

LINUX PROGRAMMING

ASSIGNMENT-8

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Q1.What is a user-defined function?

Ans:

A user-defined function is a reusable block of code defined by the user.

Example:

```
#!/bin/bash  
  
greet() {  
    echo "Welcome to Linux Scripting"  
}  
  
greet
```

Q2.Script with a function to multiply two integers.

Ans:

```
#!/bin/bash  
  
multiply() {  
    result=$(( $1 * $2 ))  
    echo "Product: $result"  
}  
  
multiply 5 4
```

Q3.Explain array declarations in bash.

Ans:

1D array:

```
arr=(10 20 30)
```

2D array (using nested loops or indices):

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

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

3D array (simulated via indexing):

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

Q4.Script to display array elements.

Ans:

```
#!/bin/bash  
arr=(10 20 30 40)  
for i in "${arr[@]}"; do  
    echo $i  
done
```

Q5.What is the purpose of cron in Linux?

Ans:

cron is a scheduler that automates repetitive tasks at specified times or intervals.

Q6.Write a cron job to run a backup script every day at midnight.

Ans:

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

Q7.How to schedule a one-time job using at command?

Ans:

at 10:00 AM

```
> /home/user/script.sh  
> <Ctrl+D>
```

Q8.Script to display disk usage using df and du.

Ans:

```
#!/bin/bash  
echo "Disk Free Space:"  
df -h  
echo "Disk Usage:"  
du -sh *
```

Q9.How can you log script output using tee?

Ans:

```
./script.sh | tee output.log
```

Displays output on screen and writes it to a log file.

Q10.Example of shell scripting automating system administration.

Ans:

Example: Automated log cleanup

```
#!/bin/bash  
  
find /var/log -name "*.log" -mtime +7 -exec rm {} \;
```

Deletes log files older than 7 days automatically.