Flow of Control Using If Statements

- Comparison Operators

Operator	Description	Example
==	Tests if two values are equal	3 == 3
!=	Tests that two values are *not* equal to each other	2 != 3
<	Tests to see if the left-hand value is less than the right-hand value	2 < 3
>	Tests if the left-hand value is greater than the right-hand value	3 > 2
<=	Tests if the left-hand value is less than *or* equal to the right-hand value	3 <= 4
>=	Tests if the left-hand value is greater than or equal to the right-hand value	5 >= 4

Logical Operators

Operator	Description	Example
`and`	Returns True if both left and right are true	`(3 < 4) and (5 > 4)`
`or`	Returns two if either the left or the right is truce	`(3 < 4) or (3 > 5)`
`not`	Returns true if the value being tested is False	`not 3 < 2`

The If Statement

- `if <condition-evaluating-to-boolean>:`
- `  Statement`
- `num = int(input('Enter a number: '))`
- `if num < 0:`
- `  print(num, 'is negative’)`
- `The output is`
- `Enter a number: -1`
- `-1 is negative`

The If Statement

- `num = int(input('Enter another number: '))`
- `if num > 0:`
- `  print(num, 'is positive')`
- `  print(num, 'squared is ', num * num)`
- `print('Bye')`
- If we now run this program and input 2 then we will see
- `Enter another number: 2`
- `2 is positive`
- `2 squared is 4`
- `Bye`

Else in an If Statement

```
num = int(input('Enter yet another number: '))
if num < 0:
    print('Its negative')
else:
    print('Its not negative’)
```

- The output is
- Enter yet another number: 1
- Its not negative
- And in run 2 if we enter the value –1:
- Enter yet another number: -1
- Its negative

The Use of elif

```
savings = float(input("Enter how much you have in savings: "))
if savings == 0:
    print("Sorry no savings")
elif savings < 500:
    print('Well done')
elif savings < 1000:
    print('Thats a tidy sum')
elif savings < 10000:
    print('Welcome Sir!')
else:
    print('Thank you’)
```

Nesting If Statements

```
snowing = True
temp = -1
if temp < 0:
    print('It is freezing')
    if snowing:
        print('Put on boots')
    print('Time for Hot Chocolate')
print('Bye')
```

If Expressions

```
age = 15
status = None
if (age > 12) and age < 20:
    status = 'teenager'
else:
    status = 'not teenager'
print(status)
```