**Python FLOW CONTROL**

**Indentation**

* Python works on blocks of code
* Python doesn’t use delimters around code block
* Python uses indentation to indicate when a new block starts.

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**If Statement**

* It is a conditional statement used for decision making in python. In if statement, the test condition is evaluated and the statements inside the if block are executed only if the evaluated condition is true. In if statement, we have only one set of statements to select based on the test condition. So, it is also called as One-way selection statement.

**Syntax**

If(condition):

Statement1:

……..

Statementn

**If else Statement**

* It is a conditional statement used for selection between two set of statements based on the evaluation of test condition. The statements inside the **if** block are executed only if the evaluated condition is true. Otherwise statements inside the **else** block are executed. As we have two set of statements to select based on the test condition, it is also called as **Two-way selection**statement.

**Syntax**

If(condition):

Statement1:

……..

Statementn

else:

Statement1:

……..

Statementn

 

**else if**

It is a conditional statement used for selection between multiple set of statements based on multiple test conditions. The various test conditions are provided inside each if statement. Whenever the test condition is evaluated as True, the statements inside the corresponding **if** block are executed and the control comes out of the else-if ladder. If none of the test conditions are evaluated as True, the statements inside the **else** block are executed. As we have multiple set of statements to select based on the test conditions, it is also called as **multi way selection** statement.

In **else-if** ladder the conditions are evaluated from the top of the ladder downwards. As soon as a true condition is found, the statement associated with it is executed skipping the rest of the ladder.

**Syntax**

If(condition):

Statement1:

……..

Statementn

elif(condition):

Statement1:

……..

Statementn

else:

Statement1:

……..

Statementn



**Nested If**

An if statement within another if statement is known as **nested if** statement. Similarly, any decision logic can be written within an else statement also.

Syntax

 

**If with Conditional Operators**

* Less than <
* Less than or equal <=
* Greater than >
* Greater than or equal >=
* Equal to ==
* Not Equal to !=



**If With Booloean Expression**

* **True**
* **False**
* not True means Fasle
* not False means True



**If Truthy Values**

* Any object can be tested for truth value for use in an if or while condition or as operand of Boolean operations.
* By Default objects consider as True unless its class unless its class defines either a \_bool\_() method that returns false or a \_len\_() method that returns zero when called with the objects.
* Constant defined to be a false: None and false
* Zero of any numeric type: 0 0.0 0j Decimal(0) Fraction(0,1) consider as false
* Empty sequaence and colections are false: ‘ ’ () {} [] set() range(0)



**If with In and not In operator**

* Case sensitive so use **casefold()**
* **If( “Letter” in “Black\_Letter”):**
* **If (“Letter” not** in “Black\_Letter”):
* If(“Letter” in “Black\_Letter”.casefold()):

**Loop Statement**

**for Loop**

* A for loop works by iterating over some set of values. It assigns each of the values one by one to one or more varaibles.It then executes block of code once for vaule.
* Set of values comes form **sequence** or some other **iterable** objects Sequence is also an iterable. In simple terms if you can use it with a for loop, then its iterable.
* Sequemce, Range is also iterable

Syntax

for <user defined vaiable> in <sequence if values>:

print(“”Answer will be:”, user define variable)

for number in 1,2,3,4,5: #number = 1

print(number)



**For loop with range**

for i in range(0,20): #range starts from 0 to 19 not 20

print(i)



* range(1,20) 1 to 19
* range(20) defa starts from 0 & end with 19
* range(10, 1) no output

Step in range

Range(0, 10, 2) #starts with 0 & incremented by 2

Negative step in range

Range(10, 0, -2) #starts with 10 decremented by 2

**Nested For Loop**

for (I in range(1, 10): # for I =1

for j in range(0,10): j = 0, 1 to 9

Print (“{0} x {1} is {2}”.format(j, I, i\*j))

**For Loop with Continue(skiping the loop)**

* Sometimes you may need to interrupt the normal flow of a loop to either jump out of it completely or stop the current iteration and move on to the next one**.**
* **A list in python is an ordered sequence of values enclosed in square brackets.**

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**For Loop with break [till] used for searching**

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* **None** is constant used to assign it in the variable
* Variable = None

**While Loop**

* Loop as long as some condition is true and stop when it becomes false.
* The condition can be anything than can evaluate to true or false
* One of the important features of while loops is that they used when you cant determine in advance how many times you need to loop.
* While loop is keep reading until there is no more data left

Syntax

While <condition>:

Execute the block of code

  

**While Loop with RANDOM & IMPORT**

**Random** Module

Its an external module, so we need to import it into our program using an import statement.

When you want to use objects from the python standard library you import them usually at the start of your program.

Ranint() function return integer