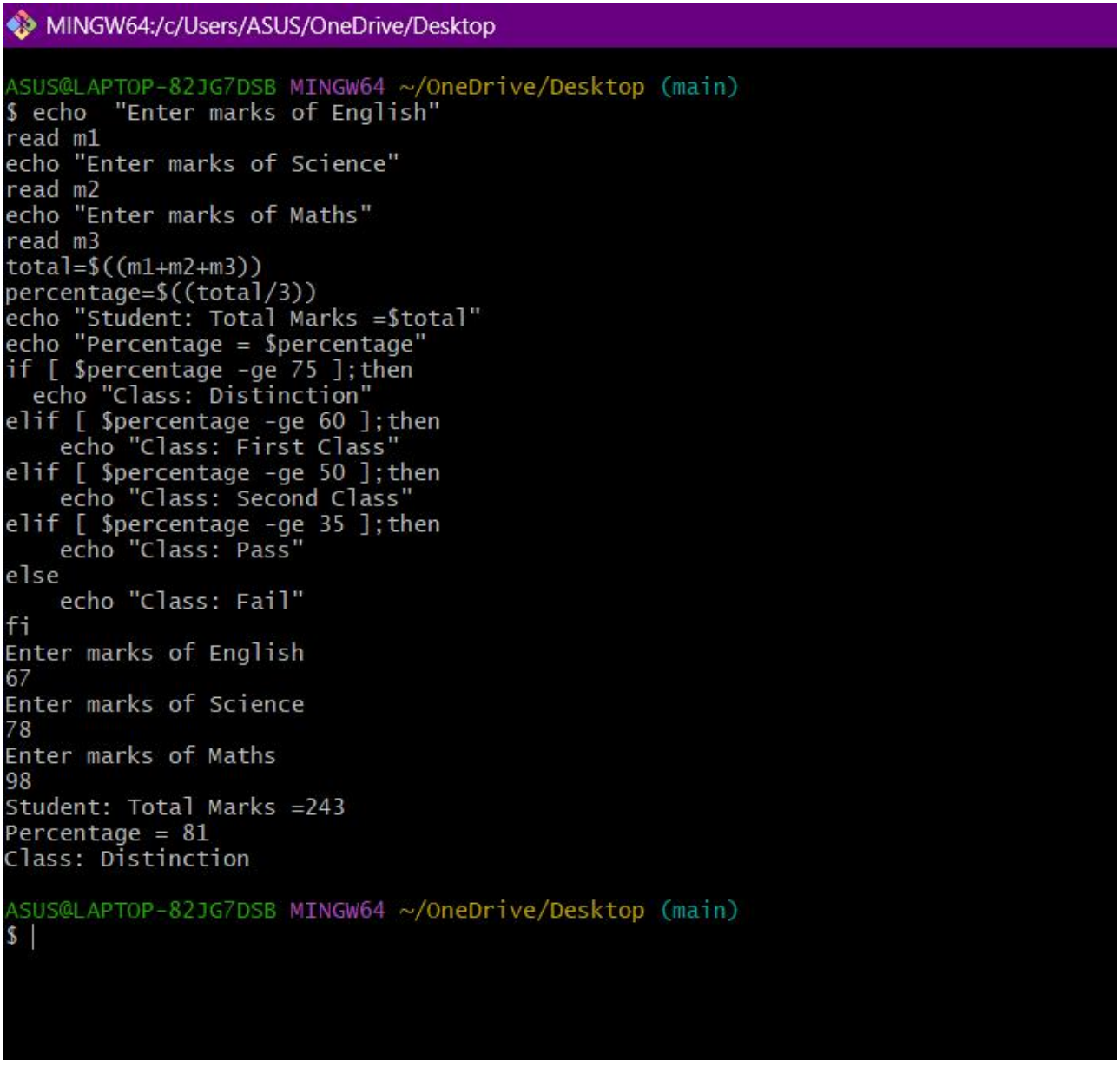
Aim: Automate student marksheet generation, system information display, Fibonacci and prime number generation, and file management operations using shell scripts to enhance computational efficiency and user interaction.

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.



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

- Display calendar of current month.

```
ASUS@LAPTOP-82JG7DSB MINGW64 ~/OneDrive/Desktop (main)
$ #!/bin/bash

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:
1
Calendar of current month:
January 2026
```

- Display today’s date and time

```
ASUS@LAPTOP-82JG7DSB MINGW64 ~/OneDrive/Desktop (main)
$ #!/bin/bash

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:
2
Today's date and time:
Sat Jan 24 17:55:18 IST 2026

ASUS@LAPTOP-82JG7DSB MINGW64 ~/OneDrive/Desktop (main)
$
```

- Display usernames those are currently logged in the system.

```
ASUS@LAPTOP-82JG7DSB MINGW64 ~/OneDrive/Desktop (main)
$ #!/bin/bash

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:
ASUS

ASUS@LAPTOP-82JG7DSB MINGW64 ~/OneDrive/Desktop (main)
$
```

- Display your terminal number

```
ASUS@LAPTOP-82JG7DSB MINGW64 ~/OneDrive/Desktop (main)
$ #!/bin/bash

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

ASUS@LAPTOP-82JG7DSB MINGW64 ~/OneDrive/Desktop (main)
$
```

c)

Write a shell script which will generate first n Fibonacci numbers like: 1, 1,

```
ASUS@LAPTOP-82JG7DSB MINGW64 ~/OneDrive/Desktop (main)
$ #!/bin/bash

echo "Enter the value of n"
read n

a=1
b=1

echo "Fibonacci series:"

for (( i=1; i<=n; i++ ))
do
    echo -n "$a "
    c=$((a + b))
    a=$b
    b=$c
done

echo
Enter the value of n
6
Fibonacci series:
1 1 2 3 5 8

ASUS@LAPTOP-82JG7DSB MINGW64 ~/OneDrive/Desktop (main)
$
```

d)

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

```
ASUS@LAPTOP-82JG7DSB MINGW64 ~/OneDrive/Desktop (main)
$ #!/bin/bash

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

ASUS@LAPTOP-82JG7DSB MINGW64 ~/OneDrive/Desktop (main)
$
```

e)

Write menu driven program for file handling activity •

Creation of file.

```
ASUS@LAPTOP-82JG7DSB MINGW64 ~/OneDrive/Desktop (main)
$ echo "FILE HANDLING MENU";
echo "1. Create a file";
echo "2. Write content in the file";
echo "3. Append file content";
echo "4. Delete file content";

echo "Enter your choice:";
read choice;

echo "Enter file name:";
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 in the file
3. Append file content
4. Delete file content
Enter your choice:
1
Enter file name:
Deepika
File created successfully

ASUS@LAPTOP-82JG7DSB MINGW64 ~/OneDrive/Desktop (main)
$
```

f)

- Write content in the file

```
ASUS@LAPTOP-82JG7DSB MINGW64 ~/OneDrive/Desktop (main)
$ echo "FILE HANDLING MENU";
echo "1. Create a file";
echo "2. Write content in the file";
echo "3. Append file content";
echo "4. Delete file content";

echo "Enter your choice:";
read choice;

echo "Enter file name:";
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 in the file
3. Append file content
4. Delete file content
Enter your choice:
2
Enter file name:
Deepika
Enter content to write (Press Ctrl+D to save):
Content written successfully

ASUS@LAPTOP-82JG7DSB MINGW64 ~/OneDrive/Desktop (main)
$
```

- Upend file content

```
ASUS@LAPTOP-82JG7DSB MINGW64 ~/OneDrive/Desktop (main)
$ echo "FILE HANDLING MENU";
echo "1. Create a file";
echo "2. Write content in the file";
echo "3. Append file content";
echo "4. Delete file content";

echo "Enter your choice:";
read choice;

echo "Enter file name:";
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 in the file
3. Append file content
4. Delete file content
Enter your choice:
3
Enter file name:
Deepika
Enter content to append (Press Ctrl+D to save):
Content appended successfully

ASUS@LAPTOP-82JG7DSB MINGW64 ~/OneDrive/Desktop (main)
$
```

- Delete file content

```
ASUS@LAPTOP-82JG7DSB MINGW64 ~/OneDrive/Desktop (main)
$ echo "FILE HANDLING MENU";
echo "1. Create a file";
echo "2. Write content in the file";
echo "3. Append file content";
echo "4. Delete file content";

echo "Enter your choice:";
read choice;

echo "Enter file name:";
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 in the file
3. Append file content
4. Delete file content
Enter your choice:
4
Enter file name:
Deepika
File content deleted successfully

ASUS@LAPTOP-82JG7DSB MINGW64 ~/OneDrive/Desktop (main)
$
```