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.

MINGW64:/c/Users/91942/OneDrive/Desktop/OS_CD24026

```
91942@ANUSHA MINGW64 ~/OneDrive/Desktop (master)
$ git init
Initialized empty Git repository in C:/Users/91942/OneDrive/Desktop/.git/

91942@ANUSHA MINGW64 ~/OneDrive/Desktop (master)
$ cd OS_CD24026

91942@ANUSHA MINGW64 ~/OneDrive/Desktop/OS_CD24026 (main)
$ #!/bin/bash

echo "Enter marks for Subject 1:"
read m1
echo "Enter marks for Subject 2:"
read m2
echo "Enter marks for Subject 3:"
read m3

total=$((m1 + m2 + m3))
percentage=$((total / 3))

echo "------------------------"
echo "Total Marks : $total"
echo "Percentage  : $percentage %"

if [ $percentage -ge 60 ]; then
    echo "Class Obtained: First Class"
elif [ $percentage -ge 50 ]; then
    echo "Class Obtained: Second Class"
elif [ $percentage -ge 40 ]; then
    echo "Class Obtained: Pass"
else
    echo "Class Obtained: Fail"
fi
Enter marks for Subject 1:
80
Enter marks for Subject 2:
90
Enter marks for Subject 3:
60
------------------------
Total Marks : 230
Percentage  : 76 %
Class Obtained: First Class

91942@ANUSHA MINGW64 ~/OneDrive/Desktop/OS_CD24026 (main)
$ |
```

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

   • Display calendar of current month.

   • Display today's date and time

• Display usernames those are currently logged in the system.

```
91942@ANUSHA MINGW64 ~/OneDrive/Desktop/OS_CD24026 (main)
$ 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:
91942
```

• Display your terminal number

```
91942@ANUSHA MINGW64 ~/OneDrive/Desktop/OS_CD24026 (main)
$ 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

91942@ANUSHA MINGW64 ~/OneDrive/Desktop/OS_CD24026 (main)
```

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

```
91942@ANUSHA MINGW64 ~/OneDrive/Desktop/OS_CD24026 (main)
$

echo "Enter value of n:"
read n

a=1
b=1

echo "Fibonacci Series:"
for ((i=1; i<=n; i++));
do
    echo -n "$a "
    fn=$((a + b))
    a=$b
    b=$fn
done
echo
Enter value of n:
7
Fibonacci Series:
1 1 2 3 5 8 13
```

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

```
91942@ANUSHA MINGW64 ~/OneDrive/Desktop/OS_CD24026 (main)
$ echo "Enter value of n:"
read n

count=0
num=2

echo "First $n Prime Numbers:"
while [ $count -lt $n ]
do
    flag=1
    for ((i=2; i<=num/2; i++))
    do
        if [ $((num % i)) -eq 0 ]; then
            flag=0
            break
        fi
    done

    if [ $flag -eq 1 ]; then
        echo -n "$num "
        count=$((count + 1))
    fi
    num=$((num + 1))
done
echo
Enter value of n:
8
First 8 Prime Numbers:
2 3 5 7 11 13 17 19
```

e) Write menu driven program for file handling activity
• Creation of file.


```
91942@ANUSHA MINGW64 ~/OneDrive/Desktop/OS_CD24026 (main)
$ echo "----- FILE HANDLING MENU -----"
echo "1. Create a file"
echo "2. Write content to file"
echo "3. Append file content"
echo "4. Delete file content"
echo "Enter your choice:"
read choice

echo "Enter filename:"
read fname

if [ "$choice" -eq 1 ]; then
    touch "$fname"
    echo "File created successfully"

elif [ "$choice" -eq 2 ]; then
    echo "Enter content to write (Press Ctrl+D to save):"
    cat > "$fname"
    echo "Content written successfully"

elif [ "$choice" -eq 3 ]; then
    echo "Enter content to append (Press Ctrl+D to save):"
    cat >> "$fname"
    echo "Content appended successfully"

elif [ "$choice" -eq 4 ]; then
    > "$fname"
    echo "File content deleted successfully"

else
    echo "Invalid choice"
fi
----- FILE HANDLING MENU -----
1. Create a file
2. Write content to file
3. Append file content
4. Delete file content
Enter your choice:
1
Enter filename:
Palak
File created successfully
```

• Write content in the file.


```
91942@ANUSHA MINGW64 ~/OneDrive/Desktop/OS_CD24026 (main)
$  echo "----- FILE HANDLING MENU -----"
echo "1. Create a file"
echo "2. Write content to file"
echo "3. Append file content"
echo "4. Delete file content"
echo "Enter your choice:"
read choice

echo "Enter filename:"
read fname

if [ "$choice" -eq 1 ]; then
    touch "$fname"
    echo "File created successfully"

elif [ "$choice" -eq 2 ]; then
    echo "Enter content to write (Press Ctrl+D to save):"
    cat > "$fname"
    echo "Content written successfully"

elif [ "$choice" -eq 3 ]; then
    echo "Enter content to append (Press Ctrl+D to save):"
    cat >> "$fname"
    echo "Content appended successfully"

elif [ "$choice" -eq 4 ]; then
    > "$fname"
    echo "File content deleted successfully"

else
    echo "Invalid choice"
fi
----- FILE HANDLING MENU -----
1. Create a file
2. Write content to file
3. Append file content
4. Delete file content
Enter your choice:
2
Enter filename:
Palak
Enter content to write (Press Ctrl+D to save):
Content written successfully
```

• Append file content

```
91942@ANUSHA MINGW64 ~/OneDrive/Desktop/OS_CD24026 (main)
$    echo "----- FILE HANDLING MENU -----"
echo "1. Create a file"
echo "2. Write content to file"
echo "3. Append file content"
echo "4. Delete file content"
echo "Enter your choice:"
read choice

echo "Enter filename:"
read fname

if [ "$choice" -eq 1 ]; then
    touch "$fname"
    echo "File created successfully"

elif [ "$choice" -eq 2 ]; then
    echo "Enter content to write (Press Ctrl+D to save):"
    cat > "$fname"
    echo "Content written successfully"

elif [ "$choice" -eq 3 ]; then
    echo "Enter content to append (Press Ctrl+D to save):"
    cat >> "$fname"
    echo "Content appended successfully"

elif [ "$choice" -eq 4 ]; then
    > "$fname"
    echo "File content deleted successfully"

else
    echo "Invalid choice"
fi
----- FILE HANDLING MENU -----
1. Create a file
2. Write content to file
3. Append file content
4. Delete file content
Enter your choice:
3
Enter filename:
Palak
Enter content to append (Press Ctrl+D to save):
Content appended successfully
```

• Delete file content

```
91942@ANUSHA MINGW64 ~/OneDrive/Desktop/OS_CD24026 (main)
$    echo "----- FILE HANDLING MENU -----"
echo "1. Create a file"
echo "2. Write content to file"
echo "3. Append file content"
echo "4. Delete file content"
echo "Enter your choice:"
read choice

echo "Enter filename:"
read fname

if [ "$choice" -eq 1 ]; then
    touch "$fname"
    echo "File created successfully"

elif [ "$choice" -eq 2 ]; then
    echo "Enter content to write (Press Ctrl+D to save):"
    cat > "$fname"
    echo "Content written successfully"

elif [ "$choice" -eq 3 ]; then
    echo "Enter content to append (Press Ctrl+D to save):"
    cat >> "$fname"
    echo "Content appended successfully"

elif [ "$choice" -eq 4 ]; then
    > "$fname"
    echo "File content deleted successfully"

else
    echo "Invalid choice"
fi
----- FILE HANDLING MENU -----
1. Create a file
2. Write content to file
3. Append file content
4. Delete file content
Enter your choice:
4
Enter filename:
Palak
File content deleted successfully
```