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

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**Script is as follows🡪**

**#!/bin/bash**

**for ((i=1; i<=4; i++)); do**

**for ((j=1; j<=i; j++)); do**

**echo -n "\*"**

**done**

**echo**

**done**

1. 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.

**#!/bin/bash**

**read -p "Enter First Name: " fname**

**read -p "Enter Middle Name: " mname**

**read -p "Enter Last Name: " lname**

**echo "Hello Swayamsiddha A Mane Deshmukh, welcome!"**

1. 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.

**#!/bin/bash**

**ls -l | awk 'NR>1 {print $9, $5}' | sort -nk2**

**max\_file=$(ls -S | head -1)**

**min\_file=$(ls -Sr | head -1)**

**echo "File with Maximum Size: $max\_file"**

**echo "File with Minimum Size: $min\_file"**

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

(Note: Working day Mon-Fri)

**#!/bin/bash**

**day=$(date +%u)**

**if [[ $day -le 5 ]]; then**

**echo "It's a working day."**

**else**

**echo "It's not a working day."**

**fi**

1. 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.

**#!/bin/bash**

**read -p "Enter your weight in Kgs: " weight**

**if [[ $weight -ge 30 && $weight -le 250 ]]; then**

**echo "Welcome to the HP Health Club!"**

**else**

**echo "Sorry, your weight is outside the acceptable range."**

**fi**

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

**#!/bin/bash**

**hour=$(date +%H)**

**if [[ $hour -lt 12 ]]; then**

**echo "Good Morning!"**

**elif [[ $hour -lt 18 ]]; then**

**echo "Good Afternoon!"**

**else**

**echo "Good Evening!"**

**fi**

1. 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.

**#!/bin/bash**

**file="students.txt"**

**# Accept roll number**

**read -p "Enter Roll Number: " roll\_no**

**# Search for the roll number**

**record=$(grep "^$roll\_no:" "$file")**

**if [ -z "$record" ]; then**

**echo "Roll No Not Found"**

**else**

**echo "Current Record: $record"**

**read -p "Enter New Name: " name**

**read -p "Enter New Marks for Hindi: " marks\_hindi**

**read -p "Enter New Marks for Maths: " marks\_maths**

**read -p "Enter New Marks for Physics: " marks\_physics**

**# Create new record**

**new\_record="$roll\_no:$name:$marks\_hindi:$marks\_maths:$marks\_physics"**

**sed -i "s|^$record|$new\_record|" "$file"**

**echo "Record Updated Successfully"**

**fi**

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

**#!/bin/bash**

**file="students.txt"**

**# Check if roll number is provided**

**if [ -z "$1" ]; then**

**echo "Usage: $0 <Roll Number>"**

**exit 1**

**fi**

**roll\_no="$1"**

**record=$(grep "^$roll\_no:" "$file")**

**if [ -z "$record" ]; then**

**echo "Roll No Not Found"**

**else**

**echo "Current Record: $record"**

**read -p "Enter New Name: " name**

**read -p "Enter New Marks for Hindi: " marks\_hindi**

**read -p "Enter New Marks for Maths: " marks\_maths**

**read -p "Enter New Marks for Physics: " marks\_physics"**

**new\_record="$roll\_no:$name:$marks\_hindi:$marks\_maths:$marks\_physics"**

**sed -i "s|^$record|$new\_record|" "$file"**

**echo "Record Updated Successfully"**

**fi**

1. 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.

**#!/bin/bash**

**file="students.txt"**

**# Check if roll number is provided**

**if [ -z "$1" ]; then**

**echo "Usage: $0 <Roll Number>"**

**exit 1**

**fi**

**roll\_no="$1"**

**record=$(grep "^$roll\_no:" "$file")**

**if [ -z "$record" ]; then**

**echo "Roll No Not Found"**

**else**

**echo "Record Found: $record"**

**read -p "Are you sure you want to delete this record? (y/n): " confirm**

**if [[ "$confirm" == "y" || "$confirm" == "Y" ]]; then**

**sed -i "/^$roll\_no:/d" "$file"**

**echo "Record Deleted Successfully"**

**else**

**echo "Delete Operation Cancelled"**

**fi**

**fi**

1. 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.

**#!/bin/bash**

**if [ "$#" -ne 1 ]; then**

**echo "Usage: $0 <filename>"**

**exit 1**

**fi**

**file="$1"**

**if [ -e "$file" ]; then**

**if [ -f "$file" ]; then**

**echo "$file is a regular file."**

**elif [ -d "$file" ]; then**

**echo "$file is a directory."**

**else**

**echo "$file is of an unknown type."**

**fi**

**else**

**echo "File does not exist."**

**fi**

1. 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
   1. If the roll number already exists, then store the record and the following message   
      “roll number exists” in a log file “log1”.
   2. 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”
   3. If the data is valid, the calculate total, percentage, grade and display on the terminal

**#!/bin/bash**

**file="students.txt"**

**log="log1"**

**read -p "Enter Roll Number: " roll\_no**

**read -p "Enter Name: " name**

**read -p "Enter Marks for Hindi: " marks\_hindi**

**read -p "Enter Marks for Maths: " marks\_maths**

**read -p "Enter Marks for Physics: " marks\_physics**

**record="$roll\_no:$name:$marks\_hindi:$marks\_maths:$marks\_physics"**

**if grep -q "^$roll\_no:" "$file"; then**

**echo "$record - roll number exists" >> "$log"**

**echo "Roll number exists. Logged to $log."**

**elif [[ $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 "$record - marks out of range" >> "$log"**

**echo "Marks out of range. Logged to $log."**

**else**

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

**percentage=$((total / 3))**

**if [ "$percentage" -ge 90 ]; then**

**grade="A"**

**elif [ "$percentage" -ge 75 ]; then**

**grade="B"**

**elif [ "$percentage" -ge 50 ]; then**

**grade="C"**

**else**

**grade="D"**

**fi**

**echo "$record:$total:$percentage:$grade" >> "$file"**

**echo "Record Added Successfully with Total=$total, Percentage=$percentage%, Grade=$grade."**

**fi**