Assignment 8

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SECTION-3A

ROLL NO.-59

USN- ENG24CY0161

11. What is a user-defined function in shell scripting?

A reusable block of code that performs a task.

Example:

myFunc() {

  echo "This is a user-defined function"

}

myFunc

---

12. Bash script with a function to multiply two integers.

#!/bin/bash

multiply() {

  echo $(($1 * $2))

}

multiply 5 6

---

13. Explain how arrays (1D, 2D, 3D) are declared in bash scripting.

- **1D Array:**

- arr=(10 20 30)

- **2D (using nested arrays):**
  Bash doesn't support true 2D arrays, but you can simulate them:

- matrix[0,0]=1

- matrix[0,1]=2

- **3D:** Use associative arrays or files to emulate 3D data.

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14. Write a shell script to display elements of an array.

#!/bin/bash

arr=(apple banana cherry)

for i in "${arr[@]}"; do

  echo $i

done

---

15. What is the purpose of cron in Linux?

cron is used to **schedule tasks automatically** at specific intervals (e.g., backups, updates).

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16. Write a cron job to run a backup script every day at midnight.

Edit crontab using:

crontab -e

Add this line:

0 0 * * * /home/user/backup.sh

17. How do you schedule a one-time job using at command?

at 10:00 PM

> bash backup.sh

> <Ctrl+D>

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18. Write a script to display disk usage using df and du.

#!/bin/bash

echo "Disk Free:"

df -h

echo "Disk Usage:"

du -h --max-depth=1

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19. How can you log the output of a script using the tee command?

./myscript.sh | tee logfile.txt

Displays output on screen and saves it in logfile.txt.

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20. Example of shell scripting automating system tasks.

Example: Automatic Backup

#!/bin/bash

tar -czf backup_$(date +%F).tar.gz /home/user/documents

echo "Backup done!"