COSC 101: Spring 2018
Lecture 04: Conditionals

1. A New Type

   a) What is the result of the following statement in python?

       \texttt{print(type(True))}

   b) What operations are valid on Boolean values?

   c) What is the result of the following statements?

       \texttt{print(True > False)}

       \texttt{print(False and True)}
2. Boolean Expressions

a) What is the result of the following statements?

```python
x = 3
y = 4
z = 12
print(x != y)
print(x == z)
a = z < y
print("a =", a, "type a =", type(a))
b = x > y
print("b =", b, "type b =", type(b))
print(x <= y)
print(x * y >= z)
```

b) What is the result of the following statements?

```python
monkeys = giraffes = 6

elephants = 10

elephants >= 8 or monkeys >= 8 and giraffes >= 8
```

c) What is the result of the following code segment in python?

```python
5 > 6 != True
```
3. Conditional Statements

a) Let’s write a program that asks for the user’s score from a Scrabble game. If the score is greater than 300 (a good score) the program prints out the message, “Good Game”. The program prints out the message, “Keep playing!” no matter what the user’s score is.

b) Write a code segment that prints the absolute value of an input integer. The code is started for you below:

```python
x = int(input("Enter an integer: "))
```

c) Write a code segment that prints out whether an entered number is even or odd. The code is started for you below:

```python
x = int(input("Enter an integer: "))
```
d) Nested Conditionals

Observe the following code:

```python
x = 24
y = "apple"
if (x > 0):
    if (y == "apple"):
        print("There are", x,"apples")
    else:
        print("No apples for you!")
else:
    print("No apples for you!")
```

What is the output of the code segment above?

The second if else statement is nested within the first one. Is there a way to improve this code? (Hint: use Logical Operators) Write the improved code below.
e) Chained Conditionals

What is the output of the following code segment in python?

```python
x = 13
y = 21
z = 4
if (z < y and x != 13):
    z = z + x
elif(z < y and x == 13):
    z = x
elif(z <= x and x < y):
    z = z + y
else:
    z = y
print("z =", z)
```
4. Password Program Example

Write a program that prompts the user for a user name and then for a password. There are only two valid users Charlie and Mabel. Charlie’s Password is Purple and Mabel’s Password is Kittens. If Charlie logs in successfully the program should print “Login Success! Hello, Charlie!”, with a similar result for Mabel. If a username other than Charlie or Mabel is entered or passwords do not match usernames the program should print out “**** Access Denied! ****” and exit.