Python Assignment

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Module – 1 (SDLC - Software development life cycle)

- What is Software?

✓ Software is a set of instructions, data or programs used to operate computers and execute specific tasks.

- What are the types of Applications?

✓ There are three types of applications like Native, Hybrid and Web.

- What is programming?

✓ Programming is the process of creating a set of instructions that tell a computer how to perform a task. Programming can be done using a variety of computer programming languages, such as JavaScript, Python, and C++.

- What is Python?

✓ Python is an interpreted, object-oriented, high-level programming language with dynamic semantics.

✓ Python is a computer programming language often used to build websites and software, automate tasks, and conduct data analysis.

Module – 2 (Fundamentals of python)

- How memory is managed in Python?

✓ Memory in Python is managed by Python private heap space. All Python objects and data structures are located in a private heap. This private heap is taken care of by Python Interpreter itself, and a programmer doesn't have access to this private heap.

- What is the purpose continue statement in python?

✓ The continue keyword is used to end the current iteration in for loop or a while loop, and continues to the next iteration.

- What are negative indexes and why are they used?

✓ Negative Indexing is used to in Python to begin slicing from the end of the string i.e. the last.

Module – 3 (Collections, functions and Modules)

- What is List? How will you reverse a list?

✓ A List is an ordered and changeable collection of data objects. It is used to store the various types of data in a single variable.

✓ For reverse a list, a built in function called reverse() is used to reverse the list.

- How will you remove last object from a list?
- Suppose list1 is [2, 33, 222, 14, and 25], what is list1 [-1]?

✓ The method pop() can be used to remove and return the last value from the list or the given index value.

✓ List1[-1] = 25 // List index is negative and it is count from last.

- Differentiate between append () and extend () methods?

✓ .append() method adds an single item to a list in last whereas extend() method adds each of the iterable element which is adds in end of the list.

- How will you compare two lists?

✓ The list.sort() method sorts the two lists and the == operator compares the two lists item by item which means they have equal data items at equal positions.

- What is tuple? Difference between list and tuple.

✓ A Tuple is a collection of data objects which is ordered and not changeable.

✓ Tuple is unchangeable whereas list is changeable.

- How will you create a dictionary using tuples in python?

✓ In Python, dict() function is used to convert tuples to a dictionary. Tuple contained a key-value pair as an object.

- How Do You Traverse Through A Dictionary Object In Python?

✓ Dictionary Objects Iterate using following methods.

- dict.items()
- dict.values()
- dict.keys()
- using Index number – dict.get(5) – value of key 5
- sort()

- How Do You Check The Presence Of A Key In A Dictionary?

✓ The get() method is a dictionary method that returns the value of the associated key. If the key is not present it returns either a default value (if passed) or it returns none.

- Why Do You Use the Zip () Method in Python?
- The zip() function returns an iterator of tuples based on the iterable objects. If a single iterable is passed, zip() returns an iterator of tuples with each tuple having only one element. If multiple iterables are passed, zip() returns an iterator of tuples with each tuple having elements from all the iterables.

- How Many Basic Types Of Functions Are Available In Python?
- There are two types of functions in python: User-Defined Functions - these types of functions are defined by the user to perform any specific task. Built-in Functions - these types of functions are pre-defined in python.

- How can you pick a random item from a list or tuple?
- Random.choice() method returns a random element from the specified list or tuple by passing the tuple or list as an arguments to the choice() function.

- How can you pick a random item from a range?
- Use a random.randint() function to get a random integer number from the inclusive range.

- How can you get a random number in python?

✓ To generate random number in Python, randint() function is used. This function is defined in random module.

- How will you set the starting value in generating random numbers?

✓ The random number generator needs a number to start with (a seed value), to be able to generate a random number. By default the random number generator uses the current system time. Use the seed() method to customize the start number of the random number generator.

- How will you randomizes the items of a list in place?

✓ The shuffle() method randomizes the items of a list in place.

Module – 4 (Advance python programming)

- What is File function in python? What is keyword to create and write file.

✓ Python file object provides methods and attributes to access and manipulate files. Using file objects, we can read or write any files.

✓ Open() keyword with arguments of file name and mode is used to create or read file. Write() is used to write file using object.

- Explain Exception handling? What is an Error in Python?

✓ An Exception is an error, which occurs during runtime and disrupts the normal flow of program.

✓ Error is the problems or the faults that occur in the program, which makes the behaviour of the program abnormal and stop the execution of program.

- How many except statements can a try-except block have? Name some built-in exception classes.
- In Python, There has to be at least one except statement.
- In built exception class : IndexError, SyntaxError, ZeroDivisionError, ValueError

- When will the else part of try-except-else be executed?

✓ The else block will be executed when there is no error occurred in code.

- Can one block of except statements handle multiple exceptions?

✓ Yes

- When is the finally block executed?

✓ The finally block always executes when the try block exits. This ensures that the finally block is executed even if an unexpected exception occurs.

- What happens when „1“== 1 is executed?

✓ it simply evaluates to false and does not raise any exception.

- How Do You Handle Exceptions With Try/Except/Finally In Python? Explain with coding snippets.

✓ Try block test a block of code for errors.
✓ Except block handle the error
✓ Finally block execute code after result of try and except block code

- What are oops concepts? Is multiple inheritance supported in java.

✓ Object-oriented programming is a model that provides different types of concepts, such as inheritance, abstraction, polymorphism, etc. These concepts aim to implement real-world entities in programs, and they create working methods and variables to reuse them without compromising security.

- How to Define a Class in Python? What Is Self? Give An Example Of A Python Class.

✓ A class in Python can be defined using the class keyword.
✓ Ex. Class Class_name:
✓ SELF represents the instance of class. It is allows to access variables, methods, attributes.

- Explain Inheritance in Python with an example? What is init? Or What Is A Constructor In Python?

✓ The object of one class acquires the property of object of another class is called Inheritance.
✓ That creating a new class from an existing class is called Inheritance.
✓ The __init__ function is called every time when object is created from a class.
✓ A constructor is a special method in a class used to create and initialize an object of a class.

- What is Instantiation in terms of OOP terminology?

✓ The creation of an instance of a class.

- What is used to check whether an object o is an instance of class A?

✓ Using isinstance() Function

```
class A:
        name = "Sagar"

o = myObj()

x = isinstance(o, myObj)
```

- What relationship is appropriate for Course and Faculty?

✓ Association

- What relationship is appropriate for Student and Person?

✓ Inheritance