

ALL THESE QUESTIONS NEED TO BE ATTEMPTED ON YOUR OWN

PLEASE DON'T SHARE THE ASSIGNMENT WITH ANYONE. THIS IS HIGHLY CONFIDENTIAL.

ATTEMPT WHATEVER YOU KNOW BEST, FIRST!

Q1 a.) One Click Wordpress setup: Bash script to setup a whole LAMP stack, PHP app can be Wordpress and DB can be MySQL.

We should be able to run this script on a local machine or server and after execution of the script it should have Wordpress Running via Nginx/Apache.

DB user for Wordpress should also be made from within the script and same should be set in Wordpress conf file.

OR

Q1 b.) One Click Java App setup: Bash script to setup a whole JAVA application stack on a server.

Once the script is run it should have the java application running and being served via Nginx on local machine or server. Sample java application can be simply a tomcat war etc.

IN ABOVE QUESTION ATTEMPT ONLY PART a) or PART b)

Q2 . Script monitor servers in an AWS region with name tag value "dev-*" (dev-ravi, dev-sanjan) and check whether the server is being used or not. If there is no activity on the server, stop it (shutdown) automatically. You can use as many checks to put in place to confirm server utilization and at last send out an email using any smtp client with details.

Q3. Python (Boto2/Boto3) or Bash script to delete AWS EC2 AMIs having tag "delete" with value "yes", Description value as "I can be deleted" and are more than 30 days old. At last send out an email using any smtp client with details.

Q4. Architecture Diagram for a PHP/JAVA/Python based application to be hosted on AWS with all mentions like VPC, AWS/any other cloud platform services, well defined network segregation.

Q5. Ansible Playbook to do the following tasks:

Part 1. Copy a sample script to a remote server

Part 2. Run the above script on the remote server, print script output to a file and then copy the file to the Ansible server

Part 3. Create AMI of all AWS servers using local_action in Virginia region and create AMI with no-reboot option as true.

Part 4. Ansible playbook to update Nginx Virtualhost file on a remote server and change **server_name** to hello.abc.com

Q6. Docker Related:

Part 1. Write a Docker file to create a Docker image having Wordpress installed

Part 2. Write a Docker file to create a Docker image for database

Now, use Docker compose to bring this up. Database container should mount the local host's /etc/mysql volume into it's /etc/mysql directory.

You just need to send across the files. (Dockerfile & Docker Compose file)

Q7. Shell commands to:

1. Kill all processes/zombie processes of service called "unicorn".
2. MySQL shell command to check the different IPs from where MySQL connections are being made to the Database.
3. Last 10 processes based on both Memory and CPU usage running on a linux server

Q8. (OPTIONAL QUESTION)

Load Test Script to do a basic load testing on Healthkart.com Use any load testing tool of your choice Jmeter JMX, locust etc.

Q9. Any scripts you would want to share to showcase your skills can be attached.

Database Section

PFA an image containing different tables. Basis those tables, please answer the following:

Q1. How many existing rows will be deleted from the database by the following SQL query?
DELETE FROM Book;

Enter your numerical answer using only digits here: _____

Q2. What is the first row of data returned by the following SQL query?
SELECT Name, SUM(NumCopies) AS COUNT

```
FROM Library NATURAL JOIN LibraryBooks
GROUP BY LIBID
ORDER BY COUNT DESC;
```

- A) GATech, 38
- B) Dartmouth, 29
- C) RPI, 5
- D) Harvard, 7
- E) None of the above

Q3. How many rows of data will the following SQL query return as a result?

```
SELECT Name, Title
FROM Author AS a
LEFT OUTER JOIN Book AS b
ON a.AUTHID = b.AUTHID;
```

Enter your numerical answer using only digits here: _____

Q4. `SELECT * FROM Book, Author;`

Enter your numerical answer using only digits here: _____

Q5. How many rows of data will the following SQL query return as a result?

```
SELECT Title, Name FROM Book NATURAL JOIN Author;
```

Enter your numerical answer using only digits here: _____