Introduction to Computer Science and Programming

--Python--

Assignment 1

Instructions

The following assignment can be completed individually or with a partner. Each question is worth an X amount of marks and is clearly labeled. For submission you may either write it by hand and provide a hard copy of your solutions or you may type your answers. It is recommended that you type your answers as you can run the code to check if your solution is correct. Specifically, if you are typing your answers you should have all your solutions within a file called A1_<Last_name>_<First_name>.py (Ex. A1_lam_kavan.py). For questions that do not involve you writing code please answer the question by using comments. Ensure all solutions to the questions are labeled clearly. Note: you should be using functions to organise your solutions as we did in class. Best of luck.

Question 1 [5 Marks]

In class we talked about how Python can be used as a calculator along with many of the mathematically operators that are available. Name the following operators and describe what they do.

  a. //
  b. **
  c. %
  d. *
  e. /

Question 2 [3 Marks]

Write code which prompts the user for their name and age and then have the program output the following "Hello <name> your age is <age>." Note: put the code inside a function called question2 which takes no parameters. Then call the function to run your code.

Question 3 [2 Marks]

In the Python console if we enter in 1/0 what happens? Why does this happen? Note: you do not need to write code for this question.

Question 4 [3 Marks]

Name and describe three different data types in Python.

Question 5 [2 Marks]

Explain the issue with the following piece of code.

```
x = 3
x = x + 1
y = "Name"
        print("Blah Blah" + (x+y))
```

Question 6 [5 Marks]

Write a function called question6 which takes a single number as input and if the number is greater than 50 then output "Wow that is a big number". If the number is less than 50 then output "That is a small number". If the number is exactly 50 then output "50 is my lucky number!". Note: to get full marks you can only use the keyword "if" once.

Question 7 [5 Marks]

Write a function called question7 which takes any two numbers as input and prints out a message letting the user know which number is bigger. An example message would be "The number 5 is bigger than 1."

Question 8 [5 Marks]

Write a function called question8 which takes in a number which represents a temperature in Fahrenheit and have the function print to the screen the temperature in degrees Celsius.

Question 9 [5 Marks]

Explain the difference between the following two pieces of code and how the behaviour is different. Which version is better and why?

Code snippet 1

```
if x > 5:
  print("hi")
elif x < 5:
  print("bye")
```

Code snippet 2

```python
if x > 5:
    print("hi")
if x < 5:
    print("bye")
```

Question 10 [5 Marks]

Be creative. Write a function named whatever you want that does something cool.

End of Assignment 1