**INTERVIEW QUESTIONS**

### 1. What is Python?

### A. Python is a high-level, interpreted programming language. And it is designed to be easy to read and write, with a focus on simplicity and readability. Python has a vast standard library, making it capable of performing many tasks directly without the need for additional modules or packages.

**2. What is Variable? Why is it called Variable?**

A. variable is a named memory location that holds a value. The contents of a variable can change or vary over time; this is why it’s called a variable.

3. **How to add multi line comment and why are they added?**

A . Multiline comments are added using ‘’’ ‘’’’ , the comments are mentioned to describe the particular part of the code. So, other team members or if someone who has written the code has left the organization it will be easily understood for the person who overtakes that position.

4. **What is the use of Print statement in large code?**

A. Print is represented as print (“ ”). It is used to check the output of block of code which are part of large code, so if there are any errors troubleshooting will be easy.

5. **What are the basic things we need to take care while writing python?**

A. While writing Python code we need to take are of Indentation and upper case, lower case as python is case sensitive.

Indentation is compulsory in Python probably for readability purpose.

6. **What is Suite in Python?**

A. It is a block of code. Here, the print statements inside the if and else blocks are the code blocks.

if x > 0:

print("x is positive")

else:

print("x is not positive")

7. **What are different data types in Python?**

A. **String** – String is a set of characters represented in single or double quotes.

**Int** – 1 2 3 4 5 etc , integer numbers

**Float** – decimal point numbers – 1.5, 2.5

**Complex** – used to represent 1+2j

**List is** a collection of Items, It can have different data types.

Eg - list1 = [1, 2, 3, 4]

list2 = ["Hello", "World"]

**Lists** are mutable that means the values in the list can be changed.

**Tuple** is similar to a list, but tuples are immutable, which means the items in a tuple cannot be changed. Tuples are represented as

Eg - tuple1 = (1, 2, 3, 4)

tuple2 = ("Hello", "World")

**Dictionary** is a collection of key-value pairs. Each key in a dictionary is unique and associated with a value. For example:

Eg - dict1 = {"key1": "value1", "key2": "value2"}

And Dictionaries are mutable, which means the key-value pairs in a dictionary can be changed.

**Set** is a collection of unique items. Unlike lists, tuples, and dictionaries, sets do not have ordered collections. Sets are mutable, which means the items in a set can be changed. For example:

set1 = {1, 2, 3, 4}

**8. What are different ways to add tuples ?**

Using the '+' operator:

tuple1 = (1, 2, 3)

tuple2 = (4, 5, 6)

tuple3 = tuple1 + tuple

print(tuple3)

# Output: (1, 2, 3, 4, 5, 6)

Using the built-in function concat():

tuple1 = (1, 2, 3)

tuple2 = (4, 5, 6)

tuple3 = tuple1.\_\_add\_\_(tuple2)

print(tuple3)

# Output: (1, 2, 3, 4, 5, 6)

Using list comprehension:

tuple1 = (1, 2, 3)

tuple2 = (4, 5, 6)

tuple3 = tuple(x for t in (tuple1, tuple2) for x in t)

print(tuple3)

# Output: (1, 2, 3, 4, 5, 6)

**9. what is slice operator ? show with an example. (Any 2 will be fine)**

A. Slice is used to extract a portion of a sequence (e.g., string, list, tuple). It has the syntax sequence [start:stop:step].

# Extract the first two elements from the tuple

tuple2 = tuple1[0:2]

print(tuple2) # Output: (1, 2)

# Extract the second and third elements from the tuple

tuple3 = tuple1[1:3]

print(tuple3) # Output: (2, 3)

# Extract the third, fourth, and fifth elements from the tuple

tuple4 = tuple1[2:5]

print(tuple4) # Output: (3, 4, 5)

# Extract the elements from the tuple with a step of 2

tuple5 = tuple1[0:6:2]

print(tuple5) # Output: (1, 3, 5)

**10. Differences between Dictionary and List ?**

A. A Dictionary in Python is an unordered collection of key-value pairs, where each key must be unique. Here is an example of a Dictionary:

dict1 = {'name': 'John', 'age': 30, 'city': 'New York'}

Where as List in Python is an ordered collection of items. The items in a list can be of any data type. Here is an example of a List:

list1 = ['apple', 'banana', 'cherry']

**The main differences between a Dictionary and a List are:**

Data Organization: In a Dictionary, the data is organized in key-value pairs, whereas in a List, the data is organized in a linear manner.

Data Retrieval: In a Dictionary, the data can be accessed directly using the key. However, in a List, the data can only be accessed by their index.

Size: In a Dictionary, each key-value pair consumes more memory compared to a List, where each item consumes the same amount of memory.

Speed: Accessing elements in a List is generally faster than accessing elements in a Dictionary, because lists use integers as indices, which can be accessed directly. However, in Dictionaries, each key is hashed to an index, which may involve a slightly longer operation.

Duplicate Keys: A Dictionary cannot have duplicate keys, while a List can have duplicate items.

Order: In a List, the items maintain their insertion order, while in a Dictionary, the order of items is not preserved.

In general, the choice between a Dictionary and a List depends on the specific requirements of the program.

**11. What is Namespace in Python ?**

A. A Name space is a container that holds a set of identifiers (names) and maps them to corresponding objects (variables, functions,classes etc)

**12. What is Scope in Python?**

A.

**13. You have a class employee and employeeid and name are parameters, create a class and method to print these two values and finally create the object for the class to call that particular method.**

A.

**14.** Take two lists, say for example these two:

a = [1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89]

b = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13]

write a program that returns a list that contains only the elements that are common between the lists (without duplicates).

A.

**15. Write a Program to print the** string = "example" **in a single line**

e

x

a

m

p

l

e

A.

### 16. Let’s say I give you a list saved in a variable: a = [1, 4, 9, 16, 25, 36, 49, 64, 81, 100]. Write one line of Python that takes this list a and makes a new list that has only the even elements of this list in it.

### A.

**17. What are modules and packages, explain with examples.**

**A.**

**18. What is \_\_init\_\_ ?**

**A. \_\_init\_\_ is a constructor method in Python classes, responsible for initializing the object's attributes when the object is created.**

**19. What are Pass, Break and continue statement does in Python ? with a small example.**

A.

The **pass** statement in Python is a null operation. It is used as a placeholder when no statement is required.

Example:

while True:

pass

**In this example, the while loop will continue to run indefinitely because the pass statement is used as a placeholder.**

The **break** statement in Python is used to exit a loop (for or while).

Example:

for number in range(10):

if number == 5:

break

print(number)

**In this example, the loop will break as soon as the number becomes 5. The output will be the numbers from 0 to 4.**

The **continue** statement in Python is used to skip the remaining part of the loop and start the next iteration.

Example:

for number in range(10):

if number % 2 == 0:

Continue

print (number)

In this example, the loop will skip the numbers that are divisible by 2 and print the remaining odd numbers. The output will be the numbers from 1 to 9.

**20. How is Exceptional handling done in Python? Explain with a small example.**

A.

**21. Difference between for loop and while loop in Python ?**

A. While Loop:

In a while loop, the condition is tested before the execution of the block of code. The loop continues as long as the condition is true.

**Example**:

while condition:

# block of code

**For Loop:**

In a for loop, the loop iterates over a sequence (like a list, string, or range). The loop continues as long as there are items in the sequence.

**Example**:

for item in sequence:

# block of code

### 22. Write a program to check if the given number is palindrome or not.

A.

**23. Write a program to print the following pattern.**



**24. Find the largest prime factor of a given number.**

**A.**

**25. Difference between "is" and "=="**