**Python Automation -Interview Questions:**

1. what is a class?

ANS: A Class is a code template for creating objects. Objects have member variables and have behavior associated with them. In python a class is created by the keyword class . An object is created using the constructor of the class. This object will then be called the instance of the class.

1. Pyramid triangle program using \*?
2. if I give input 3 following output should come

   \*

  \* \*

\*  \*  \*

ANS: n=input("enter the range:")

def fun1(a):

    for i in range(a+1):

        print (a-i)\*" ",

        print i\*" \*"

      fun1(n)

1. What is Decorators? Explain with example program?

ANS:

A decorator is a function that takes another function and extends the behavior of the latter function without explicitly modifying it.

def f1(func):

    res=0

    def wrapper(a,b):

        if a>b:

            res=func(a,b)

        else:

            res=func(b,a)

        return res

    return wrapper

@f1

def s1(a,b):

    y=a-b

    return y

x=s1(20,10)

print x

1. What is a shallow copy and deep copy explain with example?

ANS:

A shallow copy constructs a new compound object and then (to the extent possible) inserts references into it to the objects found in the original. A deep copy constructs a new compound object and then, recursively, inserts copies into it of the objects found in the original.

# shallow copy

l=[1,2,3]

a=l

a.append(4)

print a

print l

# deep copy

x=10

y=x

y=11

print x

print y

1. what is namespace in Python?

ANS:

a naming system for making names unique to avoid ambiguity. ... Namespaces in Python are implemented as Python dictionaries, this means it is a mapping from names (keys) to objects (values).

1. WAP on selenium for searching something in google search and should get the search results?

ANS:

from selenium import webdriver

from selenium.webdriver.common.keys import Keys

driver=webdriver.Chrome()

driver.get("<https://www.google.com>")

driver.maximize\_window()

x=driver.find\_element\_by\_xpath("//\*[@id='tsf']/div[2]/div/div[1]/div/div[1]/input")

x.send\_keys("gss infotech")

x.send\_keys(Keys.RETURN)

1. what is the sister of xpath?

ANS:

Explain in detail about absolute & relative XPath

1. Why did you work for 6 years in the same company?

ANS:

As my talent is recognized and there is ample scope for professional development

1. what did you hear about SunGard?

SunGard is a good company which aggressively works on cutting edge technologies. It has been in the market for years and is very successful in creating a good reputation for its services.

1. how you will handle if I did shout on you while working?

ANS:

I will ask the reason for your disappointment and will try to clarify my stand as to why I had to do that way. If there is any mistake that I had done, I will correct and make sure not to repeat.

**Python Automation-Interview Questions**

1. List reverse without using in-built Function

def reverse(s):

str=''

for i in s:

str= i+str

return str

1. Question on Slicing

A mechanism to select a range of items from sequence types like list, tuple, strings etc. is known as slicing.

li=['a','b','c','d','e']

print li[11]

Error- IndexError: list index out of range

1. What is Backup and Restore

Backup and recovery refer to the process of backing up data in case of a loss and setting up systems that allow that data recovery due to data loss.

Backing up data requires copying and archiving computer data, so that it is accessible in case of data deletion or corruption.

Data from an earlier time may only be recovered if it has been backed up.

1. Types of backup

Full backup

Incremental backup

Differential backup

1. Difference between Incremental backup and Differential backup?

The difference in incremental vs. differential backup is that, while an incremental backup only includes the data that has changed since the previous backup,

differential backup contains all of the data that has changed since the last full backup

1. Rest API (Methods and response codes)

200(ok)

201(created)

202(accepted)

204(no content)

302(found)

403(forbidden)

404(not found)

500(internal server error)

1. JIRA tool

JIRA is a tool developed by Australian Company Atlassian. It is used for bug tracking, issue tracking, and project management. The name "JIRA" is actually inherited from the Japanese word "Gojira" which means "Godzilla". The basic use of this tool is to track issue and bugs related to your software and Mobile apps.

1. How to link a BUG to the Test case in JIRA?

When a test case fails with a bug , we provide bug number to the test case and fail it.

 Enter the issue details and click on the Create and **Link** button. The issues is generated with **Jira** ID. Once you add **an issue**, it is automatically **linked** to the **test case** and it is displayed on the **Linked** Issues tab. It also displays the Linkage Level i.e. **Test Case** or **Test** Step to which the issue has been logged.

### 

1. STLC

Software Testing Life Cycle refers to a testing process which has specific steps to be executed in a definite sequence to ensure that the quality goals have been met. In STLC process, each activity is carried out in a planned and systematic way. Each phase has different goals and deliverables.

*Below are the phases of STLC:*

* *Requirement Analysis*
* *Test Planning*
* *Test case development*
* *Test Environment setup*
* *Test Execution*
* *Test Cycle closure*

1. linux command(cd,copy)
2. what is dictionary in py?

A dictionary is a collection which is unordered, changeable and indexed. In Python dictionaries are written with curly brackets, and they have keys and values.

dict={'a':10,'b':20,'c':30}

1. what is modules in py?

os,copy,math,re,sys,requests,pandas

1. NAS and SAN?

A NAS is a single storage device which operates on data files, whereas SAN is a local network of multiple devices which operate on disk blocks...But inorder to get connected to a SAN, the server class devices with the SCSI Fibre Channel is required

1. Why we are using cloud instead of local?

Reduced IT costs. Moving to cloud computing may reduce the cost of managing and maintaining your IT systems. ...

Scalability. ...

Business continuity. ...

Collaboration efficiency. ...

Flexibility of work practices.

1. What have you done in JMeter?

JMeter simulates a group of users sending requests to a target server, and returns statistics that show the performance/functionality of the target

server/application via tables, graphs, etc.

it is a performance testing tool it will do 2 type of testing one is normal needs only url,username,password of the site and another is performance testing here it will take a creates a script and test that (one script per one login).

1. Take a string:

input = "I am an engineer"

The output must be s= "I ma na reenigne"

Note: do not use build in functions

str = ""  
for i in s:  
 str = i + str  
print(str)  
print(s[::-1])

1. Take list of random numbers:

l = [1,4,67,87,34,56] Get the max and min numbers without using built in functions

max=l[0]  
for i in l:  
 if i>max:  
 max=i  
print(max)  
  
min=l[4]  
for i in l:  
 if i<min:  
 min=i  
print(min)

**Storage and Testing:**

1. How do you test the performance or a storage array/storage product?

ANS. The performance of storage product is tested in the below way

Based on the application, the rite set of IO parameters needs to be collected. If it is a database application, 4k or 8k block sizes of IOs are expected.

Likewise, different app will have different load with different IO sizes

To test the performance, we need to consider all the parameters given in the second question along with some set of storage volumes coming from a storage box must be mapped to Application host.

Using a IO tool, VD bench/IOMeter start different IOs running with different configurations and generate the report which helps to measure the performance.

1. Q. What are the different parameters used to test the performance of storage array/storage product

ANS.

The following parameters are used to test the performance of a storage product

1. Different block sizes of IO such as 4k, 8k, 16k, 32k, 64k, 128k, 256k, 1024k

2. Different block sizes with different types such as Sequential IO, Random IO

3. Different storage LUN configurations with Different RAID volumes, RAID1, RAID0 and RAID5

1. What are the different tiers available in Hitachi storage array.

ANS

Tier with SSD drives,

Tier with SAS drives

Tier with SATA drives

1. How did you test the performance of different tiers in Hitachi array and how do you measure the performance?

ANS.

Create Luns from different Tiers and map them to different storage arrays and initiate IOS from three different hosts. Use VDbench or IO meter to test the performance of the IO on to these tiers

1. . What is the difference between NAS and SAN?

ANS.

NAS is a file storage and SAN is a Block storage

<https://www.backblaze.com/blog/whats-the-diff-nas-vs-san/> this will get more information

1. What do you suggest when you were asked to implement a storage solution in a single site datacenter, NAS/SAN and explain in detail about how do you implement and what are the advantages and disadvantages?

ANS.

Based on the customer requirement, we choose NAS or SAN. NAS is file system based and SAN is block storage. Both implementations might have the same kind of performance.

1. What is the difference between HBA and Ethernet Adapter and how the performance differ?

ANS.

HBA are host bus adapters that are used in SAN(Fiber channel) which helps to transfer the data in FC frames over FC cables whereas Ethernet card are used to transfer the data in IP packets over TCP IP

1. What is the latency and explain in detail about latency and response time?

ANS. Latency is the time it takes for data to reach the storage system where as Response time is the time taken to process a complete request.

1. What are the emulators you have used to test the performance by inducing different latencies while IO is going on and how do you measure the performance?

ANS.

Dummy net,

Jammer

ANUE

1. What is the difference between a traditional SATA disk, SAS disk and SSD?

SATA and SAS drive contains a rotatory magnetic storage disk which stores data by rotating the disk. The data is written with the read/write head.

Whereas SSDs are made up of semiconductor chips. The data is stored on pages and pages clumped together to form blocks.

1. How the data is stored in HDD and SSD explain in detail.

ANS.

on HDD, the data is stored on platters which are circular in shape.

on SSD, the data is stored on semiconductor chips

1. What are the different file systems?

ANS.

CIFS

NFS

1. How data is stored in SAN and NAS.

ANS.

In SAN, the data is stored in blocks whereas the data is stored as files in NAS. But coming to underlying storage, in both the cases, the data stored in blocks.

1. What is initiator and what is target in storage terminology

ANS.

Initiator which initiates the request and target is a device which process the request.

Host: initiator

Target: storage box

1. What is RAID and explain in detail about RAID-0, RAID-1, RAID-5, RAID10

ANS.

RAID-0, Striping: Data will be written across the disks at the same time by splitting the blocks.

RAID-1, Mirroring: Data which is written in one disk will be written in another disk to maintain redundancy. If one disk fails the other will help to continue IO.

RAID-5, Parity: Data blocks are stripped across the drives and parity checksum of a blocks are stored across the drives.

RAID-10, It combines disk mirroring and striping.

1. Which RAID will give you more performance?

ANS.

RAID-0, Striping.

1. What is parity in RAID-5

ANS.

RAID-5 provides data redundancy by using parity. Parity is a calculated value used to reconstruct data after a failure.

While data is being written to a RAID-5 volume, parity is calculated by doing an exclusive OR (XOR) procedure on the datANS. The resulting parity is then written to the volume.

The data and calculated parity are contained in a plex that is "striped" across multiple disks. If a portion of a RAID-5 volume fails,

the data that was on that portion of the failed volume can be recreated from the remaining data and parity information.

It is also possible to mix concatenation and striping in the layout.

1. What is the algorithm running in RAID-5 parity?

ANS.

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the data that was on that portion of the failed volume can be recreated from the remaining data and parity information.

It is also possible to mix concatenation and striping in the layout.

1. How the data will be written in RAID0, RAID1 and RAID5.

ANS.

RAID-0, Striping: Data will be written across the disks at the same time by splitting the blocks.

RAID-1, Mirroring: Data which is written in one disk will be written in another disk to maintain redundancy. If one disk fails, the other will help to continue IO.

RAID-5, Parity: Data blocks are stripped across the drives and parity checksum of a blocks are stored across the drives.

1. What is the difference between ISCSI, FC and FCIP and explain in detail on how the data is transmitted?

ANS.

iSCSI: A communication protocol, the transfer the scsi commands over TCI/IP network.

FC: Fiber channel protocol which transfers the FC frames over Fiber channel cable with high speed bandwidth supporting 4G, 8G,32G etc..

FCIP: in FCIP, the fiber channel frames are transferred over IP network.

1. Give 5 test scenarios for Replication

ANS.

Assuming replication is happening from Site A to Site B

scenario 1: Failing the source disk of Site A

Scenario 2: Failing the destination disk of Site B

Scenario 3: Failing the complete Site A

Scenario 4: Failing the complete Site B

Scenario 5: Failing the WAN network

Scenario 6: Inducing the latency on WAN network

1. What happens when the data is corrupted while replication is happening?

ANS

The corrupted data will be replicated to the other site and whole data will be corrupted. To avoid this situation, we have to maintain a local backup.

1. What happens when the disk is corrupted while IOS is going on and replication is happening?

ANS.

The replication will be interrupted and IOs will be stopped at Source site.

1. What are the different backups available? what is the use of having both backup and replication.

Ans.

Depends up on the application requirement, Organizations takes backup every End of the day/Week.

Assuming an application implemented in such a way the data is backed up in the local site and also replicated to other site. In case of Any site failure, let’s say Site A failed, the application will resume its operations from Site B.

In some situations, if the data is corrupted, the same corrupted data is replicated to Site B and hence the whole data is useless. In these situations, a local backup will help to resume the application with some data loss.

**Questions during Networking Automation**

1. Brief about your work experience
2. Explain about OSI Layers and the packet flow through the layers with an example
3. What are the devices used in physical layers?
4. How to prepare the test plan and what are the things we take into consideration while writing the test plan
5. Explain about agile methodology, details of scrum
6. Tell us about sprint, who assigns the work in sprint and the flow of sprint
7. How the WAN has been used in your project
8. when two devices trying to communicate with each other, what is the process that both will undergo assuming the devices are in different network
9. when we made one device as primary and other as secondary, and if the primary is turned off, what are the possible ways that data is safeguarded  
   in the secondary device, explain the possible scenarios that system can undergo
10. let’s assume we created a WhatsApp group with 3 members A, B and C, here if A send a message B, C can receive, B sends a message C, A can receive but C sends a message A is receiving but B is not receiving. What are the ways to debug this issue?
11. How the WAAS devices work, what is the mechanism involved (About Project)  
    12. HP Nimble Arrays - SAN arrays, how we are testing them in your current project  
      
    **Python:**
12. input\_str="i am an engineer"  
      
    without using any built-in functions, we should get the output as "i ma na reenigne"
13. 1) OSI Model and explanation of layers(Along with few protocols for each layer)
14. ICMP Protocol (Ping)
15. - Which layer protocol is ICMP
16. - How ping works (In same network / different network)
17. - What happens when a host is added in 'hosts' folder locally with a duplicate IP - will it look locally, or will it go to the DNS server?
18. - How do we know the path through which a packet traveled (using traceroute command)
19. Explanation on how traceroute is done
20. How does a mail sent from a person sitting in one place (say Hyderabad) can send it to someone in UK - Explain how it is processed?
21. Some website is blocked in a region (Say China blocks Google access) - Explain on how specific traffic is dropped according to regions.
22. How do we restrict traffic to one network/region?
23. TCP/UDP differences (Need to be specific on Overhead of TCP packets, error checking)
24. VPN - What is VPN? How is it used?
25. Tunnels- What are Tunnels?
26. How negotiations are made for tunnel and data is transferred in a VPN
27. Natting - Any hands-on experience (if not theoretical explanation)
28. Proxy server- what is a proxy server, any simple use case.

**Python Questions**

1. **How memory is managed in Python?**

Python memory is managed by Python private heap space. All Python objects and data structures are located in a private heap. The programmer does not have access to this private heap and interpreter takes care of this Python private heap.

The allocation of Python heap space for Python objects is done by Python memory manager. The core API gives access to some tools for the programmer to code.

Python also have an inbuilt garbage collector, which recycle all the unused memory and frees the memory and makes it available to the heap space.

1. **What are Python decorators?**

A Python decorator is a specific change that we make in Python syntax to alter functions easily.

1. **What is the difference between list and tuple?**

The difference between list and tuple is that list is mutable while tuple is not. Tuple can be hashed for e.g as a key for dictionaries.

1. **What are the built-in type does python provides?**

There are mutable and Immutable types of Pythons built in types Mutable built-in types

List

Sets

Dictionaries

**Immutable built-in types**

Strings

Tuples

Numbers

1. **What is namespace in Python?**

In Python, every name introduced has a place where it lives and can be hooked for. This is known as namespace. It is like a box where a variable name is mapped to the object placed. Whenever the variable is searched out, this box will be searched, to get corresponding object.

1. **What is the use of the split function in Python?**

The use of the split function in Python is that it breaks a string into shorter strings using the defined separator. It gives a list of all words present in the string.

1. **Explain database connection in Python Flask**

Flask supports database powered application (RDBS). Such system requires creating a schema, which requires piping the shema.sql file into a sqlite3 command. So you need to install sqlite3 command in order to create or initiate the database in Flask.

Flask allows to request database in three ways

before\_request() : They are called before a request and pass no arguments

after\_request() : They are called after a request and pass the response that will be sent to the client

teardown\_request(): They are called in situation when exception is raised, and response are not guaranteed. They are called after the response been constructed. They are not allowed to modify the request, and their values are ignored.

1. **How to create an empty class in Python?**

Ans:

An empty class is a class that does not have any code defined within its block. It can be created using the pass keyword. However, you can create objects of this class outside the class itself. IN PYTHON THE PASS command does nothing when its executed. it’s a null statement.

class a:

&nbsp; pass

obj=a()

obj.name="xyz"

print("Name = ",obj.name)

**Output:**

Name = xyz

1. **Write a program in Python to execute the Bubble sort algorithm.**

def bubbleSort(nlist):

for passnum in range(len(nlist)-1,0,-1):

for i in range(passnum):

if nlist[i]>nlist[i+1]:

temp = nlist[i]

nlist[i] = nlist[i+1]

nlist[i+1] = temp

nlist = [14,46,43,27,57,41,45,21,70]

bubbleSort(nlist)

print(nlist)

Sample Output: [14, 21, 27, 41, 43, 45, 46, 57, 70]

1. What is Context Manager in Python ?

After the use of any resource it is really needed for any programming language to release that resource and it will be very efficient if we can do that automatically. So in Python The Context Manager takes care of that it facilitate the proper handling of resources by using with keyword. Context managers can be written using classes or functions (with decorators). Here there is no need of the close statement.

eg: with open("test.txt") as f:

data = f.read()

When creating context managers using classes, user need to ensure that the class has the methods: \_\_enter\_\_() and \_\_exit\_\_().

The \_\_enter\_\_() returns the resource that needs to be managed and the \_\_exit\_\_() does not return anything but performs the cleanup operations.

First, lets create a simple class called ContextManager to understand the basic structure of creating context managers using classes, as shown below:

class ContextManager():

def \_\_init\_\_(self):

print('init method called')

def \_\_enter\_\_(self):

print('enter method called')

return self

def \_\_exit\_\_(self, exc\_type, exc\_value, exc\_traceback):

print('exit method called')

with ContextManager() as manager:

print('with statement block')

1. Deep copy and shallow copy in python?

Both of these is used to copy the value .In case of deep copy the memory reference for the original object and the copied object will be different so any changes made in the copied object won't reflect in the origan object. But in case of Shallow copy the memory reference for both original object and copied object will be same so any changes made in the copied object will reflect in the original object.

eg: # importing copy module

import copy

# initializing list 1

li1 = [1, 2, [3,5], 4]

# using copy for shallow copy

li2 = copy.copy(li1)

# using deepcopy for deepcopy

li3 = copy.deepcopy(li1)

1. what is the use of .pyc files and what will happen if you delete those file means?

The .pyc contain the compiled bytecode of Python source files, which is what the Python interpreter compiles the source to. This code is then executed by Python's virtual machine. There's no harm in deleting them (.pyc), but they will save compilation time if you're doing lots of processing

It's not an executable; it's used internally by the compiler as an intermediate step. In general, you don't make .pyc files by hand, the interpreter makes them automatically.

1. What is abstract class and interface in python

Abstract classes are classes that contain one or more abstract methods. An abstract method is a method that is declared but contains no implementation.

Abstract classes allow you to provide default functionality for the subclasses. Abstract classes are not able to instantiate, and it needs subclasses to provide implementations for those abstract methods which are defined in abstract classes.

An interface, for an object, is a set of methods and attributes on that object.

In Python, we can use an abstract base class to define and enforce an interface.

1. How to print particular word in a file?

you have to open the file in write mode if there is nothing in that file or if there exists something already in that file open that in append mode

and write the word what you want to write in it by taking the cursor to the location or in the next line.

f = open('helloworld.txt','w')

f.write('hello')

f.close()

1. Decorators in python?

A decorator is a function that takes another function and extends the behavior of the latter function without explicitly modifying it. It adds some functionality to the existing function without modifying it.

1. eg:

def smart\_divide(func):

def inner():

a =int(input("enter the value of a:"))

b=int(input("enter the value of b:"))

print("I am going to divide",a,"and",b)

if b == 0:

print("Whoops! cannot divide")

else:

print(a/b)

return inner()

return func(a,b)

@smart\_divide

def divide(a,b):

return(a/b)

1. Using deep copy and shallow copy modify the list ?

import copy

list1 = [[1,2],[3,4],[5,6]]

list2 = copy.copy(list1)

list1.append([7,8])

print("list1 ",list1)

print("list2 ",list2)

1. Using the file handling get the particular word in all the lines?

with open("C:/test1.py",'r') as file:

for each\_line in file:

if 'def' in each\_line.split():

print(each\_line)

1. Using decorators in python return the positive and negative values?

def my\_decorator(func):

def wrapper(a,b):

if a>b:

result = func(a,b)

else:

result = func(b,a)

return wrapper

@my\_decorator

def sub(a,b):

diff = a-b

print("Difference is :",diff)

@my\_decorator

def div(a,b):

di = a/b

print("Division is :",di)

print("--------Positive-----------")

sub(10,2)

div(10,2)

print("--------Negative-----------")

sub(2,10)

div(2,10)

**General Testing**

1. What is a test Case?

ANS: A Test Case is defined as a set of actions executed to verify a particular feature or functionality of the software application. A test case is an indispensable component of the Software Testing LifeCycle that helps validate the AUT (Application Under Test).

1. What is a test Plan?

ANS: A test plan is a detailed document that outlines the test strategy, Testing objectives, resources (manpower, software, hardware) required for testing, test schedule, Test Estimation and test deliverables.

The test plan serves as a blueprint to conduct software testing activities as a defined process which is minutely monitored and controlled by the test manager. about being very specific.

1. How is test estimation done?

ANS: List of Software Test Estimation Techniques

* Work Breakdown Structure
* 3-Point Software Testing Estimation Technique
* Wideband Delphi technique
* Function Point/Testing Point Analysis
* Use – Case Point Method
* Ad-hoc method

### What is Defect Life Cycle?

Defect Life Cycle or Bug Life Cycle is the specific set of states that a Bug goes through from discovery to defect fixation.

### Bug Life Cycle Status

The number of states that a defect goes through varies from project to project. Below lifecycle diagram, covers all possible states

* **New:** When a new defect is logged and posted for the first time. It is assigned a status as NEW.
* **Assigned:** Once the bug is posted by the tester, the lead of the tester approves the bug and assigns the bug to the developer team
* **Open**: The developer starts analyzing and works on the defect fix
* **Fixed**: When a developer makes a necessary code change and verifies the change, he or she can make bug status as "Fixed."
* **Pending retest**: Once the defect is fixed the developer gives a particular code for retesting the code to the tester. Since the software testing remains pending from the testers end, the status assigned is "pending request."
* **Retest**: Tester does the retesting of the code at this stage to check whether the defect is fixed by the developer or not and changes the status to "Re-test."

1. What are the different types of testing?

|  |  |
| --- | --- |
| **Testing Category** | **Types of Testing** |
| Functional Testing |  Unit Testing   * Integration Testing    Smoke   UAT ( User Acceptance Testing)   Localization   Globalization   Interoperability |
| Non-Functional Testing |  Performance   Endurance   Load   Volume   Scalability   Usability |
| Maintenance |  Regression   Maintenance |

1. What is the difference between Test Scenario and Test Case?

**ANS**: Test Scenario Vs Test Case

Test scenarios are rather vague and cover a wide range of possibilities. Testing is all about being very specific.