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

**Discuss the following with your group** and write your answers. Do not continue to the next question until all group members are satisfied with and understand the solution. Please enable your webcam and introduce yourself to your group first.

NAME: Your name here

1. Indicate whether each Boolean expression below evaluates to True or False. Let **n=10** and **k=20**. Test your answer in Thonny.
   1. (n>10) and (k==20) ANSWER: ?
   2. (n>10) or (k==20) ANSWER: ?
   3. not( (n>10) and (k==20) ) ANSWER: ?
   4. (not(n>10)) and (not(k==20)) ANSWER: ?
   5. (n>10) or (k==10 or k != 5) ANSWER: ?
   6. (n<20) or (k==20) ANSWER: ?

For example, in Python you could write:

A close up of a logo

Description automatically generated

1. 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.

ANSWER: ?

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

ANSWER: ?

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

ANSWER: ?

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

1. What exactly do the following statements print in Thonny? (Don’t forget to import random)
   1. print( random.random() ) ANSWER: ?
   2. print( random.random() ) ANSWER: ?
   3. print( random.random() ) ANSWER: ?
   4. Why are they different? ANSWER: ?
2. If you finish early
   1. complete problem 2.33 on page 72 of your book. Copy your function definition below.

ANSWER:

?

* 1. complete problem 2.35 on page 72 of your book. Copy your function definition below.

ANSWER:

?

**Each individual will submit this word document to Moodle (Activity 9) when finished.**