# Lab 2.02 - Can I or Can’t I

## In your Notebook

Predict if each of the following examples will produce a True or False output. Check your answers in interactive mode.

### Example 1

>>> a = 100  
 >>> b = "science"  
 >>> a > 75 and b == "science"

|  |  |
| --- | --- |
| **Predicted Output** | **Actual Output** |
|  |  |

### Example 2

>>> a = 100  
 >>> b = "science"  
 >>> a > 75 and b != "science"

|  |  |
| --- | --- |
| **Predicted Output** | **Actual Output** |
|  |  |

### Example 3

>>> a = 100  
 >>> b = "science"  
 >>> a > 75 or b != "science"

|  |  |
| --- | --- |
| **Predicted Output** | **Actual Output** |
|  |  |

### Example 4

>>> a = 100  
 >>> b = "science"  
 >>> c = True  
 >>> not c and a > 75 and b == "science"

|  |  |
| --- | --- |
| **Predicted Output** | **Actual Output** |
|  |  |

## In your Console

### Complete the following coding challenge

1. Create a “Can I be President?” program, which determines if the user meets the minimum requirements for becoming the President of the United States. Have the user input the information needed.

* **The minimum requirements to be president of the United States are:**
  + Older than 35
  + Resident of US for 14 Years
  + Natural born citizen
  + Print True if the person could be president and False if they can’t be president.

1. Create a “I can’t be President?” program. Print True if the user cannot be President and False if they can be President.
2. Create a “Can I ride the roller coaster?” program. A roller coaster has the rule that a rider has to be over the height of 50 inches. Because of a legal loophole, if you are over the age of 18 you can ride regardless of your height. If you are allowed to ride, the coaster costs 4 quarters (although the operator accepts tips so more money is appreciated).
   * Also, the theme park sells frequent rider passes: with a frequent rider pass the roller coaster costs only 2 quarters. Ask the user how tall they are in inches, their age, how many quarters they have, and if they have a frequent rider pass. Print True if the person can ride and False if they can’t.

## Bonus

### Are the following expressions equivalent? Research DeMorgan’s Laws and write why you think they are the same or why they are not the same

not(x or y) == not x and not y

not(x and y) == not x or not y