CS521 Homework 1 : Python Basics

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No collaborators, no late day used

Source: How to Think Like a Computer Scientist: Interactive Edition, textbook

Problem 1 (13 points) Evaluate the following expressions:

1. 11.1 + 12 = 23.1
2. 10 − 12.1 =-2.1
3. 5 * *3 = 125
4. 4 * 5 =20
5. 15/10 = 1.5
6. 12/20 = 0.6
7. 15//10 =1
8. 12//20 =0
9. 5%2 =1
10. 9%5 =4
11. 2%5 =3
12. 6%6 =0
13. 0%7 =0

Problem 2 (5 points) What is the value of the below expression? Show your work

2 + 10%3 * (4 − 1) * 20/5 * (2 + 3)

2 + 10%3 * 3 * 20/5 * 5

2 + 1*3*20/5*5

2 + 3*20/5*5

2 + 60/5*5

2 + 60

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Problem 3 (5 points) What is the output of the following code?

my_int = 5

my_int *= 3

print(my_int)

my_int *=3 -> my_int = my_int * 3

my_int = 15

output is 15

Problem 4 (6 points)

You see the following code:

A = input("Enter number 1")

B = input("Enter number 2")

a = int(a)

b = int(b)

c = a + b

[2] You get the error: NameError: name 'a' is not defined on line 3. Why did this happen?

Because case matters in python, in line 1 and 2 only variable 'A' and 'B' are defined, which is different from lowercase 'a' and 'b'.

Problem 5 (11 points)

For each of the following expressions, say whether it is valid or invalid in Python. If valid, what simplified value would the left side be assigned to? If invalid, briefly explain why.

1. foo = "Hello"

   Valid, foo = "Hello"

2. bar = True

   Valid, bar = Boolean value True

3. foobar = 1 + 2

   Valid, foobar = 3

4. foobar = "One" + "Two"

   Valid, foobar = "OneTwo"

5. true = 5

   Valid, true = 5

6. foo = test

   Invalid, because 'test' is not defined

7. or = 1

   Invalid, because 'or' can not be used as a variable name

8. seven = 1 + "1"

   Invalid, because string can not add with an integer.

9. six = "1" + 1

   Invalid, same as above, different type of variables and not be added

10. 1_var = 2

    Invalid, because variable name cannot start with number

11. var_1 = "foo"

    Valid, var_1 = "foo""