PRACTICAL 2:

Aim: Automate student marksheet generation, system information display, Fibonacci and prime number generation, and file management operations using shell scripts to enhance computational efficiency and user interaction.

a) Write a shell script to generate mark- sheet of a student. Take 3 subjects, calculate and display total marks, percentage and Class obtained by the student.

```
Pranjali@DESKTOP-1KIKHDU MINGW64 ~/OneDrive/Desktop/OS_CD24032 (master)
$ echo "Enter marks of English"
read m1
echo "Enter marks of Maths"
read m2
echo "Enter marks of Science"
read m3
total=$(($m1+$m2+$m3))
percentage=$((total/3))
echo "Student: Total Marks = $total"
echo "Percentage = $percentage"
if [ $percentage -ge 75 ]; then
        echo "Class: Distinction"
elif [ $percentage -ge 60 ]; then
        echo "Class: First Class"
elif [ $percentage -ge 40 ]; then
        echo "Class: Second Class"
elif [ $percentage -ge 35 ]; then
        echo "Class: Third Class"
else
        echo "Class Fail"
fi
Enter marks of English
67
Enter marks of Maths
45
Enter marks of Science
58
Student: Total Marks = 170
Percentage = 56
Class: Second Class

Pranjali@DESKTOP-1KIKHDU MINGW64 ~/OneDrive/Desktop/OS_CD24032 (master)
$
```

b) Write a menu driven shell script which will print the following menu and execute the given task.

• Display calendar of current month.

```
Pranjali@DESKTOP-1KIKHDU MINGW64 ~/OneDrive/Desktop/OS_CD24032 (master)
$ cho "1. Calendar of current month"
echo "2. Today's date and time"
echo "3. Logged in users"
echo "4. Terminal number"

echo "Enter your choice"
read ch

if [ $ch -eq 1 ]; then
    date +"%B %Y"
elif [ $ch -eq 2 ]; then
    date
elif [ $ch -eq 3 ]; then
    who
elif [ $ch -eq 4 ]; then
    tty
else
    echo "Invalid choice"
fi
bash: cho: command not found
2. Today's date and time
3. Logged in users
4. Terminal number
Enter your choice
1
January 2026

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$
```

• Display today’s date and time

```
Pranjali@DESKTOP-1KIKHDU MINGW64 ~/OneDrive/Desktop/OS_CD24032 (master)
$ cho "1. Calendar of current month"
echo "2. Today's date and time"
echo "3. Logged in users"
echo "4. Terminal number"

echo "Enter your choice"
read ch

if [ $ch -eq 1 ]; then
    date +"%B %Y"
elif [ $ch -eq 2 ]; then
    date
elif [ $ch -eq 3 ]; then
    who
elif [ $ch -eq 4 ]; then
    tty
else
    echo "Invalid choice"
fi
bash: cho: command not found
2. Today's date and time
3. Logged in users
4. Terminal number
Enter your choice
2
Fri Jan 30 16:21:05 IST 2026

Pranjali@DESKTOP-1KIKHDU MINGW64 ~/OneDrive/Desktop/OS_CD24032 (master)
$
```

• Display usernames those are currently logged in the system.

```
Pranjali@DESKTOP-1KIKHDU MINGW64 ~/OneDrive/Desktop/OS_CD24032 (master)
$ echo "MENU"
echo "1. Display calendar of current month"
echo "2. Display today's date and time"
echo "3. Display usernames currently logged in"
echo "4. Display your terminal number"
echo "Enter your choice:"
read choice

if [ "$choice" -eq 1 ]; then
    echo "Calendar of current month:"
    date +"%B %Y"

elif [ "$choice" -eq 2 ]; then
    echo "Today's date and time:"
    date

elif [ "$choice" -eq 3 ]; then
    echo "Users currently logged in:"
    whoami

elif [ "$choice" -eq 4 ]; then
    echo "Your terminal number:"
    echo "$TERM"

else
    echo "Invalid choice"
fi
MENU
1. Display calendar of current month
2. Display today's date and time
3. Display usernames currently logged in
4. Display your terminal number
Enter your choice:
3

Users currently logged in:
Pranjali

Pranjali@DESKTOP-1KIKHDU MINGW64 ~/OneDrive/Desktop/OS_CD24032 (master)
$

Pranjali@DESKTOP-1KIKHDU MINGW64 ~/OneDrive/Desktop/OS_CD24032 (master)
$
```

• Display your terminal number

```
Pranjali@DESKTOP-1KIKHDU MINGW64 ~/OneDrive/Desktop/OS_CD24032 (master)
$ echo "MENU"
echo "1. Display calendar of current month"
echo "2. Display today's date and time"
echo "3. Display usernames currently logged in"
echo "4. Display your terminal number"
echo "Enter your choice:"
read choice

if [ "$choice" -eq 1 ]; then
    echo "Calendar of current month:"
    date +"%B %Y"

elif [ "$choice" -eq 2 ]; then
    echo "Today's date and time:"
    date

elif [ "$choice" -eq 3 ]; then
    echo "Users currently logged in:"
    whoami

elif [ "$choice" -eq 4 ]; then
    echo "Your terminal number:"
    echo "$TERM"

else
    echo "Invalid choice"
fi
MENU
1. Display calendar of current month
2. Display today's date and time
3. Display usernames currently logged in
4. Display your terminal number
Enter your choice:
4
Your terminal number:
xterm

Pranjali@DESKTOP-1KIKHDU MINGW64 ~/OneDrive/Desktop/OS_CD24032 (master)
$
```

c) Write a shell script which will generate first n Fibonacci numbers like: 1, 1, 2, 3, 5, 13

```
Pranjali@DESKTOP-1KIKHDU MINGW64 ~/OneDrive/Desktop/OS_CD24032 (master)
$ #!/bin/bash

echo "Enter how many Fibonacci numbers you want"
read n

a=1
b=1

echo "Fibonacci Series:"

if [ "$n" -ge 1 ]; then
    printf "%d " "$a"
fi

if [ "$n" -ge 2 ]; then
    printf "%d " "$b"
fi

for (( i=3; i<=n; i++ ))
do
    c=$((a + b))
    printf "%d " "$c"
    a=$b
    b=$c
done

echo
Enter how many Fibonacci numbers you want
7
Fibonacci Series:
1 1 2 3 5 8 13

Pranjali@DESKTOP-1KIKHDU MINGW64 ~/OneDrive/Desktop/OS_CD24032 (master)
$
```

d) Write a shell script which will accept a number b and display first n prime numbers as output

```
Pranjali@DESKTOP-1KIKHDU MINGW64 ~/OneDrive/Desktop/OS_CD24032 (master)
$ #!/bin/bash

echo "Enter the value of n"
read n

count=0
num=2

echo "First $n prime numbers are:"

while [ $count -lt $n ]
do
    flag=0

    for (( i=2; i<=num/2; i++ ))
    do
        if [ $((num % i)) -eq 0 ]; then
            flag=1
            break
        fi
    done

    if [ $flag -eq 0 ]; then
        echo -n "$num "
        count=$((count + 1))
    fi

    num=$((num + 1))
done

echo
Enter the value of n
8
First 8 prime numbers are:
2 3 5 7 11 13 17 19

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$
```

e) Write menu driven program for file handling activity

• Creation of file.

```
Pranjali@DESKTOP-1KIKHDU MINGW64 ~/OneDrive/Desktop/OS_CD24032 (master)
$ #!/bin/bash

echo "1) Create File"
echo "2) Write Content"
echo "3) Append Content"
echo "4) Delete File Content"
echo "Enter choice:"
read ch

echo "Enter file name:"
read fname

case $ch in
1)
    touch $fname
    echo "File created"
    ;;
2)
    echo "Enter content (Ctrl+D to save):"
    cat > $fname
    ;;
3)
    echo "Enter content to append (Ctrl+D to save):"
    cat >> $fname
    ;;
4)
    > $fname
    echo "File content deleted"
    ;;
*)
    echo "Invalid choice"
    ;;
esac
1) Create File
2) Write Content
3) Append Content
4) Delete File Content
Enter choice:
1
Enter file name:
Pranjali
File created

Pranjali@DESKTOP-1KIKHDU MINGW64 ~/OneDrive/Desktop/OS_CD24032 (master)
$
```

• Write content in the file.

```
Pranjali@DESKTOP-1KIKHDU MINGW64 ~/OneDrive/Desktop/OS_CD24032 (master)
$ #!/bin/bash

echo "1) Create File"
echo "2) Write Content"
echo "3) Append Content"
echo "4) Delete File Content"
echo "Enter choice:"
read ch

echo "Enter file name:"
read fname

case $ch in
1)
    touch $fname
    echo "File created"
    ;;
2)
    echo "Enter content (Ctrl+D to save):"
    cat > $fname
    ;;
3)
    echo "Enter content to append (Ctrl+D to save):"
    cat >> $fname
    ;;
4)
    > $fname
    echo "File content deleted"
    ;;
*)
    echo "Invalid choice"
    ;;
esac
1) Create File
2) Write Content
3) Append Content
4) Delete File Content
Enter choice:
2
Enter file name:
Pranjali
Enter content (Ctrl+D to save):
content written successfully.
```

• Append file content

```
Pranjali@DESKTOP-1KIKHDU MINGW64 ~/OneDrive/Desktop/OS_CD24032 (master)
$ #!/bin/bash

echo "1) Create File"
echo "2) Write Content"
echo "3) Append Content"
echo "4) Delete File Content"
echo "Enter choice:"
read ch

echo "Enter file name:"
read fname

case $ch in
1)
    touch $fname
    echo "File created"
    ;;
2)
    echo "Enter content (Ctrl+D to save):"
    cat > $fname
    ;;
3)
    echo "Enter content to append (Ctrl+D to save):"
    cat >> $fname
    ;;
4)
    > $fname
    echo "File content deleted"
    ;;
*)
    echo "Invalid choice"
    ;;
esac
1) Create File
2) Write Content
3) Append Content
4) Delete File Content
Enter choice:
3
Enter file name:
Pranjali
Enter content to append (Ctrl+D to save):
content appended successfully.
```

• Delete file content

```
Pranjali@DESKTOP-1KIKHDU MINGW64 ~/OneDrive/Desktop/OS_CD24032 (master)
$ #!/bin/bash

echo "1) Create File"
echo "2) Write Content"
echo "3) Append Content"
echo "4) Delete File Content"
echo "Enter choice:"
read ch

echo "Enter file name:"
read fname

case $ch in
1)
    touch $fname
    echo "File created"
    ;;
2)
    echo "Enter content (Ctrl+D to save):"
    cat > $fname
    ;;
3)
    echo "Enter content to append (Ctrl+D to save):"
    cat >> $fname
    ;;
4)
    > $fname
    echo "File content deleted"
    ;;
*)
    echo "Invalid choice"
    ;;
esac
1) Create File
2) Write Content
3) Append Content
4) Delete File Content
Enter choice:
4
Enter file name:
Pranjali
File content deleted

Pranjali@DESKTOP-1KIKHDU MINGW64 ~/OneDrive/Desktop/OS_CD24032 (master)
$
```