

## Python for Beginners – Class 3 Notes

### IF Statements - Boolean compound operators

- **and** – returns true if **BOTH** expressions are true
- **or** – returns true if **EITHER** or **BOTH** expressions are true

**Example:**

```
english = 95
math = 70

if (english > 80 and math > 80):
    print ("Wow!!")
else:
    print ("Do better next time!!")
```

This will output “Do better next time!!”, since **math** is **BELOW 80** and we are using **and** (requires BOTH statements to be true).

If the **and** was instead replaced with an **or**, then the output would be “Wow!!”, since **English** is **ABOVE 80** (**or** only requires at least one of the statements to be true).

### WHILE Loops

- **Infinite loops**
  - o Loops that repeat forever
  - o Usually, this is NOT what you want

```
while True:
    # blah blah
```
- **Conditional loop (finite loop)**
  - o Repeat as long as the Boolean expression is true

```
while (Boolean expression):
    # blah blah
```

### FOR Loops

- Used when number of times to repeat is known
- Has a **counter** variable with a **given range**.

```
for count in range (start, end, increment):  
    # blah blah
```

- If no **increment** is given, the default increment is **1**
- If no **start** is given, the default start is **0**
- The **start** will be included, but the loop will end **one increment before the end**
  - o For example, **for count in range (2, 9)** will loop when **count = 2, 3, ..., 8** – it does NOT loop when **count = 9**.

```
for count in range (10):  
    print (count)  
# output: 0, 1, 2, ..., 9
```

```
for count in range (1, 6):  
    print (count)  
# output: 1, 2, 3, 4, 5
```

```
for count in range (10, 1):  
    print (count)  
# no output, doesn't loop at all (no going backwards)
```

```
for count in range (-5, 2):  
    print (count)  
# output: -5, -4, -3, -2, -1, 0, 1
```

```
for count in range (1.5, 5.5):  
    print (count)  
# output: ERROR – no decimals allowed
```

```
for count in range (1, 6, 2):  
    print (count)  
# output: 1, 3, 5
```