CS-521 Homework Assignment 1

Eva Huang   
CS 521 - Spring  
1/24

**Instructions**

* Please read the Assignment Directions below.

**Assignment Directions**

Complete the following problems from the textbook: 1, 2, 3, 4, 5, 6, 7, 8, 11, 12 (pages 78 - 79)

1. What is a program?

A program is a human-readable essay on problem solving that also happens to execute on a computer.

1. Python is an interpreted language. What does “interpreted” mean in this context?

A program within Python that takes Python code line by line and executes that code.

1. What is a Python comment? How do you indicate a comment? What purpose do they serve?

Python comment is a way to put outs in our code. We indicate a comment by starting the line with a pound sign. Python interpreter ignores anything follows behind #. It provides extra info for the reader who is reading the code.

1. What is a namespace in Python?

Namespace is how Python interpreter maintains a structure to keep list of names and their associated values.

1. Whitespace:
   1. What is whitespace in Python?

Python counts white space as: space, tab, return, linefeed, formfeed and vertical tab.

* 1. When does whitespace matter?

When four whitespace leading a line of code, it forms indentation. Indentation indicates the block of code.

* 1. When does whitespace not matter?

Whitespace is ignored within both expressions and statements.

1. Explain the difference between a statement and an expression. Give an example of both, and explain what is meant by a statement having a side effect.

A statement does not return a value, but does perform some task.

Expressions are combinations of values and operations, in return creates a new value.

x=0

This is a statement, x is given a value. No return value.

Output of x is going to be 0

x=x+10

x is assigned a new value, the output is going to be different every time (10,20,30…) because the task is to add 10 to existing x. Therefore this is considered an expression

1. Mixed operations:
   1. What type results when you divide an integer by a float? A float by an integer?

When divide an integer by a float, the result is going to be a float.  
When dividing a float by an integer, the result is going to be an float.

* 1. Explain why that resulting type makes sense (as opposed to some other type).

When conversion of a float to an integer by operation, we might lose the fractional information in the float. Therefore, when presented with mixed types, python converts integer to be a floating point so that both operands are floats and the operation can be performed as floats.

1. Consider integer values of a, b, and c, and the expression (a + b) \* c. In mathematics, we can substitute square brackets, [], or curly braces, {}, for parentheses, (). Is that same substitution valid in Python? Try it.

No it is not the same.  
[a+b]\*c returns [c,c,c]  
{a+b}\*c returns error

1. Assignment:

my\_int = 5  
my\_int = my\_int + 3  
print(my\_int)

* 1. If you execute the three lines of code, what will be printed? Explain your answer using the rules of assignment.

8 will be printed  
my\_int was assigned value of 5  
my\_int was then re-assigned value of my\_int (value of 5)+3  
Hence the result 8 will be printed

* 1. Rewrite my\_int = my\_int + 3 using the += symbol

my\_int = 5  
myint + = 3  
print(my\_int)

1. Assignment:  
     
    my\_var1 = 7.0  
    my\_var2 = 5  
    print(my\_var1 % my\_var2)  
     
   If you execute these three lines of code, what will be printed?

2.0 will be printed

**Where to submit?**

Click Assignments in the Navigation Area and then click on the title of the assignment to enter the submission area and upload your response.