 6 of "Programming Fundamentals" in zyBooks. Following the reading, we wrote a program in Python. Below outlines the work in greater detail.

OBJECTIVES

- Further enhance our understanding in Python.
- Further enhance our understanding with Functions in Python.
- Develop more efficient ways to create code in Python.

MATERIAL USED

- (1x) computer for zyBooks and Python.

PROCEDURE

- *Step 1:* Read the instructions outlined in the **lab paper**.
- *Step 2:* Follow the instructions given from the **lab paper** (Follow the order of given instructions *i.e. "Read zyBooks first then do Python code"*).

RESULTS AND DISCUSSION

(Continued on next page)

Python code for Question 2

```
'''
This program is designed to replicate three basic funtions of a calculator. The two numerical values are inputted by the user.

Program made by: Leonardo Fusser (1946995)
For: Subash Handa
Programming Fundamentals
(Lab 11)(Question 2)

'''


#[Start of program]


#variable definition
def main():
  operations_list = ["1.Addition", "2.Subtraction", "3.Multiplication", "4.Division"]
  print('Here are some operations:')
  print(*operations_list, sep='\n')
  print("--------------------------------")
  Operation = input("Choose your operation: ")
  print("--------------------------------")

  while True:
    try:
      num1 = float(input('Enter a number: '))
      num2 = float(input('Enter another number: '))
      break
    except ValueError:
      float(input('Try again! Please only enter a numerical value!: '))
  return Operation,num1,num2

#page break
print("--------------------------------")


#(Defining the calculator operations)

#Addition
def add(num1,num2):
  print(num1 + num2)
```

Ln: 91 Col: 16

```
#Substraction
def substract(num1,num2):
  print(num1 - num2)

#Multiplication
def multiply(num1,num2):
  print(num1 * num2)

#Division
def divide(num1,num2):
  print(num1 / num2)



def operations():

#selection based on user input
  if Operation == '1':
    add(num1,num2)

  elif Operation == '2':
    substract(num1,num2)

  elif Operation == '3':
    multiply(num1,num2)

  elif Operation == '4':
    divide(num1,num2)


Operation,num1,num2 = main()
print(num1,num2)
operations()


#quit or continue
while True:
  calcstate = input('Would you like to end the program? Yes-end, No-continue: ')
  print("--------------------------------")
  if calcstate == 'Yes':
                break
  else:
```

Ln: 91 Col: 16

```
#Division
def divide(num1,num2):
  print(num1 / num2)


def operations():

#selection based on user input
  if Operation == '1':
    add(num1,num2)

  elif Operation == '2':
    substract(num1,num2)

  elif Operation == '3':
    multiply(num1,num2)

  elif Operation == '4':
    divide(num1,num2)


Operation,num1,num2 = main()
print(num1,num2)
operations()


#quit or continue
while True:
  calcstate = input('Would you like to end the program? Yes-end, No-continue: ')
  print("------------------------------")
  if calcstate == 'Yes':
                break
  else:
       Operation,num1,num2 = main()
       print(num1,num2,Operation)
       operations()


#[End of program
```

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Python code output for Question 3

```
Python 3.7.4 (tags/v3.7.4:e09359112e, Jul  8 2019, 19:29:22) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
 RESTART: C:\Users\Leonardo Fusser\Google Drive\Leonardo CEGEP\Vanier (Year 1, 2, 3)\Vanier (Year 1)\Vanier Fall Semester\Classes\Programming Fundamentals\Labs\My work
\Lab #11\Python\Programming Fundamentals (Lab 11)(Q2)_Leonardo Fusser.py
------------------------------
Here are some operations:
1.Addition
2.Subtraction
3.Multiplication
4.Division
------------------------------
Choose your operation: 3
------------------------------
Enter a number: 2
Enter another number: 3
2.0 3.0
6.0
Would you like to end the program? Yes-end, No-continue: No
------------------------------
Here are some operations:
1.Addition
2.Subtraction
3.Multiplication
4.Division
------------------------------
Choose your operation: 4
------------------------------
Enter a number: 24
Enter another number: 12
24.0 12.0 4
2.0
Would you like to end the program? Yes-end, No-continue: Yes
------------------------------
>>>
```

Ln: 34 Col: 4