CSI 102: Lab 02 Conditionals

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I certify that this lab report is entirely my own work.

Introduction

Welcome to the second Lab of CSI 102, where we've moved on from the basics of Python into if, elif and else conditional statements, allowing us to create more complex situations in coding. This lab exercise was created with the intention of being able to master these conditional statements and have their use be applicable to many situations, such as random number generation.

Methods:

Task 1 was to create a guessing game using conditionals and random number generation. The steps were:

1. Creating the file.
2. Importing the Random library.
3. Assigning variables to the range of numbers to be randomly generated, the player's keyboard input in the terminal, and conditional statements that told the player if they hit the jackpot or if they lost.

```
# Author: Anthony Cavallo
# Date: 09/14/2025
# Description: A guessing game
# Honor Code: I affirm this work is my own and I've credited external sources.

import random

x = random.randint(1, 100)

y = int(input("A random number between 1 and 100 has been generated. Try to guess it: "))

if y < x:
    print("Your answer was too low. Better luck next time.")
elif y > x:
    print("Your answer was too high. Better luck next time.")
else:
    print("Congratulations! You guessed the correct number.")
```

Task 2 is different from Task 1 and even Task 3, which I will get into later. Task 2 uses conditional statements to have the user be able to convert a range of numbers from 1 through 9 into roman numerals using their Unicode numeric values. The steps were:

1. Creating the file.

2. Assigning one variable (x) to be used as user input.

3. Use conditional statements to check if the user inputted a number between 1 and 9, in which successful, will generate the converted roman numeral for that input.

```
# Author: Anthony Cavallo
# Date: 09/14/2025
# Description: A roman numeral and unicode converter
# Honor Code: I affirm this work is my own and I've credited external sources.

x = int(input("Enter a number between 1 and 9: "))

if x == 1:
    print("The roman numeral for 1 is \u2160")
elif x == 2:
    print("The roman numeral for 2 is \u2161")
elif x == 3:
    print("The roman numeral for 3 is \u2162")
elif x == 4:
    print("The roman numeral for 4 is \u2163")
elif x == 5:
    print("The roman numeral for 5 is \u2164")
elif x == 6:
    print("The roman numeral for 6 is \u2165")
elif x == 7:
    print("The roman numeral for 7 is \u2166")
elif x == 8:
    print("The roman numeral for 8 is \u2167")
elif x == 9:
    print("The roman numeral for 9 is \u2168")
else:
    print("The number you entered is not between 1 and 9.")
```

And finally, Task 3 was to create a Dungeons and Dragons scenario where the random number generator from Task 1 will be used to generate a D20 instead. The conditional statements set up afterwards will be used to determine whether the player achieves success or failure in their mission to find the hidden door. The steps were:

1. Creating the file
2. Importing the Random library
3. Assigning a variable to a range between 1 and 20.
4. Setting up conditional statements to determine if the player finds the door.

```python
# Author: Anthony Cavallo
# Date: 09/14/2025
# Description: A die roll simulator
# Honor Code: I affirm this work is my own and I've credited external sources.

import random

x = random.randint(1, 20)

if x == 20:
    print("Critical success! You found the hidden door and a pouch with 5 gold pieces inside.")
elif x == 1:
    print("Critical failure! You didn't find the hidden door and you accidentally alerted the guards.")
elif x >= 12:
    print("You found the hidden door.")
elif x < 12:
    print("You did not find the hidden door.")
```

Results:

Task 1:

```
A random number between 1 and 100 has been generated. Try to guess it: 36
Your answer was too low. Better luck next time.
```

Task 2:

```
Enter a number between 1 and 9: 1
The roman numeral for 1 is I
```

Task 3:

```
You found the hidden door.
```

```
You did not find the hidden door.
```

```
Critical failure! You didn't find the hidden door and you accidentally alerted the guards.
```

Discussion:

While I've already learned about conditionals during class, it was absolutely necessary to learn them because without them, this lab would've been impossible. I've learned in this lab exercise how to import the random library and use the integers generated for those conditionals though. I found the random.randint command by simply writing the random. and finding the randint, intuitively making me think it means random integer. Once I learned that, everything was easy to me. I could definitely use all of what I learned for game design. Games require random numbers and especially ranges in order to

determine difficulty options for example. Like in FNAF for instance, random numbers are used to decide whether an animatronic moves to a new camera location or if they stay in their current position as the night progresses.

Challenges:

I haven't ran into that many challenges here. It was quite simple and I'd say it even refined my knowledge about conditionals too.

Conclusion:

I learned and refined my knowledge of:

- Importing libraries
- Conditionals
- Random number generation
- Setting ranges for numbers

I'm glad I was able to improve my mastery over these concepts because it would surely help me in future labs and lessons.