**If-Else**

If else blocks are used to change the course of the running program based on boolean conditions. Imagine this as being a fork on the road and based on some condition, one of the road is chosen.

The structure looks something like this

if <condition>:

some statements

else:

some other statement

Note the indentation on the line after if. It means that those statements are part of the if logic. Same applies for else. Hint: any time you add a :, the next line always needs to be indented, denoting that the following statements belong to it. e.g

i = 2

if i < 5:

print("less than 5")

else:

j = 10

print("done")

when python code is run line by line, the first 2 is stored in i. Next it checks if i < 5 since 2 < 5 it goes inside the if condition. And prints the "less than 5" If i was initally set to 6, then the if condition would have failed and the else block would have run (store 10 to j)

Note that one of the statement either inside if or inside else will be run. Never both or never neither. Note you can put anything logic in side the if block. It could be print or variable assignment...

There is also an option to add multiple conditions using elif

i = 2

if i < 5:

print("<5")

elif i < 3:

print("<3")

else:

print("else")

Since python is run line by line, it first checks the first if and since it satisfies the condition i < 5, it prints "<5". None of the next elif and else statements are run even if some subsequent elif satisfy the condition. Even though i < 3 is satisfied, it won't get executed since the if condition above is satisfied first.

i = 6

if i < 5:

print("<5")

elif i < 7:

print("<3")

else:

print("else")

In this case the first condition fails, and hence checks the next elif. Since that elif satisfies it prints "<3" and comes out. Note that else is not run since one of the elif is run.

i = 6

if i < 5:

print("<5")

elif i < 3:

print("<3")

else:

print("else")

Here both the if and elif conditions are not satisfied and so else is run.

Consider if elif else as a fork in the road, once you choose a road, you can not take other roads.

Multiple elifs can be also placed and if any one of the if or elif is satisfied, that path is taken and nothing else. e.g

if i == 1:

print("1")

print("if")

elif i == 2:

print("2")

print("elif1")

elif i == 3:

print("3)

print("elif2")

else:

print("else")

based on the vlaue i set before, one of the if or elif is taken.