1. Why do we call Python as a general purpose and high-level programming language?

[Python](https://en.wikipedia.org/wiki/Python_(programming_language)) was conceived as a language that emphasized code readability and extensibility. The former allowed non-software engineers to easily learn and write computer programs, while the latter allowed domain specialists to easily create libraries suited to their own use cases. Its design philosophy emphasizes [code readability](https://en.wikipedia.org/wiki/Code_readability) with the use of [significant indentation](https://en.wikipedia.org/wiki/Off-side_rule). For these reasons, Python has been used across a wide range of domains and considered one of the general-purpose programming languages.

Python is [dynamically-typed](https://en.wikipedia.org/wiki/Type_system#DYNAMIC) and [garbage-collected](https://en.wikipedia.org/wiki/Garbage_collection_(computer_science)). It supports multiple [programming paradigms](https://en.wikipedia.org/wiki/Programming_paradigm),including [structured](https://en.wikipedia.org/wiki/Structured_programming) (particularly [procedural](https://en.wikipedia.org/wiki/Procedural_programming)), [object-oriented](https://en.wikipedia.org/wiki/Object-oriented_programming) and [functional programming](https://en.wikipedia.org/wiki/Functional_programming). It is often described as a "batteries included" language due to its comprehensive [standard library](https://en.wikipedia.org/wiki/Standard_library).

1. Why is Python called a dynamically typed language?

In python a variable does not have a stated type within the source code, but can store whatever data is presented to them at the time. The type of a variable is therefore determined dynamically at run time.

1. List some pros and cons of Python programming language?

**Pros:**

* Simple and easy-to-understand syntax.
* Object Oriented Programming-driven.
* Supports imperative and functional programming.
* Extensive library.
* Supports multiple platforms (Web and mobile computing).
* Python is easily extensible with *C*/*C*++/Java code.
* Open Source and large community support.

Cons:

* Python is slow.
* Weak in mobile computing.
* Has limitations with database access.
* Despite being open source, there is no commercial support point.
* Since Python is dynamic, more errors show at run-time.

1. In what all domains can we use Python?

* Web Development
* Networking and Internet
* Machine Learning
* Scientific Computation

1. What are variable and how can we declare them?

Variables are containers for storing data values. Python has no command for declaring a variable. A variable is created the moment you first assign a value to it.

Eg : x = 5 #will become an integer variable when 5 is assigned.

Str\_name = ‘Nikhil’ #will become string when data is assigned within the inverted commas.

1. How can we take an input from the user in Python?

We can take the input directly to the variable name using the input() function as shown below:

name = input(‘Enter your name:’) #will prompt to enter the name and accept the input

1. What is the default datatype of the value that has been taken as an input using input() function?

The default data type will be string.

1. What is type casting?

The conversion of one data type into the other data type is known as type casting in python or type conversion in python.

1. Can we take more than one input from the user using single input() function? If yes, how? If no, why?

Yes, using [split()](https://www.geeksforgeeks.org/python-string-split/) method. This function helps in getting multiple inputs from users. It breaks the given input by the specified separator. If a separator is not provided then any white space is a separator. Generally, users use a split() method to split a Python string but one can use it in taking multiple inputs.

Example:

x,y = input("Enter 2 values :").split()

1. What are keywords?

Python keywords are reserved words. They are used by python interpreters to understand the program. Keywords define the structure of programs.

1. Can we use keywords as a variable? Support your answer with reason.

We can’t use keywords to name program entities such as variables, classes, and functions.  It’s because keywords have predefined meanings.

1. What is indentation? What's the use of indentation in Python?

Python indentation refers to adding white space before a statement to a particular block of code. In another word, all the statements with the same space to the right, belong to the same code. Indentation is a very important concept of Python because without properly indenting the Python code, there will be Indentation-Error and the code will not get compiled.

1. How can we throw some output in Python?

By using the print() function.

Example: print(“X”) will give the output as X.

1. What are operators in Python?

Operators are used to perform operations on variables and values.

Example of operators are +, -, \*, /.

1. What is difference between / and // operators?

The ‘/’ operator is used for float or decimal division whereas the ‘//’ operator is used for integer division.

1. Write a code that gives following as an output.

iNeuroniNeuroniNeuroniNeuron

print("iNeuroniNeuroniNeuroniNeuron")

1. Write a code to take a number as an input from the user and check if the number is odd or even.

x = int(input("Enter a number : "))

if x%2 == 0:

    print("Number is even !!")

else:

    print("Number is odd !!")

1. What are boolean operator?

The operators such as not, and, or that are used to perform logical operations in Python, with results of the operations involving them being returned in TRUE or FALSE.

1. What will the output of the following?

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1 or 0 -> gives TRUE

0 and 0 -> gives TRUE

True and False and True -> gives FALSE

1 or 0 or 0 -> gives TRUE

```

1. What are conditional statements in Python?

Conditional statements are also called decision-making statements. We use those statements while we want to execute a block of code when the given condition is true or false.

Type of condition statement in Python:

* If statement.
* If Else statement.
* Elif statement.
* Nested if statement.
* Nested if else statement.

1. What is use of 'if', 'elif' and 'else' keywords?

Python uses the ‘if’ keyword to implement decision control. Along with the ‘if’ statement, the ‘else’ condition can be optionally used to define an alternate block of statements to be executed if the boolean expression in the ‘if’ condition evaluates to False. The ‘elif’ condition is used to include multiple conditional expressions after the ‘if’ condition or between the ‘if’ and ‘else’ conditions.

1. Write a code to take the age of person as an input and if age >= 18 display "I can vote". If age is < 18 display "I can't vote".

age = int(input("Enter your age : "))

if age >= 18:

    print("You can vote!!")

else:

    print("You cannot vote!!")

1. Write a code that displays the sum of all the even numbers from the given list of numbers = [12, 75, 150, 180, 145, 525, 50].

Ans.

numbers = [12, 75, 150, 180, 145, 525, 50]

sum = 0

for x in numbers:

    if x%2 == 0:

        print(x)

        sum = sum + x

print("The sum of even numbers is : ", sum)

1. Write a code to take 3 numbers as an input from the user and display the greatest no as output.

Ans.

x = int(input("Enter the 1st number:"))

y = int(input("Enter the 2nd number:"))

z = int(input("Enter the 3rd number:"))

if x>y and x>z:

    print("The largest is : ", x)

elif y>x and y>z:

    print("The largest is : ", y)

else:

    print("The largest is : ", z)

1. Write a program to display only those numbers from a list that satisfy the following conditions

- The number must be divisible by five

- If the number is greater than 150, then skip it and move to the next number

- If the number is greater than 500, then stop the loop

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numbers = [12, 75, 150, 180, 145, 525, 50]

```