Practical 5 (Module 5 – Managing Linux Jobs and Processes:

1. Which of these statements apply to a *daemon process*?
   a) A structured set of commands stored in an executable file on a Linux file system.
   b) A program that is loaded into memory and executed by the CPU.
   c) A process launched by a user that is started from a terminal or within the graphical environment.
   d) A system process that is not associated with a terminal or within the graphical environment.

2. Which of these processes starts one or more other processes?
   a) Parent process
   b) Child process
   c) Sibling process
   d) Zombie process

3. The first process that is started by the Linux kernel is the_____daemon.
   a) Bash shell
   b) kernel
   c) init
   d) login

4. The kernel has a PPID of ____.
   a) 0
   b) 1
   c) 2
   d) 3

5. Write the **cron** entries for each of the scheduling requirement below:

   a. Run the shell script /home/admin/backup.sh on January 2 at 6:15 A.M:

      15 6 2 1 * /home/admin/backup.sh

   b. Run the shell script /home/admin/backup.sh at 12:01 AM, every Monday in January:

      01 00 * Jan Monday /home/admin/backup.sh

   c. Run /home/user/hourly-archive.sh every hour, on the hour, from 9 A.M. (09:00) through 6 P.M. (18:00), every day:

      00 09-18 * * * /home/user/hourly-archive.sh

   d. Run /home/user/script.sh every Monday, at 9 A.M. and 6 P.M:

      00 09,18 * * Mon /home/user/script.sh

   e. Run /usr/local/bin/backup at 10:30 P.M., every weekday:

      30 22 * * 1 Mon,Tue,Wed,Thu,Fri /usr/local/bin/backup

6. Write an ***at*** command to schedule each the command below to execute once in the future:

   a. Schedule a command to run immediately
   at now or at batch

   b. Schedule a command to run at 4:00PM on the current date
   at teatime

   c. Schedule a command to run at 9:00 AM on December 25th 2019
   at 9:00am 12/25/2019
   at 9:00am 12252019
   at 9:00am 12.25.2019

7. Determine and explain when will a script be executed when placed into the respective cron folders below:

   a. /etc/cron.hourly **Jobs are run on an hourly basic**

   b. /etc/cron.daily **Jobs are run on a daily basic**

   c. /etc/cron.weekly **Jobs are run on a weekly basic**

   d. /etc/cron.monthly **Jobs are run on a monthly basic**

8. Write command(s) based on the following scenario:
   a. To start an xeyes program and run it in the foreground **xeyes**

   b. To start an xeyes program and run it in the background **xeyes &**

   c. To stop a process that is running in the foreground **ctrl-z**

   d. To list the contents of the job control **Jobs**

   e. To edit your crontab file, or create one if it doesn't already exist **crontab -e**

   f. To display your crontab file **crontab -l**

   g. To remove your crontab file **crontab -r**

   h. To display the last time you edited your crontab file **crontab -v**

9. Fill in the following UNIX commands:

Command	Function	Note
bg	To continue a stopped process in the background.	
fg job_ID	To switch a particular process running in the background to the foreground.	
ps	To list all running processes.	
pstree	To list processes in the form of a tree structure.	
nice	To assign a process a specific priority value.	
renice	To change the priority value of a running process.	
top	To view process information in a continuously updated list.	
kill	To terminate a process.	
killall	To terminate all process.	
sleep	To delay the start of a job.	
nohup	To let a process to continue running even after you logout of the system.	

Extra exercises (Optional)

1	Write a command to create a variable "x" and assign the value "30" to this variable. **Answer: x=30**
2	Issue a command so that the variable "x" created in Q2 can be accessed by sub-shells. **Answer: export x**
3	Issue a command to terminate a process with ID of 1234. **Answer: kill 1234**
4	Write a command to execute a background process that displays a reminder to make a phone call in 20 minutes time. **Answer**: **sleep 1200; echo "Remember to make a phone call"**
5	Write a command that will search for any file bigger than 100k, regardless of the user's connection to the terminal. The search results is to be saved to a file called "log.txt**".** **Answer: nohup find -size +100k > log.txt**
6	Write a command to change the priority of the ***xeyes*** program (assume the process ID is 6578) from a default nice value (+10) to a nice value of -8. **Answer: renice -8 6578 or renice -8 -p 6578 or renice -n -8 6578**
7	You are required to add a user ***cron*** job with the following requirements:- - Schedule the script in /usr/bin directory named updatedb to update your database regularly. - The script is to be run every hour from 10:00 AM to 10:00 PM, Monday to Saturday. **Answer:** **crontab -e** **0 10-22 * * 1-6 /usr/bin/updatedb**