Python Top 50 Interview Questions

Q1. What is python?

Ans. Python is a high-level, interpreted programming Language known for its simplicity and readability. It was created by Guido Van Rossum in 1991.

Q2. What is an Interpreted Language?

Ans. An interpreted language executes its statements line by line such as Python,Javascript,R,etc.

Q3. Explain the difference between python 2 and python 3.

Ans. Python 3 is the latest version of python. Python 3 has easier syntax rather than python 2. Python 2 was mostly used to become a DevOps Engineer. It is no longer in use after 2020. Pyhton 3 is used in a lot of fields like software Engineering, Data Science, etc.

http://www.linkedin.com/in/nikhil-kumawat31

Q4. How do you install third-party packages in python?

Ans. You can use the PIP Package manager. For example, to install the Requests library, run 'pip install requests'.

Q5. What is PEP 8?

Ans. PEP 8 is the python Enhancement Proposal, that provides coding style guidelines for writing readable and consistent python code.

Q6. What are python namespaces and scopes?

Ans. A namespace is a container that holds various identifiers(variables,functions,etc.). In contrast, scopes determine the visibility of these identifiers in different parts of your code.

Q7. How can you make comments in python?

Ans. You can create single-line comments using the hash symbol: # . for multi-line comments, you can enclose the text in triple quotes like this: """text""".

Q8. What are mutable and immutable data types?

Ans. Mutable data types can be changed after creation (e.g. lists). In other words, the memory location of the object remains the same, but its internal state can change. By contrast, immutable data types cannot (e.g. tuples). Instead, you must create a new object with the desired changes.

Q9. How do you differentiate between a tuple and a list?

Ans. Lists are mutable data types that consume more memory and are suitable for operations like insertion and deletion, though iterations are time-consuming. While tuples are immutable, consume less memory, and are efficient for element access with faster iterations.

http://www.linkedin.com/in/nikhil-kumawat31

Q10. What is the purpose of the 'if __name__ == "__main__":' statement?

Ans. This statement allows you to run certain code on the premise that the script is executed directly, not when it's imported as module.

Q11. Explain the concept of a generator in python.

Ans. Generators in python define iterator implementation by yielding expressions in a function. They don't implement 'iter' and 'next()' methods, thereby reducing various overheads.

Q12. Explain the difference between '==' and 'is'.

Ans. '==' checks if the value are equal 'is' checks if the objects are the same.

Q13. What is difference between a set and dictionary?

Ans. The set is an unordered collection of data types that is iterable, mutable and has no duplicates elements.

A dictionary in python is an ordered collection of data values, it stores data in key-value pair.

Q14. What is list comprehension? Give an example.

Ans. List comprehension is a syntax construction to ease the creation of a list based on existing iterable.

For example:

my_list = [I for I in range(1,10)]

http://www.linkedin.com/in/nikhil-kumawat31

Q15. What is lambda function?

Ans. A lambda function is an anonymous function. This function can have any number of parameters but, can have just one statement. For example:

a = lambda x,y : x*y

print(a(7,19))

Q16. What is the difference between iterable and iterator.

Ans. Iterable is an object, that one can iterate over. It generates an iterator when passed to iter() method. An iterator is an object, which is used to iterate over an iterable object using the __name__() method.

Every iterator is also an iterator, but not every iterable is an iterator in python.

Q17. What is the difference between a dynamically typed language and statically typed language?

Ans. Typed languages are those are either known by machine at compile-time or runtime.

Dynamically typed languages don't require predefined for variables and determine types at runtime based on values while statiscally typed languages require predefined for variables and determine types at compile-time.

Q18. What is docstring in python?

Ans. A docstring is used to associate documentation with python modules, functions, classes and methods. It provides a way to describe how to use these components.

Q19. What is the difference between a shallow copy and a deep copy?

Ans. A shallow copy creates a new instance with copied values and is faster, whereas a deep copy stores values that are already copied and takes longer but is more comprehensive.

http://www.linkedin.com/in/nikhil-kumawat31

Q20. What is a break, continue, and pass in python?

Ans. A break terminates the current loop or statement, 'continue' moves to the next iterations of the loop, and 'pass' is a placeholder for no operation within a statement block.

Q21. What are decorators?

Ans. Decorators are the syntax constructs that modify functions in python. They are often used to add functionality to existing functions without modifying their code directly.

Q22. Is tuple comprehension possible? If yes,how,and if not why?

Ans. Tuple comprehension is not possible in python, unlike list comprehension because tuple cannot efficiently be appended like a list.

Q23. What are *args and **kwargs?

Ans. '*args' and '**kwargs' allow passing a variable number of arguments to functions. They help create flexible functions that can handle varying numbers of input parameters.

Q28. What is scope in python?

Ans. Scope refers to where a variable can be accessed and modified. It includes local, global, module-level, and outermost scopes.

Q29. What is pip?

Ans. PIP stands for python installer package. It's a command-line tool that is used to install python packages from online repositories.

http://www.linkedin.com/in/nikhil-kumawat31

Q30. What is difference for loop and while loop in python?

Ans. The 'for' loop is generally used to iterate through the elements of various collection types such as list,tuple,set and dictionary. It is used when we have both start and end conditions whereas, the "while" loop is used when we have end conditions.

Q31. What are the different built-in data types in python?

Ans. Python offers various built-in data types, including numeric types(int,float,complex), sequence types (string,list,tuple,range), mapping types (dictionary), and set types.

Q32. How do you floor and ceil a number in python?

Ans. Python's math module provides the floor() function, which returns the largest integer not greater than the input. ceil() returns the smallest integer greater than equal to the input.

Q33. What is the difference between 'xrange' and 'range' functions?

Ans. 'Range()' and 'xrange()' are both used for looping, but 'xrange' was available in python 2 and behaves similarly to 'range()' in python 3.

Q34. Does python supports multiple inheritance?

Ans. Python does support multiple inheritences, unlike java. Multiple inheritences mean that a class can be derived from more than one parent class.

Q35. What is polymorphism in python?

http://www.linkedin.com/in/nikhil-kumawat31

Ans. It refers to occurrence of something in multiple forms. As part of polymorphism, a python child class has methods with the same as a parent class method.

Q36. Define encapsulation in python?

Ans. Encapsulation is process of wrapping up variables and methods into single entity is known as encapsulation. This puts restrictions on accesseing variables and methods directly.

Q37. How do you do data abstraction in python?

Ans. Data Abstraction is providing only the required details and hides the implementation from the world. It can be achieved in python by using interfaces and abstract classes.

Q38. What is slicing in python?

Ans. Python slicing is a string operation for extracting a part of the string, or some part of a list. With this operator, one can specify where to start the slicing, where to end, and specify the step.

Q39. What is __init__() in python?

Ans. Equivalent to constructor in oop terminology, __init__ is a reserved method in python classes. The __init__ method is called automatically whenever a new object is initiated. This method allocates memory to the new object as soon as it is created.

Q40. What are access specifiers in python?

Ans. Access specifiers (public,protected and private) determine the visibility of class members.

Public members are accessible everywhere,protected members are set within derived classes, private members are only within the class.

http://www.linkedin.com/in/nikhil-kumawat31

Q41. How do you handle exceptions in python?

Ans. You can attempt to use except blocks to handle exceptions in python. The code inside the try block is executed, if an exception occurs, the code inside the except block is also executed.

Q42. What is the purpose of the 'Finally' Block?

Ans. The 'finally' block defines a block of code that will be executed regardlessly of whether an exception is raised or not.

Q43. What is the use of 'self' in python class method?

Ans. 'Self' is used as the first parameter in class methods to refer to the class instance. It allows you to access the instance's attributes and methods within the method.

Q44. Explain 'Enumerate()' function in python?

Ans. The 'enumerate()' function couples an iterable with its index. It simplifies loops where you need to access both elements and their corresponding positions.

Q45. What is 'Ternary Operator' in python?

Ans. The ternary operator, also known as the conditional operator, provides a way to write concise if-else statements ina single line. It takes the form 'x' if 'condition else y', where x is the value if the condition is true, and y is the value if the condition is false. It enhance the code readability.

Q46. Differentiate between pop(),remove() and del operations in lists?

Ans. The pop() method removes an element at a specific index from list.

remove() method is used to eliminate the first occurrence of a specific value in list.

http://www.linkedin.com/in/nikhil-kumawat31

Del statement allows you to delete an item at a particular index from the list.

Q47. What is the join() method in python strings?

Ans. The join() method is built-in string method designed to concatenate elements of an iterable, like a list, using a specified separator string.

Q48. What is negative indexing mean?

Ans. Negative indexing starts from the other end of a sequence. In a list, the last element is at the -1 index, the second-to-last at -2, and so on.

Q49. What is inheritance?

Ans. Inheritance allows us to define a class that inherits all the methods and properties from another class.

There 5 types of inheritance in python:

1. Single inheritance
2. Multiple inheritance
3. Multilevel inheritance
4. Hierarchical inheritance
5. Hybrid inheritance

Q50. How arguments are passed in python?

Ans. Python's argument passing neither pass by value nor pass by reference but it is pass by object reference.

Depending on the type of object you pass in the function, the function behaves differently.

http://www.linkedin.com/in/nikhil-kumawat31

http://www.linkedin.com/in/nikhil-kumawat31