# Session 3

## Python If ... Else

Python supports the usual logical conditions from mathematics:

- Equals: `a == b`
- Not Equals: `a != b`
- Less than: `a < b`
- Less than or equal to: `a <= b`
- Greater than: `a > b`
- Greater than or equal to: `a >= b`

An "if statement" is written by using the `if` keyword

### Ex:

```python
a = 33
b = 200
if b > a:
  print("b is greater than a")
```

# Indentation

Python relies on indentation (whitespace at the beginning of a line) to define scope in the code. Other programming languages often use curly-brackets for this purpose.

# Elif (else if):

## Ex:

```
a = 33
b = 33
if b > a:
  print("b is greater than a")
elif a == b:
  print("a and b are equal")
```

# Else :

## Ex:

```
a = 200
b = 33
if b > a:
  print("b is greater than a")
elif a == b:
  print("a and b are equal")
else:
  print("a is greater than b")
```

# And

The and keyword is a logical operator, and is used to combine conditional statements:

## Example

Test if a is greater than b, AND if c is greater than a:

```
a = 200
b = 33
c = 500
if a > b and c > a:
  print("Both conditions are True")
```

## Or

The or keyword is a logical operator, and is used to combine conditional statements:

**Example**

Test if a is greater than b, OR if a is greater than c:

```
a = 200
b = 33
c = 500
if a > b or a > c:
  print("At least one of the conditions is True")
```

**Ex:**

**Even and odd numbers code**

**check if the entered number from user is even or odd**

**Code:**

```
x=int(input("enter number"))
if (x%2==0):
   print(x ," is even number")
else:
   print(x ," is odd number")
```

# Python Loops:

# For loop:

## The range() Function:

To loop through a set of code a specified number of times, we can use the range() function.

The `range()` function returns a sequence of numbers, starting from 0 by default, and increments by 1 (by default), and ends at a specified number.

### Example

Using the range() function:

```python
for x in range(6):
  print(x)
```

**Ex:**

**Even and odd numbers code for a range of numbers**

**Code:**

```
for x in range(10):
  if (x%2==0):
    print(x ," is even number")
  else:
    print(x ," is odd number")
```