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/ASUS/OneDrive/Desktop/OS_CD24038
ASUS@LAPTOP-2NO9296E MINGW64 ~/OneDrive/Desktop (master)
$ git init
Reinitialized existing Git repository in C:/Users/ASUS/OneDrive/Desktop/.git/

ASUS@LAPTOP-2NO9296E MINGW64 ~/OneDrive/Desktop (master)
$ cd OS_CD24038

ASUS@LAPTOP-2NO9296E MINGW64 ~/OneDrive/Desktop/OS_CD24038 (main)
$ echo "Enter marks of English : "
read m1
echo "Enter marks of Maths : "
read m2
echo "Enter marks of C Programming : "
read m3
echo "Enter marks of Java : "
read m4
echo "Enter marks of Python : "
read m5
total=$((m1+m2+m3+m4+m5))
per=$((total * 100 / 500))
echo "Student's Total Marks : $total"
echo "Percentage : $per"
if [ $per -ge 75 ]; then
        echo "Class : Distiction"
elif [ $per -ge 60 ]; then
        echo "Class : First Class"
elif [ $per -ge 50 ]; then
        echo "Class : Second Class"
elif [ $per -ge 40 ]; then
        echo "Class : Pass"
else
        echo "Class : Fail"
fi
Enter marks of English :
80
Enter marks of Maths :
66
Enter marks of C Programming :
75
Enter marks of Java :
65
Enter marks of Python :
90
Student's Total Marks : 376
Percentage : 75
Class : Distiction
```

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

- Display calendar of current month.

MINGW64:/c/Users/ASUS/OneDrive/Desktop/OS_CD24038

```
ASUS@LAPTOP-2NO9296E MINGW64 ~/OneDrive/Desktop/OS_CD24038 (main)
$ echo "----------------------------"
echo "          MENU"
echo "----------------------------"
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 "----------------------------"

echo "Enter your choice:"
read ch

case $ch in
    1)
        date "+%B %Y"
        ;;
    2)
        date
        ;;
    3)
        who
        ;;
    4)
        tty
        ;;
    *)
        echo "Invalid Choice"
        ;;
esac
----------------------------
          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
January 2026
```

- Display today’s date and time

```
----------------------------
          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
Sat Jan 24 22:35:27 IST 2026
```

- Display usernames those are currently logged in the system.

```
----------------------------
          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

ASUS@LAPTOP-2NO9296E MINGW64 ~/OneDrive/Desktop/OS_CD24038 (main)
```

- Display your terminal number

```
----------------------------
          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
/dev/pty0
```

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

MINGW64:/c/Users/ASUS/OneDrive/Desktop/OS_CD24038

```
ASUS@LAPTOP-2NO9296E MINGW64 ~/OneDrive/Desktop/OS_CD24038 (main)
$ echo "Enter number of terms:"
read n

a=1
b=1

echo "Fibonacci Series:"

echo -n "$a $b "

for ((i=3; i<=n; i++))
do
    c=$((a + b))
    echo -n "$c "
    a=$b
    b=$c
done

echo
Enter number of terms:
5
Fibonacci Series:
1 1 2 3 5
```

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

MINGW64:/c/Users/ASUS/OneDrive/Desktop/OS_CD24038

```
ASUS@LAPTOP-2NO9296E MINGW64 ~/OneDrive/Desktop/OS_CD24038 (main)
$ echo "Enter how many prime numbers you want:"
read n

count=0
num=2

echo "Prime Numbers:"

while [ $count -lt $n ]
do
    i=2
    flag=1

    while [ $i -lt $num ]
    do
        if [ $((num % i)) -eq 0 ]; then
            flag=0
            break
        fi
        i=$((i + 1))
    done

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

    num=$((num + 1))
done

echo
Enter how many prime numbers you want:
6
Prime Numbers:
2 3 5 7 11 13
```

e) Write menu driven program for file handling activity

- Creation of file.

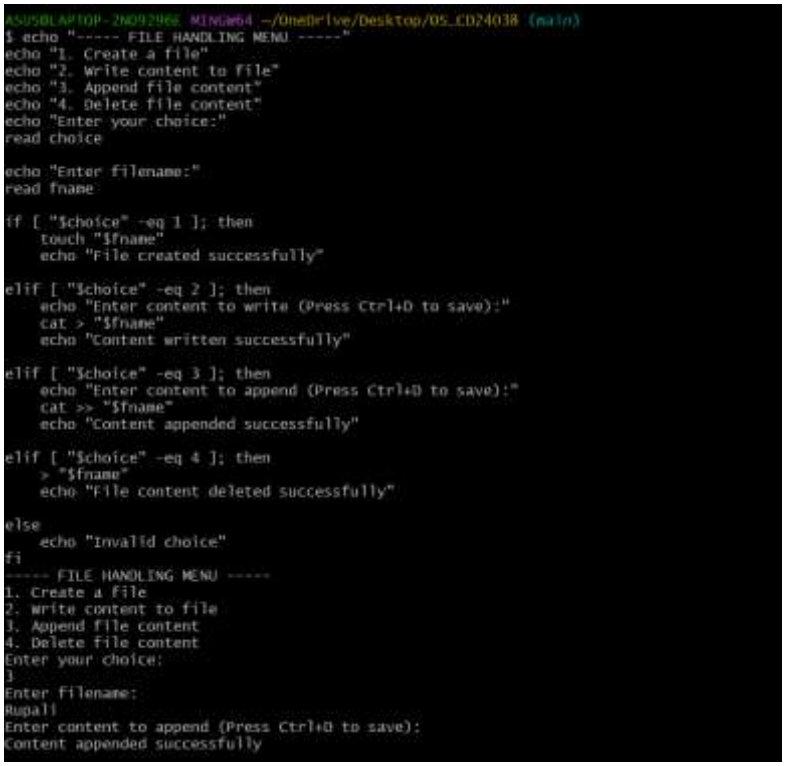
MINGW64:/c/Users/ASUS/OneDrive/Desktop/OS_CD24038

```
ASUS@LAPTOP-2NO9296E MINGW64 ~/OneDrive/Desktop/OS_CD24038 (main)
$ echo "----------------------------"
echo "     FILE HANDLING MENU"
echo "----------------------------"
echo "1. Create a file"
echo "2. Write content in file"
echo "3. Append file content"
echo "4. Delete file content"
echo "----------------------------"

echo "Enter your choice:"
read ch

echo "Enter file name:"
read fname

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

- Write content in the file.

```
ASUS@LAPTOP-2NO9296E MINGW64 ~/OneDrive/Desktop/OS_CD24038 (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:
Rupali
Enter content to write (Press Ctrl+D to save):
Content written successfully
```

- Append file content



- Delete file content