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

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[admin@hostname01 ~]$ nano patt.sh

[admin@hostname01 ~]$ chmod +x patt.sh

[admin@hostname01 ~]$ ls -l

total 8

-rw-r--r--. 1 admin admin 0 Jan 27 22:24 chap1

-rw-r--r--. 1 admin admin 0 Jan 27 22:24 chap2

-rw-r--r--. 1 admin admin 0 Jan 27 22:24 chap3

-rw-r--r--. 1 admin admin 0 Jan 27 22:24 chap9

-rw-r--r--. 1 admin admin 0 Jan 27 22:24 chapa

-rw-r--r--. 1 admin admin 0 Jan 27 22:24 chapb

-rw-r--r--. 1 admin admin 0 Jan 27 22:24 chapc

-rw-r--r--. 1 admin admin 0 Jan 27 22:24 chapz

drwxr-xr-x. 2 admin admin 36 Jan 28 19:05 Desktop

drwxr-xr-x. 2 admin admin 6 Aug 25 2022 Documents

drwxr-xr-x. 2 admin admin 50 Aug 25 2022 Downloads

drwxr-xr-x. 2 admin admin 6 Aug 25 2022 Music

-rwxr-xr-x. 1 admin admin 110 Jan 28 19:21 patt.sh

drwxr-xr-x. 2 admin admin 6 Aug 25 2022 Pictures

drwxr-xr-x. 2 admin admin 6 Aug 25 2022 Public

drwxr-xr-x. 2 admin admin 6 Aug 25 2022 Templates

-rw-r--r--. 1 admin admin 100 Jan 27 23:54 users

drwxr-xr-x. 2 admin admin 6 Aug 25 2022 Videos

[admin@hostname01 ~]$ ./patt.sh

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[admin@hostname01 ~]$

**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@hostname01 ~]$ nano greet.sh

[admin@hostname01 ~]$ chmod +x greet.sh

[admin@hostname01 ~]$ ./greet.sh

Enter your first name:Supreet

Enter your middle name:Suresh

Enter your last name:Birajdar

Hello Supreet Suresh Birajdar

[admin@hostname01 ~]$

**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@hostname01 ~]$ vim filesize.sh

[admin@hostname01 ~]$ ./filesize.sh

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

0 ./chap1

0 ./chap2

0 ./chap3

0 ./chap9

0 ./chapa

0 ./chapb

0 ./chapc

0 ./chapz

4 ./.bash\_logout

4 ./.bash\_profile

4 ./.bashrc

4 ./filesize.sh

4 ./greet.sh

4 ./patt.sh

4 ./users

8 ./.bash\_history

8 ./.viminfo

12 ./.pat.sh.swp

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

File with minimum size: 0 ./chap1

[admin@hostname01 ~]$

Vim filesize.sh:

temp\_file=$(mktemp)

find . -maxdepth 1 -type f ! -name "dev" ! -name "null" -exec ls -s {} + | sort -n > "$temp\_file"

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@hostname01 ~]$ nano weather.sh

#!/bin/bash

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

[admin@hostname01 ~]$ chmod +x weather.sh

[admin@hostname01 ~]$ ./weather.sh

Enter a day of the week which you want to check: mon

mon is a working day.

**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@hostname01 ~]$ 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 cannot join the HP Health Club."

else

echo "Welcome to HP Health Club! "

fi

[admin@hostname01 ~]$ chmod +x hp.sh

[admin@hostname01 ~]$ ./hp.sh

Enter your weight in kg: 59

Welcome to HP Health Club!

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

[admin@hostname01 ~]$ 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

[admin@hostname01 ~]$ chmod +x timegreet.sh

[admin@hostname01 ~]$ ./timegreet.sh

Enter the hour (0-23): 22

Good Night!

**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@hostname01 ~]$ nano modfify\_stu.sh

#!/bin/bash

file="student\_records.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:$new\_marks1:$new\_marks2:$new\_marks3/" "$file"

echo "Record updated successfully!"

else

# If roll number is not found

echo "Roll No Not Found"

fi

[admin@hostname01 ~]$ ./modfify\_stu.sh

Enter the roll number to search: 102

Record found: 102:Supreet:85:90:95

Enter new name (current: Supreet): Raj

Enter new mark for subject 1 (current: 85): 90

Enter new mark for subject 2 (current: 90): 95

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

Record updated successfully!

[admin@hostname01 ~]$ cat studentrecord.txt

101:Rahul:70:80:90

102:Raj:95:92:97

103:Sushil:66:76:84

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

[admin@hostname01 ~]$ nano modfify\_stu.sh

# To Accept roll number

read -p "Enter the roll number to search: " rollno

[admin@hostname01 ~]$ ./modfify\_stu.sh

Enter the roll number to search: 102

Record found: 102:Supreet: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@hostname01 ~]$ 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@hostname01 ~]$ chmod +x del\_stu.sh

[admin@hostname01 ~]$ ./del\_stu.sh

Enter the roll number to search: 103

Record found: 103:Sushil:66:76:84

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@hostname01 ~]$ 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@hostname01 ~]$ chmod +x filereport.sh

[admin@hostname01 ~]$ ./filereport.sh networrk.txt

networrk.txt: ASCII text, with very long lines

[admin@hostname01 ~]$ ./filereport.sh errorfile.txt

Error: errorfile.txt does not exist.

[admin@hostname01 ~]$ ./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”.**

admin@hostname01 ~]$ touch student

[admin@hostname01 ~]$ vim student

[admin@hostname01 ~]$ cat student

101:Supreet:97:87:90

102:Raj:70:73:86

103:Sushil:91:65:82

[admin@hostname01 ~]$ nano studentrec.sh

[admin@hostname01 ~]$ chmod +x studentrec.sh

[admin@hostname01 ~]$ ./studentrec.sh

Enter Roll No: 104

Enter Name: Om

Enter Marks in Hindi: 78

Enter Marks in Maths: 90

Enter Marks in Physics: 89

**Write a script which does the following:**

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

[admin@hostname01 ~]$ ./studentrec.sh

Enter Roll No: 102

Enter Name: Sup

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@hostname01 ~]$ ./studentrec.sh

Enter Roll No: 106

Enter Name: Priti

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@hostname01 ~]$ ./studentrec.sh

Enter Roll No: 105

Enter Name: nik

Enter Marks in Hindi: 90

Enter Marks in Maths: 34

Enter Marks in Physics: 67

Total Marks: 191

Percentage: 63%

**Below is the shell code for this :**

#!/bin/bash

student\_file="student"

log\_file="log1"

read -p "Enter Roll No: " roll\_no

read -p "Enter Name: " name

read -p "Enter Marks in Hindi: " marks\_hindi

read -p "Enter Marks in Maths: " marks\_maths

read -p "Enter Marks in Physics: " marks\_physics

#Here I have checked for roll number already exists or not

if grep -q "^$roll\_no:" "$student\_file"; then

echo "Roll number $roll\_no exists."

echo "roll number exists" >> "$log\_file"

exit 1

fi

#Here I have checked for its in range or not

if [ "$marks\_hindi" -lt 1 ] || [ "$marks\_hindi" -gt 99 ] || [ "$marks\_maths" -lt 1 ] || [ "$marks\_maths" -gt 99 ] || [ "$marks\_physics" -lt 1 ] || [ "$marks\_physics" -gt 99 ]; then

echo "Marks out of range."

echo "marks out of range" >> "$log\_file"

exit 1

fi

echo "$roll\_no:$name:$marks\_hindi:$marks\_maths:$marks\_physics" >> "$student\_file"

total=$((marks\_hindi + marks\_maths + marks\_physics))

percentage=$((total / 3))

echo "Total Marks: $total"

echo "Percentage: $percentage%"