Class: 02

Required Software

- Python 3 (Latest Version)
- Jupyter Notebook
- Anaconda

Class: 02

All about Input & Output Function in Python

- We use the print() function to output data to the standard output device (screen).
- The input() method reads a line from input, converts into a string and returns it.

Class: 02

All about Python Variables

- Variables are like a container to storing data.
- Compare to other programming languages, Python has no command for declaring a variable.
- A variable is created the moment you first assign a value to it.

Example:
Var = 10
Var2 = 100

Example:
Var = ‘data science’
Var2 = ‘study mart’

List of Keywords in Python: https://www.programiz.com/python-programming/keyword-list

Class: 02

All about Python Variables

A variable can have a short name (like x and y) or a more descriptive name.

- Keywords can’t use as a variable.
- A variable name must start with a letter or the underscore (_) character.
- A variable name cannot start with a number.
- A variable name can only contain alpha-numeric characters and underscores (A-Z, 0-9, and _).
- Variable names are case-sensitive (x, X, _x are three different variable).

Valid Example:

```
Var = 10
Var2 = 100
_var = 20
Var_2 = 10
V1a2r3 = 30
My_name = ‘shakil’
```

Invalid Example:

```
9Var = ‘data science’
Var-2 = ‘study mart’
&var = 20
My name = ‘shakil’
```

Class: 02

All about Python Variables

- Multiple Variables:
  - x, y, z = “Data", “Science", “Smart“ -> Valid
  - x, y, z = “Data", “Science“ -> Invalid
- Comments:
  - Single Line
  - Multiple Line

Class: 02

All about Python Variables

- Multi Word Variable Name
  - camelCaseVar
  - PascalCaseVar
  - snake_case_var

- Global Variable: Variables that are created outside of a function are known as global variables. Global variables can be used by everyone, both inside of functions and outside.

- Local Variable: Variables that are created inside of a function are known as local variables. local variables can be used by inside of function.

Class: 02

All about Python Strings

X = ‘Data Science’
Y = ’10’
Z = Something

- String Formatting
- String Concatenation

Condition: if, elif, else

Python supports the usual logical conditions from mathematics:

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

Condition: if, elif, else

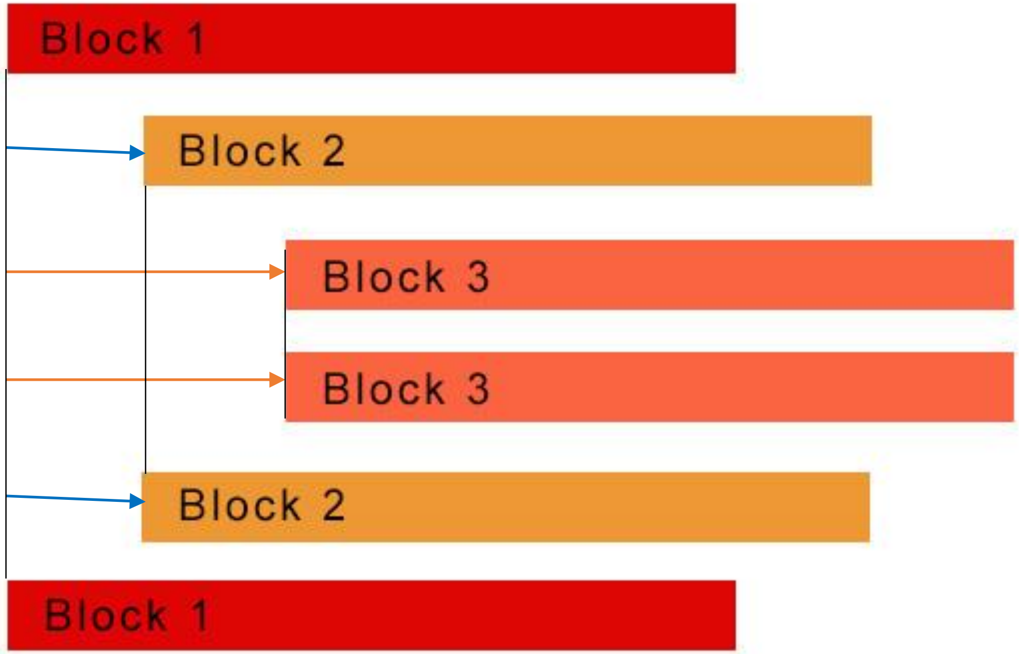
Python Conditions: If, else, elif

```
x = 50
y = 100

if y > x:
  print(“y is greater than x")
elif x == y:
  print(“ x and y are equal")

else:
  print(“ x is y greater than y ")
```

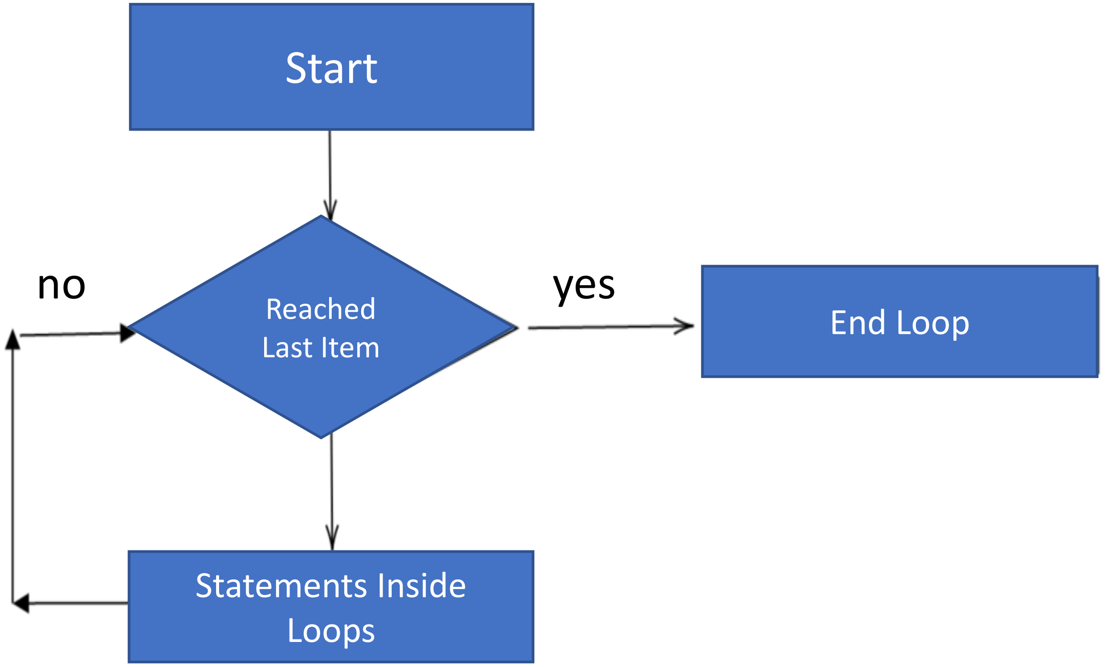
Class: 02

Condition: if, elif, else

Python Indentation Rules



For Loop


Start
no
Reached Last Item
yes
End Loop
Statements Inside Loops

Example

```
subjects = [“ai", “data science", “statistics“, ”math”]
for x in  subjects :
        print(x)
```

Output:

```
“ai“
“data science“
“statistics“
”math”
```

Class: 02

All about Python Data Structure

In Python, dictionaries are a Central Data Structure. Dictionaries store an arbitrary number of objects, each identified by a unique dictionary key. Python has four basic data structures namely -

- List
- Tuple
- Set
- Dictionary
- Data Frame

Class: 02

All about Python List[]

- Ordered
- Changeable
- Allow Duplicates

```
L1 = [ 'data’, 'science’ ]
L2 = [ 1, 40, 300, ’shakil’, True, False ]
```

All about Python Tuples()

- Ordered
- Unchangeable
- Allow Duplicates

L1 = ('data’, 'science’)
L2 = (1, 40, 300, ’shakil’, True, False)

60 days of python: https://www.youtube.com/watch?v=FZmPnTVOAR4&list=PLKdU0fuY4OFf7qj4eoBtvALAB_Ml2rN0V