

Linux Programming: Assignment-8

1. What is a user defined function in shell scripting? explain with an example

Ans: a user defined function in shell scripting is a block of code that performs specific task and can be reused multiple times within a script

Example: greet () {

 echo "Hello, \$1! Welcome to Bash scripting."

}

greet "Varsha"

2. Write a bash script with a function that multiplies two integer numbers

Ans: multiply () {

 result=\$((\$1 * \$2))

 echo "Product = \$result"

}

read -p "Enter first number: " num1

read -p "Enter second number: " num2

multiply \$num1 \$num2

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

Ans: 1 D ARRAY

```
Ø Arr = (10 20 30 40)
```

```
echo ${arr[0]} # 10
```

```
echo ${arr[@]} # prints all elements
```

2D ARRAY

```
Ø arr2D[0,0]=1
```

```
arr2D[0,1]=2
```

```
arr2D[1,0]=3
```

```
arr2D[1,1]=4
```

```
echo ${arr2D[1,0]} # 3
```

3D ARRAY

```
Ø arr3D[0,0,0]=100
```

```
arr3D[0,0,1]=200
```

4. write a shell script to display elements an array

Ans: numbers=(10 20 30 40 50)

```
echo "Array elements are:"
```

```
for n in "${numbers[@]}"
```

```
do
```

```
    echo "$n"
```

```
done
```

5. what is propose of corn in Linux?

Ans: it is time-based job scheduler in Linux used to automatically run scripts or commands in specific time interval

Example: automated backups

Long clean ups

6. write a corn job to run a backup script to run every day at midnight

Ø open the corn tab file

crontab -e

Ø add this line

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

7. how do you schedule a one time a job using at command ?

ans: the at command schedule's one time job

example : at 9:00 PM

then enter this command

/home/user/backup.sh

<Ctrl + D>

8. write a script to display disk usage using df and du

ans: echo "Disk space usage (overall):"

df -h

echo

echo "Disk usage of current directory:"

du -sh .

9. how can u log a output of a script using a tee command

ans: The tee command writes output to both the terminal and a log file at the same time

echo "Running backup process..." | tee -a logfile.txt

date | tee -a logfile.txt

df -h | tee -a logfile.txt

10. Explain with an example how shell scripting can automate system administration tasks.

Ans: Shell scripting automates repetitive system administration tasks like:

Backups

User management

Log cleanup

Software updates