**In-class activity 9 – Boolean expressions, logical operators, and if statements**

**NAME**:

1. A close up of a logo

   Description automatically generatedIndicate whether each Boolean expression below evaluates to True or False. Let **n=10** and **k=20**. Test your answer in Thonny. For example, in Python you could write:
   1. (n>10) and (k==20)
   2. (n==10) and (k==20)
   3. (n>10) or (k==20)
   4. not( (n>10) and (k==20) )
   5. (n>10) or (k==10 or k!=5).
   6. (not(n>10)) and (not(k==20))
   7. (n>10) or (k==10 or k != 5)
   8. (n<20) or (k==20)
   9. (n>=10) and (k<=20)
2. Give a Boolean expression for each of the following. Determine if variable **num** is:
   1. greater than or equal to 0 and less than 100.

* 1. less than 100 and greater than or equal to 0, or it is equal to 200.

* 1. a strictly positive number but not larger than 150 (inclusive).

1. Consider these lines of code to answer the following questions. Test your answer in Thonny.

if x>5:

print("A")

elif y<10:

print("B")

elif x==10:

print("C")

else:

print("D")

* 1. What prints out if initially x = 5 and y = 11?

* 1. What prints out if initially x = 10 and y = 11?
  2. What prints out if initially x = 0 and y = 5?
  3. Is there any value of x or y that will print “C”?

1. What exactly do the following statements print in Thonny? (Don’t forget to import random)
   1. print( random.random() )
   2. print( random.random() )
   3. print( random.random() )

* 1. Why are they different?

**If you finish early**

1. Write in python a function that takes three integers as parameters and returns the largest. Test your function by calling it with various inputs. Copy your function definition below.
2. A fruit company sells oranges for 32 cents per pound, plus $7.50 per order for shipping. If an order weighs more than 100 pounds, the shipping cost is reduced by $1.50. Write a function that will take the number of pounds as oranges as a parameter and returns the cost of the order. Test your function by calling it with various inputs. Copy your function definition below.

**Each individual will turn in this document (either after class or bring to the next class meeting). Submit your python code to that you used to test to Moodle.**