

- 1 Write a shell script which will generate the O/P as follows

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***
****
```

```
➤ [admin@sushil ~]$ nano star_pattern.sh
for((i=1; i<=4; i++))
do
    for((j=1; j<=i; j++))
    do
        echo -n "*"
    done
    echo
done

[admin@sushil ~]$ ./star_pattern.sh
bash: ./star_pattern.sh: Permission denied
[admin@sushil ~]$ chmod +x star_pattern.sh
[admin@sushil ~]$ ./star_pattern.sh
*
**
***
****

[admin@sushil ~]$
```

- 2 Accept the first name, middle name, and last name of a person in variables fname, mname and lname respectively. Greet the person (take his full name) using appropriate message.

```
➤ [admin@sushil ~]$ nano greet.sh
read -p "Enter your first name please:" fname
read -p "Enter your middle name please:" mname
read -p "Enter your last name please:" lname
echo "Hello,$fname $mname $lname!! Welcome to world!!!"

[admin@sushil ~]$ chmod +x greet.sh
[admin@sushil ~]$ ./greet.sh
Enter your first name please:Sushil
Enter your middle name please:Suresh
Enter your last name please:Mhetre
Hello,Sushil Suresh Mhetre!! Welcome to world!!!
```

- 3 Display the name of files in the current directory along with the names of files with maximum & minimum size. The file size is considered in bytes.

➤ [admin@sushil programs]\$./sizeofiles.sh

Files in the current directory (sorted by size in bytes):

4 ./sizeofiles.sh

12 ./greet.sh.swp

File with maximum size: 12 ./greet.sh.swp

File with minimum size: 4 ./sizeofiles.sh

➤ [admin@sushil programs]\$ nano sizeofiles.sh

```
temp_file=$(mktemp)
```

```
find . -maxdepth 1 -type f ! -name "dev" ! -name "null" -exec ls -s {} + | so>
```

```
if [ -s "$temp_file" ]; then
```

```
    min=$(head -1 "$temp_file")
```

```
    max=$(tail -1 "$temp_file")
```

```
    echo "Files in the current directory (sorted by size in bytes):"
```

```
    cat "$temp_file"
```

```
    echo
```

```
    echo "File with maximum size: $max"
```

```
    echo "File with minimum size: $min"
```

```
else
```

```
    echo "No files found in the current directory."
```

```
fi
```

```
rm -f "$temp_file"
```

- 4 Write a script which when executed checks out whether it is a working day or not?

(Note: Working day Mon-Fri)

- admin@sushil programs]\$ nano weather.sh
- [admin@sushil programs]\$./weather.sh
- Enter a day of the week which you want to check: mon
- mon is a working day.

- admin@sushil programs]\$ nano weather.sh

- #!/bin/bash
-
- # user input for the day
- read -p "Enter a day of the week which you want to check: " day
-
- # Convert the input to lowercase for case-insensitive cOmparison
- day=\$(echo "\$day" | tr '[:upper:]' '[:lower:]')
-
- if echo "\$day" | grep -iqE "^(mon|tue|wed|thu|fri)\$"; then
- echo "\$day is a working day."
- else
- echo "\$day is not a working day."
- fi

- 5 Write a script that accepts a member into HP health club, if the weight of the person is withing the range of 30-250 Kgs.

```

➤ [admin@sushil ~]$ nano hp.sh
#!/bin/bash
read -p "Enter your weight in kg: " weight
if [ "$weight" -lt 30 ] || [ "$weight" -gt 250 ]; then
    echo "Sorry, your weight is outside the acceptable range (30-250 kg). You >
else
    echo "Welcome to HP Health Club! You have been successfully accepted."
fi

```

```
[admin@sushil ~]$ chmod +x hp.sh
```

```
[admin@sushil ~]$ ./hp.sh
```

Enter your weight in kg: 59

Welcome to HP Health Club! You have been successfully accepted.

- 6 Write a shell script that greets the user with an appropriate message depending on the system time.

➤ [admin@sushil programs]\$ nano timegreet.sh

➤ [admin@sushil programs]\$./timegreet.sh

➤ Enter the hour (0-23 only): 22

➤ Good Night!

➤ [admin@sushil programs]\$ nano timegreet.sh

➤ #!/bin/bash

➤ read -p "Enter the hour (0-23 only): " hour

➤ if ["\$hour" -lt 0] || ["\$hour" -ge 24]; then

➤ echo "Invalid input! Please enter a number between 0 and 23."

➤ exit 1

➤ fi

➤

➤ # Greet based on the time of day

➤ if ["\$hour" -ge 5] && ["\$hour" -lt 12]; then

➤ echo "Good Morning!"

➤ elif ["\$hour" -ge 12] && ["\$hour" -lt 17]; then

➤ echo "Good Afternoon!"

➤ elif ["\$hour" -ge 17] && ["\$hour" -lt 21]; then

➤ echo "Good Evening!"

➤ else

➤ echo "Good Night!"

➤ fi

- 7 A data file file has some student records including rollno, names and subject marks. The fields are separated by a ":". Write a shell script that accepts roll number frOm the user, searches it in the file and if the roll number is present - allows the user to modify name and marks in 3 subjects.
If the roll number is not present, display a message "Roll No Not Found". Allow the user to modify one record at a time.

➤ [admin@sushil programs]\$ nano modify_stu.sh

```
#!/bin/bash
file="studentrecord.txt"
read -p "Enter the roll number to search: " rollno
record=$(grep "^$rollno:" "$file")
if [ -n "$record" ]; then
    echo "Record found: $record"
    IFS=":" read -r roll name marks1 marks2 marks3 <<< "$record"

    # Allow user to modify name and marks for modification
    read -p "Enter new name (current: $name): " new_name
    read -p "Enter new mark for subject 1 (current: $marks1): " new_marks1
    read -p "Enter new mark for subject 2 (current: $marks2): " new_marks2
    read -p "Enter new mark for subject 3 (current: $marks3): " new_marks3

    sed -i "s/^$rollno:$name:$marks1:$marks2:$marks3$/$rollno:$new_name:$new_ma>

    echo "Record updated successfully!"
else
```

[admin@sushil programs]\$./modify_stu.sh

Enter the roll number to search: 102

Record found: 102:Om:90:95:97

Enter new name (current: Om): rameshwar

Enter new mark for subject 1 (current: 90): 95

Enter new mark for subject 2 (current: 95): 92

Enter new mark for subject 3 (current: 97): 95

Record updated successfully!

[admin@sushil programs]\$ cat studentrecord.txt

101:Ramesh:80:90:70

102:rameshwar:95:92:95

103:Sanjay:60:70:80

8 Modify program 7 to accept the RollNo from the command line.

- [admin@sushil ~]\$ nano modify_stu.sh
- # To Accept roll number
- read -p "Enter the roll number to search: " rollno
-
- [admin@sushil ~]\$./modify_stu.sh
- Enter the roll number to search: 102
- Record found: 102:rameshwar:95:92:95

9 Modify the program 7 to accept the RollNo and display the record and ask for delete confirmation. Once confirmed delete the record and update the data file.

```
➤ [admin@sushil programs]$ nano del_stu.sh

#!/bin/bash
file="studentrecord.txt"
if [ -z "$1" ]; then
    read -p "Enter the roll number to search: " rollno
else
    # Use the command line argument for roll number
    rollno=$1
fi
record=$(grep "^$rollno:" "$file")
if [ -n "$record" ]; then
    echo "Record found: $record"
    read -p "want to delete record type y : " confirm
    if [ "$confirm" == "y" ] || [ "$confirm" == "Y" ]; then

        sed -i "/^$rollno:/d" "$file"
        echo "Record deleted successfully!"
    else
```

```

    echo "Deletion aborted."
fi
else
    echo "Roll No Not Found"
fi

```

- [admin@sushil programs]\$ chmod +x del_stu.sh
- [admin@sushil programs]\$./del_stu.sh
- Enter the roll number to search: 103
- Record found: 103:Sanjay:60:70:80
- want to delete record type y : y
- Record deleted successfully!

10 Write a script that takes a command line argument and reports on its file type (regular file, directory file, etc.). For more than one argument generate error message.

```

➤ [admin@sushil ~]$ nano filereport.sh
if [ "$#" -ne 1 ]; then
    echo "Error: Please provide exactly one argument."
    echo "Usage: $0 <file_path>"
    exit 1
fi
file_path=$1
if [ -e "$file_path" ]; then
    file_type=$(file "$file_path")
    echo "$file_type"
else
    echo "Error: $file_path does not exist."
    exit 1
fi
[admin@sushil ~]$ chmod +x filereport.sh
[admin@sushil ~]$ ./filereport.sh networkrk.txt
networkrk.txt: ASCII text, with very long lines

```

```
[admin@sushil ~]$ ./filereport.sh errorfile.txt
```

Error: errorfile.txt does not exist.

```
[admin@sushil ~]$ ./filereport.sh styles
```

styles: directory

- 11 Add some student records in the “student” file manually. The fields to be considered are “RollNo”, “Name”, “Marks_Hindi”, “Marks_Maths”, “Marks_Physics”.

Write a script which does the following

- [admin@sushil ~]\$ touch student
- [admin@sushil ~]\$ vim student
- [admin@sushil ~]\$ cat student
- 101:Rajaram:70:85:92
- 102:Sanjay:70:75:80
- 103:Sushil:90:68:85
- [admin@sushil ~]\$ nano studentrec.sh
- [admin@sushil ~]\$ chmod +x studentrec.sh
- [admin@sushil ~]\$./studentrec.sh
- Enter Roll No: 104
- Enter Name: Om
- Enter Marks in Hindi: 78
- Enter Marks in Maths: 90
- Enter Marks in Physics: 89
- Total Marks: 257
- Percentage: 85%

- a If the roll number already exists, then store the record and the following message “roll number exists” in a log file “log1”.

- [admin@sushil ~]\$./studentrec.sh
- Enter Roll No: 102
- Enter Name: San
- Roll number 102 exists.

- b If the marks in the subjects is not in the range of 1 – 99 then store such a record followed by a message “marks out of range” in “log1”

- [admin@sushil ~]\$./studentrec.sh
- Enter Roll No: 106
- Enter Name: Jaya
- Enter Marks in Hindi: 90
- Enter Marks in Maths: 78
- Enter Marks in Physics: 101
- Marks out of range.

- c If the data is valid, the calculate total, percentage, grade and display on the terminal

- [admin@sushil ~]\$./studentrec.sh
- Enter Roll No: 105
- Enter Name: Sai
- Enter Marks in Hindi: 90
- Enter Marks in Maths: 34
- Enter Marks in Physics: 67
- Total Marks: 191
- Percentage: 63%