

## ▼ Python Basic

Q.1 what is python and why it is popular ?

- Answer : Python is a high level programing language. Basically is interpreter language. It is popular because of simplicity, contain large libraries, huge versality, its beginner friendly, syntax is very clear, Vast user base (use everywhere), Huge library support.

Q.2 What is an interpreter in Python ?

- Answer : Interpreter is basically executes the statement or code line by line

Q.3 What are pre-defined keywords in Python?

- Answer : are words pre-defined keywords that are some words which already pre defined in python and reserve some special words for doing task or execution in python. words are like if, import, print and that words can not be variable for stable execution of code.

Q.4 Can keywords be used as variable names ?

- Answer : No, keyword can not be used as variables.

Q.5 What is mutability in Python ?

- Answer : Mutability is about changes in created data

Q.6 Why are lists mutable, but tuples are immutable ?

- Answer : lists are mutable, but tuples are immutable because both are different purpose. and its python data structure.

Q.7 What is the difference between "==" and "is" operators in Python ?

- Answer : "==" checks value equality, while "is" checks identity of variable.

Q.8 What are logical operators in Python ?

- Answer : Logical operators are (and, or, not) where we find result in boolean. its used in condition.

Q.9 What is type casting in Python ?

- Answer : Type casting in Python is converting one data type into another data type.

Q.10 What is the difference between implicit and explicit type casting ?

- Answer : Implicit type casting is automatic conversion done by Python, while explicit type casting is manual conversion done by the programmer.

Q.11 What is the purpose of conditional statements in Python ?

- Answer : The purpose of conditional statements in Python is to execute different code based on whether a condition is true or false.

Q.12 How does the elif statement work ?

- Answer : elif statement is a part of if conditional statement so basically in elif statement having multiple condition. This statement checks every condition line by line and if first condition is true then rest all conditions are skipped. If false then check second and goes on.

Q.13 What is the difference between for and while loops ?

- Answer : A for loop is used for a fixed number of iterations, while a while loop runs as long as a condition remains True.

Q.14 Describe a scenario where a while loop is more suitable than a for loop

- Answer : A for loop is used for a fixed number of iterations and while a while loop used in infinite or you don't know how many times it needs to iterate. e.g. in login password sometimes yes there is only three attempts many places but it's for example. Basically while loop continues until the condition is satisfied.

```
#Q.1 Write a Python program to print "Hello, World!
print("Hello, World!")
```

```
Hello, World!
```

```
#Q.2 Write a Python program that displays your name and age
name = "Ajay Gujaratiya"
age = "28"
print("Name : ", name)
print("Age : ", age)
```

Name : Ajay Gujaratiya  
Age : 28

```
# Q.3 Write code to print all the pre-defined keywords in Python using the keyword library
import keyword
print(keyword.kwlist)

['False', 'None', 'True', 'and', 'as', 'assert', 'async', 'await', 'break', 'class', 'continue', 'def', 'del', 'elif', 'else', 'if', 'isinstance', 'lambda', 'nonlocal', 'not', 'or', 'raise', 'return', 'try', 'while', 'with', 'yield']
```

```
#Q.4 Write a program that checks if a given word is a Python keyword.
word = input("Kindly give a word: ")
if word in keyword.kwlist:
    print("Given word is in python keyword")
else:
    print("Given word is not in python keyword")
```

Kindly give a word: hi  
Given word is not in python keyword

```
#Q.5 Create a list and tuple in Python, and demonstrate how attempting to change an element works differently for each
my_list = [10,20,30,40,50]
my_tuple = (11,21,31,41,51)

#attempt to chenge in list
my_list[0]=21
print("This is updated list :", my_list)

#attenot to change in tuple
my_tuple[0] = 10
print(my_tuple)
```

This is updated list : [21, 20, 30, 40, 50]

```
-----  
TypeError                                 Traceback (most recent call last)
/tmp/ipython-input-1213183573.py in <cell line: 0>()
      8
      9 #attenot to change in tuple
----> 10 my_tuple[0] = 10
     11 print(my_tuple)
```

TypeError: 'tuple' object does not support item assignment

#Q.6 Write a function to demonstrate the behavior of mutable and immutable arguments.  
basically this quetion is i dont understand but i try my best i also use ai but ai give something outof syllabus so i try below

```
my_list = [1, 2, 3]
my_string = "Hello"
print(my_list)
print(my_string)
my_list[0] = 24
print(my_list)
print(my_string[1])
my_string[1]= "C"
print(my_string)
```

[1, 2, 3]  
Hello  
[24, 2, 3]  
e

```
-----  
TypeError                                 Traceback (most recent call last)
/tmp/ipython-input-2701156535.py in <cell line: 0>()
      7 print(my_list)
      8 print(my_string[1])
----> 9 my_string[1]= "C"
     10 print(my_string)
```

TypeError: 'str' object does not support item assignment

Next steps: [Explain error](#)

```
#Q.7. Write a program that performs basic arithmetic operations on two user-input numbers
print("-----Basic arithmetic operations-----")
num1 = float(input("Enter your number : "))
```

```

num2 = float(input("Enter your number : "))

print(num1+num2) #addition
print(num1-num2) #subtract
print(num1*num2) #multiplecation
print(num1/num2) #division
print(num1//num2) #floor division

```

```

-----Basic arithmetic operations-----
Enter your number : 25
Enter your number : 10
35.0
15.0
250.0
2.5
2.0

```

#Q.8. Write a program to demonstrate the use of logical operators.

```

x = 10
y = 20

print(x > 5 and y > 0)    # True
print(x > 15 or y > 0)   # True
print(not(x > 1))        # False
if x > 5 and y > 5:
    print("yes both are the above 5")
else:
    print("no both are not above 5")

```

```

True
True
False
yes both are the above 5

```

#Q.9. Write a Python program to convert user input from string to integer, float, and boolean types.

```

a = input("Kindly enter your desire string : ")
print(type(a))
print("convert to int", int(a))
print("convert to float", float(a))
print("convert to boolean", bool(a))

```

```

Kindly enter your desire string : 45
<class 'str'>
convert to int 45
convert to float 45.0
convert to boolean True

```

#Q.10 Write code to demonstrate type casting with list elements

```

list1 = [15,25,35,45,55]
type(list1[0])
float(list1[0]) #its convert list 1st element to float

```

```

15.0

```

#Q.11. Write a program that checks if a number is positive, negative, or zero.

```

w = float(input("Enter number for check positive, negative or zero :"))
if w > 0:
    print("Number is positive")
elif w < 0:
    print("Number is negative")
else:
    print("This number is zero")

```

```

Enter number for check positive, negative or zero :0
This number is zero

```

#Q.12. Write a for loop to print numbers from 1 to 10.

```

for a in range(1,11):
    print(a)

```

```

1
2
3
4
5

```

```
6  
7  
8  
9  
10
```

```
#Q 13. Write a Python program to find the sum of all even numbers between 1 and 50.  
sum = 0  
for i in range(0,51):  
    if i % 2 == 0:  
        sum += i  
print("Here is sum of all even numbers between 1 and 50: ",sum)
```

```
Here is sum of all even numbers between 1 and 50:  650
```

```
#Q 14. Write a program to reverse a string using a while loop.  
s = input("Enter a string: ")  
i = len(s) - 1  
  
while i >= 0:  
    print(s[i], end="")  
    i -= 1
```

```
Enter a string: hello  
olleh
```

```
#Q 15. Write a Python program to calculate the factorial of a number provided by the user using a while loop  
num = int(input("Enter a number: "))  
fact = 1  
i = 1  
  
while i <= num:  
    if  
        fact = fact * i  
    i += 1  
  
print("Factorial of", num, "is:", fact)
```

```
Enter a number: 0  
Factorial of 0 is: 1
```

```
Start coding or generate with AI.
```