Lab 4: Cron Jobs -

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Q1. Create a backup for any directory with files inside. Create a cron job which backups the directory on the 5th day of every month.

- We can back up the files using the *tar* command, steps are as follows:
    1. Here I am backing up the Pictures folder which has plenty of pictures using the following command : $ *tar -cvpzf home/parth/backup/Pictures.tar.gz /home/parth*
       We need to make sure that the destination folder exists, if not we can create by the command : $ *mkdir /backup*
    2. Now let's add the tar command in a bash script to make this backup process automatic. Also it is good to add some dynamic value in the name to make sure there is no overwriting of backup files. We can create it using the vi editor and the command : $ *vi /backup.sh*
    3. The script will include the following content:

```
#!/bin/bash
TIME=ὰdate +%b-%d-%ỳ                    # This Command will read the date.
FILENAME=Pictures-$TIME.tar.gz    # The filename including the date.
SRCDIR=/home/parth                    # Source backup folder.
DESDIR=home/parth/backup                    # Destination of backup file.
tar -cpzf $DESDIR/$FILENAME $SRCDIR
```

- In Linux, we can easily use the cron jobs in order to schedule tasks. So to do our backup task we can do the following:
    1. On crontab editor utility, We run the following: $ *crontab -e*
    2. Paste the following text in the editor: $ ** * 5 * * /bin/bash /backup.sh*

Q2. Install nginx and backup directory with location of index.html. Create a cron job which backups the directory at midnight every Sunday. Also script should delete old or previous backups.

- To do this task, we can do the following steps
    1. Install nginx: $ *sudo apt update*; $ *sudo apt install nginx*

2. Setup index.html file's directory : $ *cd /var/www*; $ *sudo mkdir lab4_nginx*; $ *cd lab4_nginx;* $ *sudo touch index.html*
3. Make a nginx's config file : $ *cd /etc/nginx/sites-enabled;* $ *sudo nano lab4_nginx*
4. Config file contents:
```
server {
listen 80;
listen [::]:80;
server_name q2.lab4;
root /var/www/lab4_nginx;
index index.html;
location / {
        try_files $uri $uri/ =404;
        }
}
```
Note: port number & server name can vary {choose as per your preference}

5. Restart nginx for new configurations: $ *sudo service nginx restart*
6. Make a backup shell script to perform the cron job, it should contain the following:
```
#!/bin/bash
/bin/rm -r /var/www/lab4_nginx_backup
/bin/cp -r /var/www/lab4_nginx /var/www/lab4_nginx_backup
```
Note: It should be in the same folder as other files - /var/www/backup_script.sh

7. As this job is modifying the var directory, it needs sudo permissions: $ *sudo nano/etc/crontab*
8. Paste the following text in the editor: $ 0 0 * * 0 /bin/bash /var/www/backup_script.sh