Introduction to Python

Class 2

Flow Control

Branches

The basic branch statement is the if condition. It executes a set of instructions immediately below it if a Boolean expression it checks for is true, if it's false it executes the piece of code under the else keyword. The else keyword is optional. Indentation is used to specify a block of statements. The indent is usually 4 spaces or 1 tab.

```
marks = 70
if marks>75:
   print("Distinction")
else:
   print("First class")
```

Another keyword that can be used along with if-else statements is elif which stands for else if. An if ... elif ... elif ... sequence is a substitute for the switch or case statements found in other languages.

```
if marks>90:
   print('A')
elif marks>80:
   print('B')
elif marks>70:
   print('C')
else:
   print('F')
```

Note: The ':' after the condition is very important.

Loops

Loops are used to repeat a set of instructions repeatedly till a condition is met or is not met. The two keywords associated with loops are for and while. Finding sum of first 10 numbers using while loop can be done as following:

```
i = 1
s = 0
while i<=10:
    s += i
    i += 1
print(s)
```

Range is a generator function in which the first parameter signifies the starting number of the sequence, numbers are generated up to but not including the value in the second parameter. The third parameter is optional and signifies the difference between each number in the sequence if no value is provided, the value is 1 by default.

```
for i in range(1,10,2):
    print(i)
```

The above code is to print odd numbers from 1 to 9. The for loop initialises i to each of the values in the list generated by the range function. We can manually pass a list in place of the range function as well. This is useful when we need to access the contents of a list or any other iterable object.

Indentations

In Python the blocks of code are not denoted by {} but using indentation or spacing. The spacing used for a block can be anything (2 tabs or 2 spaces etc) but the starting indentation and closing indentation has to be same. It is good practice to keep the number of spaces used for indenting constant through-out your program.