

Python interview questions2

1. what are logical operators ? how many are they ?

Logical operators: Logical operators are used to combine conditional statements and returns the result as boolean values(True or False).They are mainly used in decision-making statements like if,while,etc

Types of logical operators:

There are three main logical operators in python:

- 1.AND--→returns True if both conditions are True.
- 2.OR----→returns True if atleast one condition is True.
- 3.NOT-→reverse the result:True becomes False and vice versa

2. what is difference between the logical AND & logical OR ?

Logical AND:

- Returns True only if both conditions are True.
- If any one condition is False,the result is False.

Ex: X=5

Print(x>2 and x<10)

True

Logical OR:

- Returns True if atleast one condition is True
- Returns False only if all conditions are False.

Ex: x=5

Print(x<2 or x<10)

True

3.what are membership operators ? how many are they ?

Membership operators: Membership operators are used to check whether a value exists in a sequence like(string,list,tuple).It returns the boolean values

Types of membership operators:

- 1.in-→checks if the value is present
- 2.not in-→checks if the value is not present

4. what is difference between in and not in operators?

in operator:

- Checks if a value exists in a sequence (str,list,tuple),returns True if the value is found or returns False if the value is not found
Ex: "a " in "apple"-->True ('a' is in the string)

not in operator:

- Checks if a value does Not exist in a sequence,returns True if the value is Not found,returns False if the value if found
Ex:"x" not in "apple"-->True ('x' not in the string)
"a" not in "cat"-->False('a' is in the string)

5. what is the difference between == and != operators ?

== and != both are comparisinal operators used to compare two values or variables.

== operator(equal to):

- Checks if two values are equal,returns True if both sides of values are equal,otherwise False.
Ex:a=2
b=2
print(a==b)-->True

!= operator(Not equal to):

- Checks if two values are not equal,returns True if both sides of values are different otherwise False
Ex:x=10
Y=20
Print(x!=y)->True

6. what are conditional statements in python ? write a syntax and simple example ?

Conditional statements are used to make decisions in a program.They allow us to execute certain blocks of code only when specific conditions are true.

Types of conditional statements:

- 1.if statement
- 2.if – else statement
- 3.if –elif-else statement
- 4.Nested if

If statement: executes a block of code only if the condition is true.

Syntax:

```
If condition:  
    Stmt
```

If – else statement: executes one block if condition is true, and another if it's false

Syntax:

```
If condition:  
    Stmt  
Else:  
    Stmt
```

If-elif-else statement: checks multiple conditions one by one.

Syntax:

```
If condition1:  
    Stmt  
Elif condition2:  
    Stmt  
Else:  
    Stmt
```

Nested- if : if inside another if

Syntax:

```
If condition1:  
    If condition2:  
        stmt
```

example:

```
num=int(input("enter the number:"))  
if num%2==0:  
    print("number is divisible by 2")  
else:  
    print("number is not divisible by 2")
```

output: enter the number:4
number is divisible by 2

7.write a program to demonstrate the if-else conditions ?

Program: check if a character is a vowel

```
c=input("enter the character:")  
vowels=("a","e","i","o","u")  
if c in vowels:  
    print("c is a vowel")  
else:  
    print("c is not a vowel")
```

output:

enter the character:'e'
'e' is a vowel

8. write if-else-if-else ladder with a simple example ?

Program: find the largest among three numbers

```
a=int(input("enter a value:"))  
b=int(input("enter b value:"))  
c=int(input("enter c value:"))  
if a>b and a>c:  
    print(" a is largest number")  
elif b>c and b>a:  
    print("b is largest number")  
else:  
    print("c is largest number")
```

output:
enter a value:5
enter b value:3
enter c value:2
a is largest number

9. write a program to demonstrate how nested conditions work in python ?

Program: offer eligibility

```
user=input("Is the user is a first time buyer?(yes/no):")
```

```
cart=int(input("enter the cart total value:"))
```

```
if user=="yes":
```

```
    if cart>=1000:
```

```
        print("30% discount")
```

```
    else:
```

```
        print("10% discount")
```

```
elif user=="no":
```

```
    if cart>=2000:
```

```
        print("15% discount")
```

```
    else:
```

```
        print("no discount")
```

```
else:
```

```
    print("Discount based on cart value and must be a first time buyer")
```

output:

```
Is the user is a first time buyer?(yes/no):yes
```

```
enter the cart total value:1500
```

```
30% discount
```

10. what is indentation in python ? what is importance of it in python ?
explain with an example?

Indentation in python refers to the whitespace at the beginning of a line of code. It is used to define the blocks of code. Indentation is part of the syntax and logic of the program.

Importance of indentation in python:

1. Defines code structure- python uses indentation to group statements together.

2. Required for conditional statements, loops, functions, etc.

3. Missing or incorrect indentation causes Indentation Error.

4. Improves code readability

5. 4 spaces are used for each indentation level.

11. what is error and how many type of errors do you know?

An error is a problem in a program that stops it from running correctly. The interpreter raises an exception or error message if a program is went wrong

Types of errors in python:

Python errors are divided into 3 types:

1.syntax errors:These occur when write code that doesn't follow python's rules.detected before the program.

Ex: if 5>2

```
Print(True)
```

Output:syntax error-missing colon

2.Runtime errors:this happens while the program is running,invalid operation

Error type	example
Zero division error	print(5/0)
Value error	int("abc")
Index error	mylist=[1,2] Print(mylist[2])
Type error	print("5"+10)
Name error	print(x) x is not defined

3.logical error:wrong logic by programmer,which do not produce errors but give wrong output.

12. write an example each to demonstrate syntax error and name Error and keyError ?

Name error: it occurs when we use a variable or function name that hasn't been defined.

Example:

```
Name="raj"  
Print(name)
```

Output: Name error:name is not defined

Syntax error: it occurs when the code is not follow the python rules(missing colon,brackets)

Example:

```
If 10>5
    Print("hello")
```

Output:syntax error:expected ':'

Key error: it occurs when we try to access a dictionary key that doesn't exist.

Example:

```
My_dict={"name": "raj", "age": 22}
Print(my_dict["city"])
```

Output:key error : 'city'

13. what is loop and how many types of loops are there in python?

A loop is used to repeat a block of code multiple times.It helps run the same code without writing it again and again.

Types of loop:

Python has two main types of loops

- 1.for loop-iterating over a sequence
- 2.while loop

14. write an example for for loop using list?

Example: print all even indices values from lists and push to new list

```
num=[20,45,63,4,10,24,42]
```

```
n=[]
```

```
for i in range(0,len(num)):
```

```
    #print(i)
```

```
    if i%2==0:
```

```
        #print(num[i])
```

```
        n.append(num[i])
```

```
print("new list:",n)
```

output: new list: [20, 63, 10, 42]

15. write an example for for loop using str and dict and tuple ?

For loop using string:

Example: print all characters in a string

```
name="jhansi"
```

```
for i in name:
```

```
    print(i)
```

output:

j

h

a

n

s

i

for loop using dictionary:

example:

```
stu={"id":560,"name":"shainy","branch":"CSE","year":2025}
```

```
for i in stu:
```

```
    print(i,":",student[i])
```

output:

id:560

name:shainy

branch:CSE

year:2025

for loop using tuple:

example:

```
num=(10,20,30)
```

```
for num in numbers:
```

```
    print("numbers:",num)
```

output:

numbers: 10

numbers: 20

numbers:30