

## MSC Classes | Techjaguar Academy Rewa

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## PYTHON NOTES

#### TOPICS COVERED :-

- Introduction To Python
- Print() and Input()
- Statement and Comments
- Keywords and Identifiers
- Variable & DataTypes
- TypeCasting
- Operators
- Control Statements
- List

# Classes

## Introduction To Python :-

## What Is Python ?

- Python is a high-level, general-purpose programming language.
- It Was Created By Guido Van Rossum And Intially Released In 1991.

## It is used for :

- Web development (server side)
- Software development
- Mathematics
- System scripting

## What can python do ?

- Python can used in server to create web application
- Python can connect to database system
- It can also read and modify file
- Pyhon can be used to handle big data and perform mathematics

## Why python ?

- Python work on different platform like window mac linux raspberry pi etc.
- Python has a simple syntax similar to the english language
- Python has a syntax that allows developers to write program with fewer lines than some other programming language
- Python runs on a interpreter system meaning that code can be executed as it is written.
- This mean that the prototyping can be very quick.
- Python can be created in a processional way an object oriented way or a functional way.
- The most recent major version is python 3.
- Python will be written in a text editor.
- It is possible to written on pycharm, idle, netbean, vs code, jupyter, etc.
- Extension of python is .py

## Print()And Input():-

## print() :-

- print() Is Used To Print Anything.
  - SYNTAX : print( Data ) → For Ex: print("Hello World")

NOTE :- PYTHON IS CASE SENSITIVE PROGRAMMING LANGUAGE

#### Input() :-

- input() Is an Inbuilt Function Which Is Used For Getting Input From User.
- SYNTAX : input ( Message ) > For Ex: input ("Your Input: ")

NOTE :- BY DEFAUL INPUT TAKEN BY INPUT() IS STRING.

## Statements and Comments :-

#### Statements :-

- <u>Simple Statements</u> → Any Line Of Code In Program [Single Line Of Code In Program]
- MultiLine Statements → Statement In Python Which Can Be Extended To 1 or More Line Using Parantheses(), Brashes{}, Sq. Bracket [],"",;,\.

→ When We Need To Write Long Statement and Can't Fit Into 1 Line Then We Can Use MultiLine Statement's Character.

Example :

FOR PRACTICE CLICK HERE

#### Comments :-

- Comments are used in program to explain code.
- Comments are ignored by python Interpreter.
- Comments can be used to make the code more readable.

## 1) Single Line Comment:-

- Comments starts with a #, and Python will ignore them
- It Can Only Extended upto Only Single Line
- Example:-

1. # This Is Single Line Comment

#### 2) Multi-Line Comment:-

- Comments Written Between """ And """
- It Can Be Extended To More Than 1 Line
- Example:-



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# Keywords and Identifiers :-

## Keywords →

- A python keyword is reserved word that can't be used to name variable, class, Function etc.
- Example: if, elif, else, or, not etc.

#### Identifiers →

• Identifiers in python are word that we used to Specify and declare variable.

- Identifiers are Case Sensitive
- Identifiers Names start With A-Z, a-z, .
- Identifiers Names can't start With digits .
- Python Keyword cannot use as Identifiers. [Ex.: else=5]
- Special Symbol Like @#% Cannot use in Idenfiers

## Variable and Datatypes:-

#### Variable →

- Variable are Container use for store Data Value
- Example :- a=10 [Here a is Variable]

## Assigning Value To Multiple Variable :

>> 1. x , y, z = "Python" , "HTML" , "CSS"

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#### Rules For Naming VariablesIn Python :

- The Name of variable must start with letter and .
- The variables names Can only Contain Alphanumerical characters and \_
- Acceptable : Age, \_age, B1, a\_1 etc.
- Unacceptable. lage, 1 age, 11=2 etc.
- It's Name are Case Senstive.

#### Datatypes +

Data stored in the variable has datatype associated with it.

#### There are Three basic DataTypes :

- Integer [int] : Whole Number Without Decimals → 23, 98, 378 etc
- Float: Numbers With Decimal  $\rightarrow$  2.4, 5.6, 3.0, 54.9 etc.
- String [str] : Group of Characters written inside double quotes → "Python", "76", "Hello" etc.

## Advance Data Types In Python :-

- Null/None
- Numerics → [Int, Float, Complex]
- List
- Set
- Tuples
- Range
- String

• Dictionary

NOTE: WE LEARN ALL THESE DATA TYPES LATER

## Typecasting :-

Typecasting in Python is the process of converting one data type to another data type.

## Methods To Change/Typecast Datatypes :-

- str() → To Change Data Into String Data Type
- int() > To Change Data Into Integers Data Type
- float() -> To Change Data Into Float Data Type

## Operators In Python:-

→ Operator are Special Characters they are used on operands which can be either Value or Variables.

## Types of Operator In Python :-

## Relational Operator :

- → It Is Comparing Operators.
  - >
  - <
  - =
  - !=
  - >=
  - <=

## Assignment Operator :

- $\rightarrow$  It Is Comparing Operators.
  - $\bullet$  = : Ex. x=2
  - += : Ex. x+=2 [x=x+2]
  - -= : Ex. x-=2 [x=x-2]
  - \*= : Ex. x\*=2 [x=x\*2]
  - /= : Ex. x/=2 [x=x/2]
  - %= : Ex. x%=2 [x=x\%2]

## Logical Operator :

- and : If All Operands Are True Then Result Is True Else Result Is False
- Or : If All Operands Are False Then Result Is False Else Result Is True
- not : If Operand Are True Then Result Is False and Vice-Versa.

## Control Statement: -

ightarrow Control Statement are used to control The Flow Of Execution of Instruction of Program.

#### Conditional Statement :

- ightarrow Conditional Statement are design to add condition based Instruction To Program
- → They Can Be Implemented Using :
  - if : It Is Used To Give Single Condition SYNTAX :- if \_condition\_ : Code

Example :

```
a = 10
b = 10
if a==b:
    print("It Is Equal")
```

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• if...else: It Is Used To Give Double Condition

SYNTAX: - if \_condition\_:

Code

Else:

Code

Example :

```
a = 10
b = 10
if a==b:
    print("It Is Equal")
else:
    print("It Is Not Equal")
```

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Example :

```
a = 10
b = 10
if a==b:
    print("It Is Equal")
elif a==0:
    print("It Is Zero")
else:
    print("It Is Not Equal")
```

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• Nested if : It Is Used To Give Condition Under Existing

Condition

SYNTAX :- if \_condition\_ :

Example :

```
a = 10
b = 10
if a==b:
    if a==10:
        print("It Is Equal and 10 Both")
```

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## Looping or Itterative Statement :

- → They are Use To repeat a block of statement or set of instruction to a specific number of time until condition is met.
- → They are Implemented Using For And While Loop.
  - For Loop: To Itterate across the series, Such as list, dictionaries, sets, range or even string, a for loop is employed.

Example :

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• While Loop: It Checks the condition first. Run the conditional code If it is true.

SYNTAX : while (condition):
Code



Example :

```
a=1
while(a==1):
    print("It Is True")

# output : It Is True ("It will Print Again and Again Until Loop
Get Break")
```

## List:-

→ List Are Used To Store Multiple Types Of Data In Single Variable.

#### How To Create List?

- → The List In Python are Created Using Square Bracket [].
- $\rightarrow$  Example : list1 = [1,"Hello",9.5]

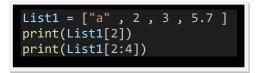
#### How To Access Element Of List ?

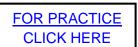
→ Using List Index : Each Item Of List has an Index Number and Python Allows Positive and Negative Indexing For Accessing Individual.

For Example : list[1] etc.

→ We Can Also Access Element Within Range By Giving Range

For Example : list[1:5]





NOTE: IN PYTHON INDEXING START FROM 0.

FOR EXAMPLE : ["A", "B", 2, 7.9]  $\rightarrow$  Here A is In 0 index.

#### List Methods :

```
list1 = ["a","b",2,2.6]
list1.append("c")
print(list1)
list1.insert(2,"d")
print(list1)
list1.extend(["f","g"])
print(list1)
list1.remove("a")
print(list1)
list1.pop(2)
print(list1)
list1.clear()
print(list1)
list1[2]=6
print(list1)
```

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