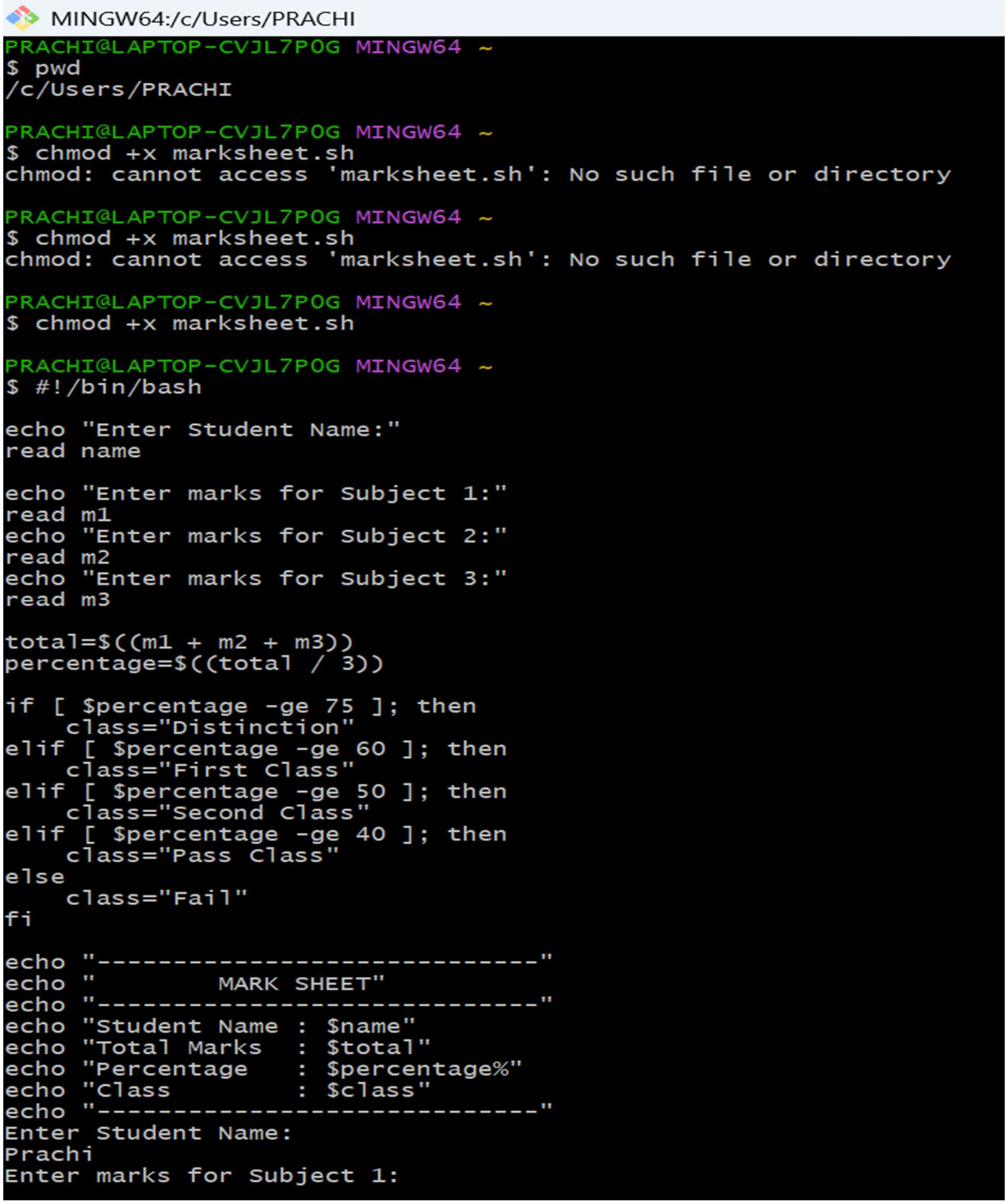
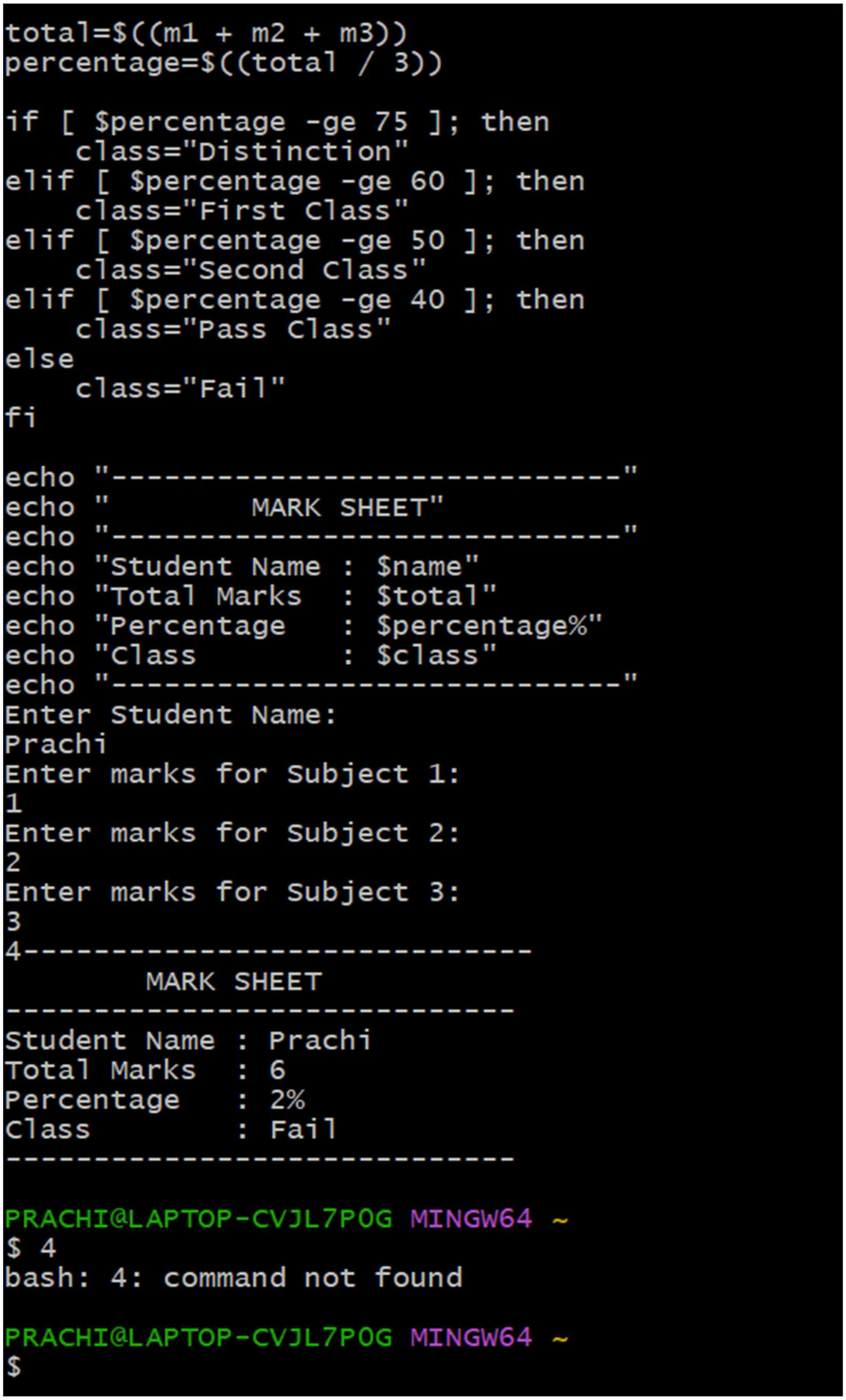
PRACTICAL 2:

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.



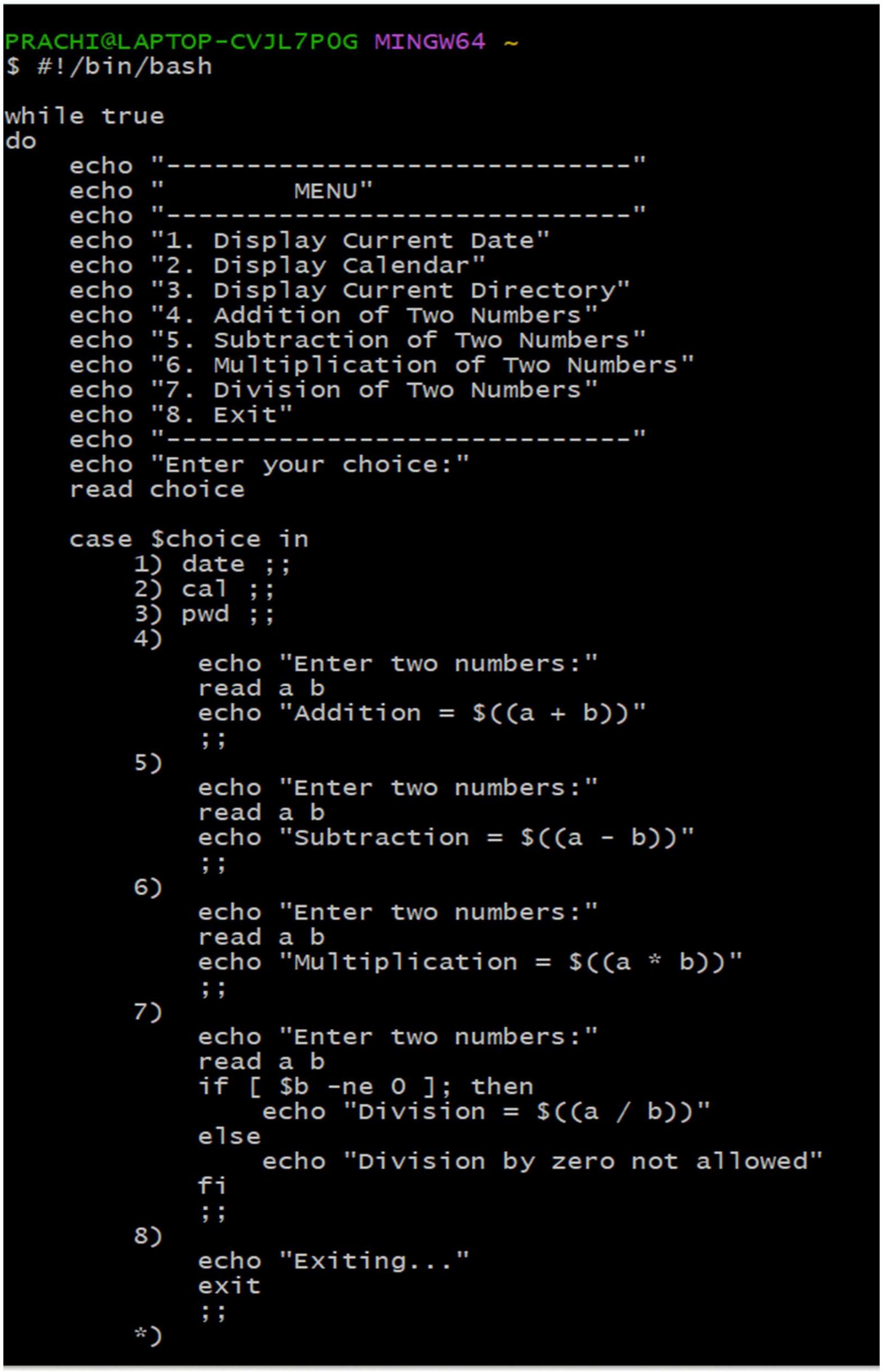
```
PRACHI@LAPTOP-CVJL7P0G MINGW64 ~
$ pwd
/c/Users/PRACHI

PRACHI@LAPTOP-CVJL7P0G MINGW64 ~
$ chmod +x marksheet.sh
chmod: cannot access 'marksheet.sh': No such file or directory

PRACHI@LAPTOP-CVJL7P0G MINGW64 ~
$ chmod +x marksheet.sh
chmod: cannot access 'marksheet.sh': No such file or directory

PRACHI@LAPTOP-CVJL7P0G MINGW64 ~
$ chmod +x marksheet.sh

PRACHI@LAPTOP-CVJL7P0G MINGW64 ~
$ #!/bin/bash

echo "Enter Student Name:"
read name

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))

if [ $percentage -ge 75 ]; then
    class="Distinction"
elif [ $percentage -ge 60 ]; then
    class="First Class"
elif [ $percentage -ge 50 ]; then
    class="Second Class"
elif [ $percentage -ge 40 ]; then
    class="Pass Class"
else
    class="Fail"
fi

echo "------------------------------"
echo "        MARK SHEET"
echo "------------------------------"
echo "Student Name : $name"
echo "Total Marks  : $total"
echo "Percentage   : $percentage%"
echo "Class        : $class"
echo "------------------------------"
Enter Student Name:
Prachi
Enter marks for Subject 1:
```



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

if [ $percentage -ge 75 ]; then
    class="Distinction"
elif [ $percentage -ge 60 ]; then
    class="First Class"
elif [ $percentage -ge 50 ]; then
    class="Second Class"
elif [ $percentage -ge 40 ]; then
    class="Pass Class"
else
    class="Fail"
fi

echo "-----------------------------"
echo "        MARK SHEET"
echo "-----------------------------"
echo "Student Name : $name"
echo "Total Marks  : $total"
echo "Percentage   : $percentage%"
echo "Class        : $class"
echo "-----------------------------"
Enter Student Name:
Prachi
Enter marks for Subject 1:
1
Enter marks for Subject 2:
2
Enter marks for Subject 3:
3
4-----------------------------
        MARK SHEET
-----------------------------
Student Name : Prachi
Total Marks  : 6
Percentage   : 2%
Class        : Fail
-----------------------------

PRACHI@LAPTOP-CVJL7P0G MINGW64 ~
$ 4
bash: 4: command not found

PRACHI@LAPTOP-CVJL7P0G MINGW64 ~
$
```

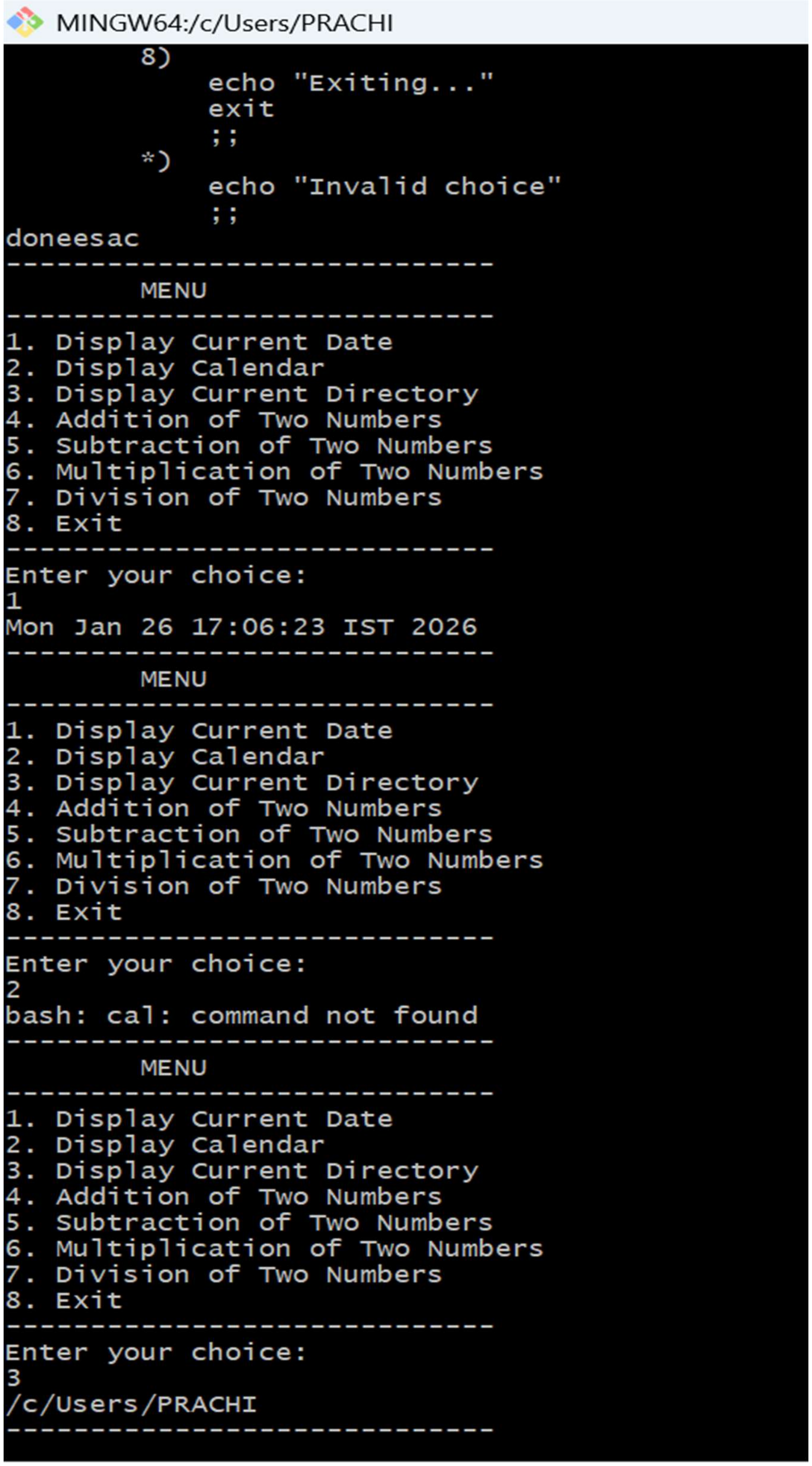
b) Write a menu driven shell script which will print the following menu and execute the given task.

- Display calendar of current month.



```
PRACHI@LAPTOP-CVJL7P0G MINGW64 ~
$ #!/bin/bash

while true
do
    echo "-----------------------------"
    echo "        MENU"
    echo "-----------------------------"
    echo "1. Display Current Date"
    echo "2. Display Calendar"
    echo "3. Display Current Directory"
    echo "4. Addition of Two Numbers"
    echo "5. Subtraction of Two Numbers"
    echo "6. Multiplication of Two Numbers"
    echo "7. Division of Two Numbers"
    echo "8. Exit"
    echo "-----------------------------"
    echo "Enter your choice:"
    read choice

    case $choice in
        1) date ;;
        2) cal ;;
        3) pwd ;;
        4)
            echo "Enter two numbers:"
            read a b
            echo "Addition = $((a + b))"
            ;;
        5)
            echo "Enter two numbers:"
            read a b
            echo "Subtraction = $((a - b))"
            ;;
        6)
            echo "Enter two numbers:"
            read a b
            echo "Multiplication = $((a * b))"
            ;;
        7)
            echo "Enter two numbers:"
            read a b
            if [ $b -ne 0 ]; then
                echo "Division = $((a / b))"
            else
                echo "Division by zero not allowed"
            fi
            ;;
        8)
            echo "Exiting..."
            exit
            ;;
        *)
```

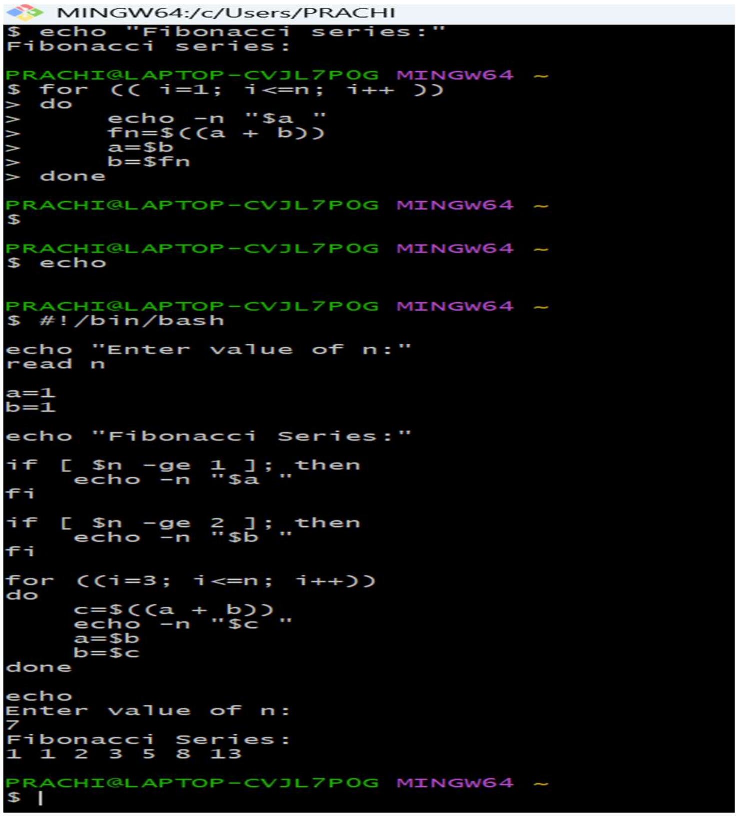
- Display today’s date and time



MINGW64:/c/Users/PRACHI

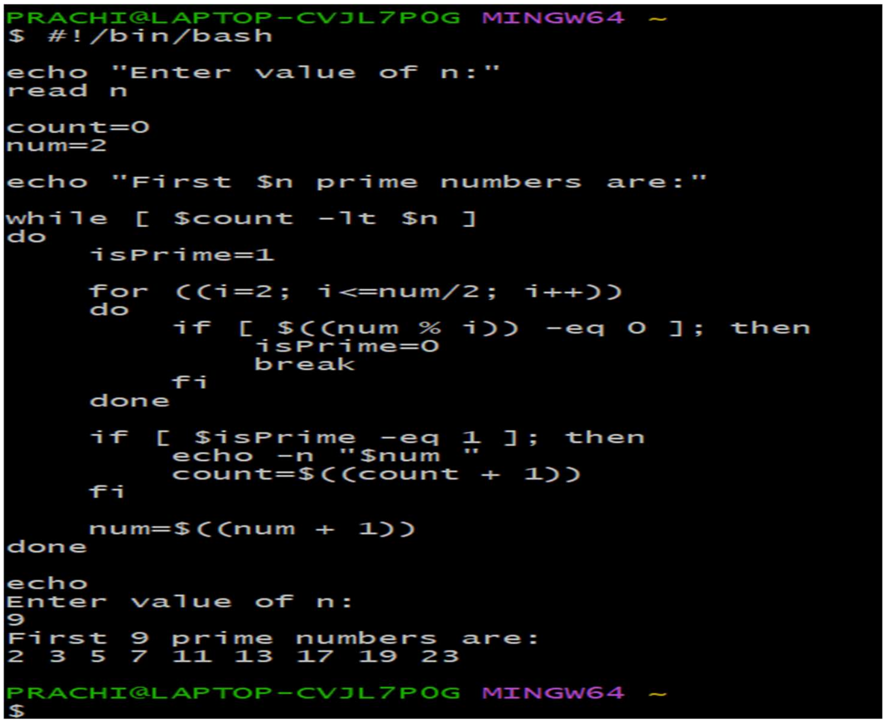
```
        8)
            echo "Exiting..."
            exit
            ;;
        *)
            echo "Invalid choice"
            ;;
doneesac
-----------------------------
        MENU
-----------------------------
1. Display Current Date
2. Display Calendar
3. Display Current Directory
4. Addition of Two Numbers
5. Subtraction of Two Numbers
6. Multiplication of Two Numbers
7. Division of Two Numbers
8. Exit
-----------------------------
Enter your choice:
1
Mon Jan 26 17:06:23 IST 2026
-----------------------------
        MENU
-----------------------------
1. Display Current Date
2. Display Calendar
3. Display Current Directory
4. Addition of Two Numbers
5. Subtraction of Two Numbers
6. Multiplication of Two Numbers
7. Division of Two Numbers
8. Exit
-----------------------------
Enter your choice:
2
bash: cal: command not found
-----------------------------
        MENU
-----------------------------
1. Display Current Date
2. Display Calendar
3. Display Current Directory
4. Addition of Two Numbers
5. Subtraction of Two Numbers
6. Multiplication of Two Numbers
7. Division of Two Numbers
8. Exit
-----------------------------
Enter your choice:
3
/c/Users/PRACHI
-----------------------------
```

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



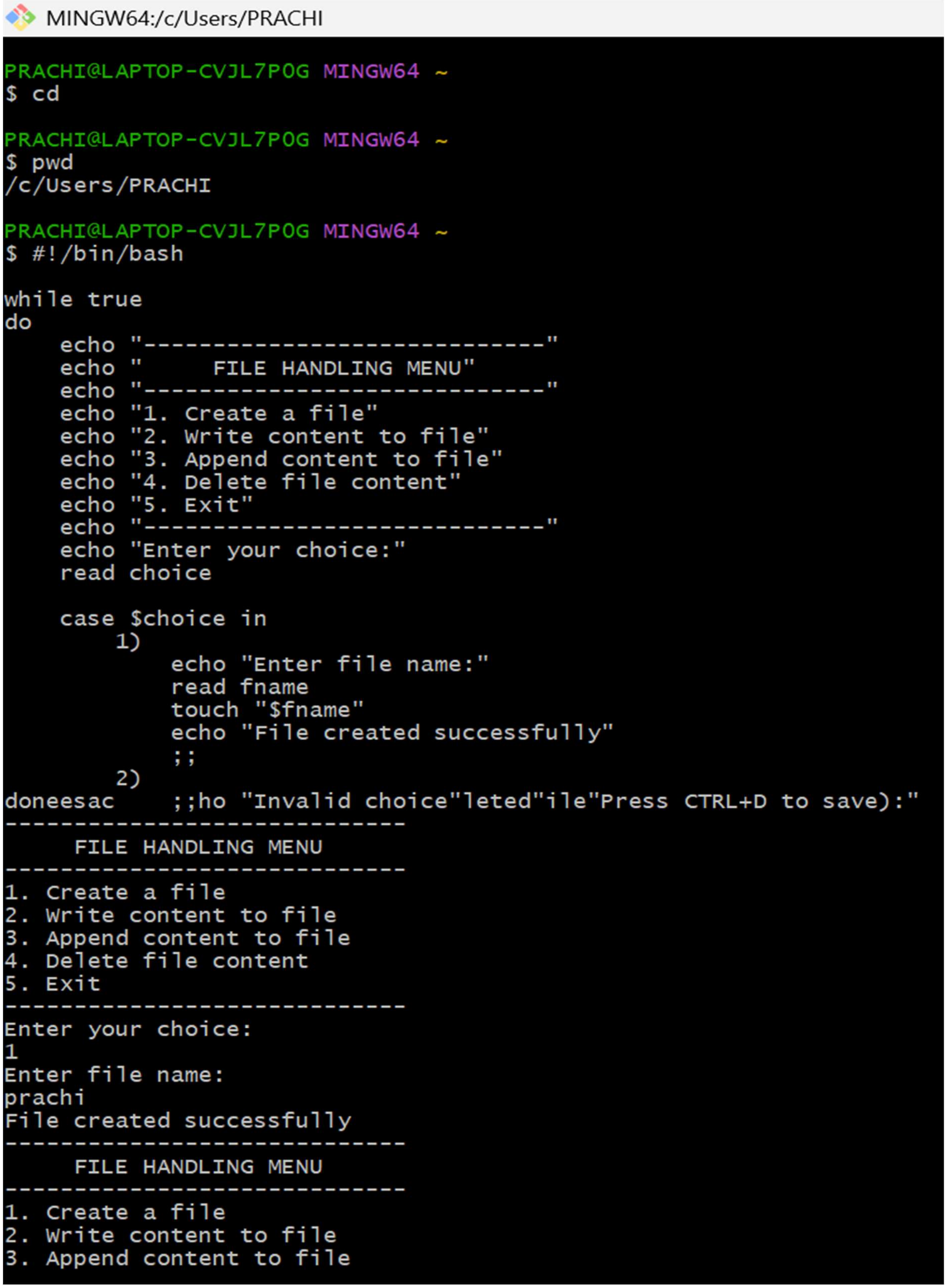
```
MINGW64:/c/Users/PRACHI
$ echo "Fibonacci series:"
Fibonacci series:

PRACHI@LAPTOP-CVJL7P0G MINGW64 ~
$ for (( i=1; i<=n; i++ ))
> do
>       echo -n "$a "
>       fn=$((a + b))
>       a=$b
>       b=$fn
> done

PRACHI@LAPTOP-CVJL7P0G MINGW64 ~
$

PRACHI@LAPTOP-CVJL7P0G MINGW64 ~
$ echo


PRACHI@LAPTOP-CVJL7P0G MINGW64 ~
$ #!/bin/bash

echo "Enter value of n:"
read n

a=1
b=1

echo "Fibonacci Series:"

if [ $n -ge 1 ]; then
    echo -n "$a "
fi

if [ $n -ge 2 ]; then
    echo -n "$b "
fi

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

echo
Enter value of n:
7
Fibonacci Series:
1 1 2 3 5 8 13

PRACHI@LAPTOP-CVJL7P0G MINGW64 ~
$ |
```

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



```
PRACHI@LAPTOP-CVJL7P0G MINGW64 ~
$ #!/bin/bash

echo "Enter value of n:"
read n

count=0
num=2

echo "First $n prime numbers are:"

while [ $count -lt $n ]
do
    isPrime=1

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

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

    num=$((num + 1))
done

echo
Enter value of n:
9
First 9 prime numbers are:
2 3 5 7 11 13 17 19 23

PRACHI@LAPTOP-CVJL7P0G MINGW64 ~
$
```

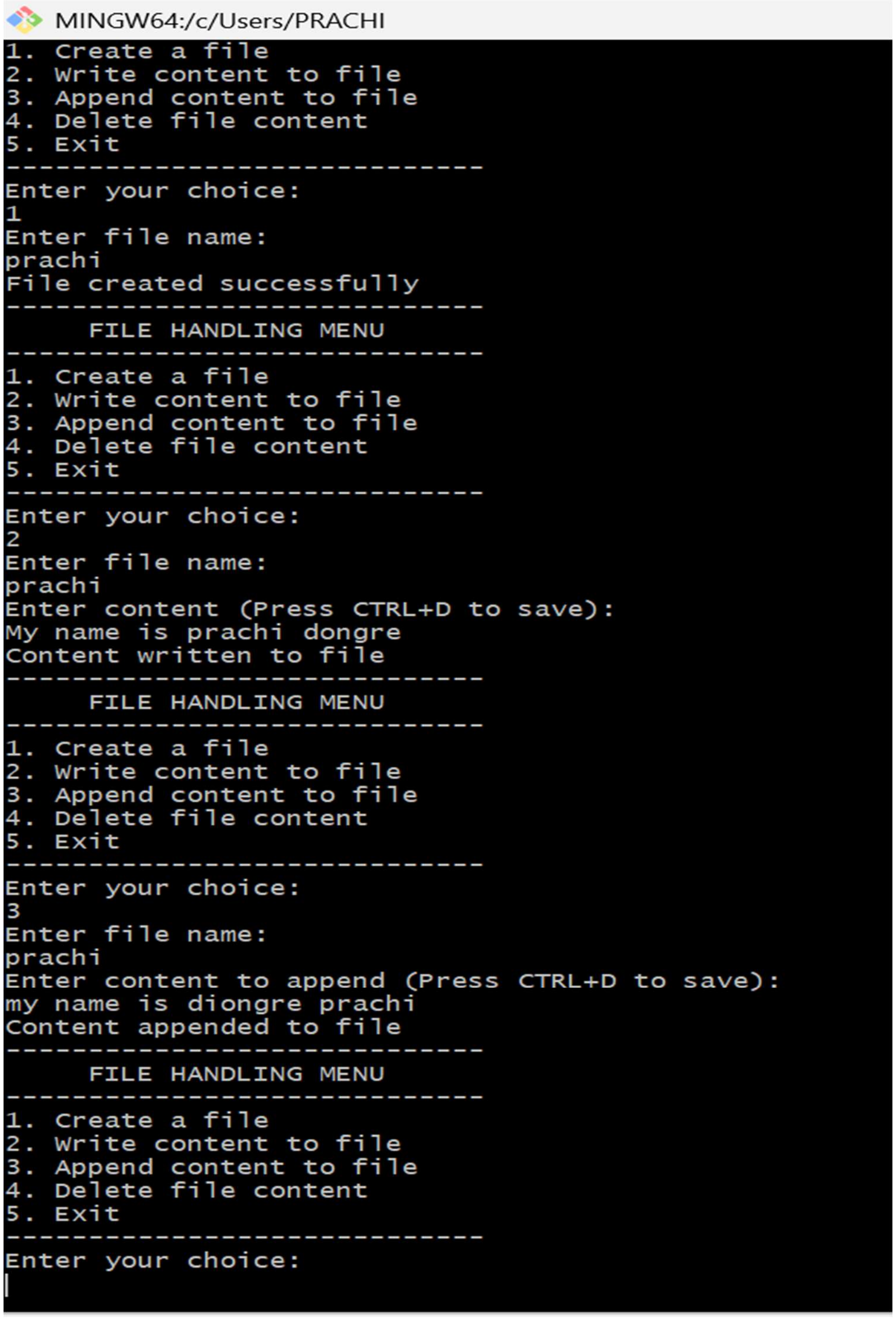
e) Write menu driven program for file handling activity • Creation of file.



MINGW64:/c/Users/PRACHI

```
PRACHI@LAPTOP-CVJL7P0G MINGW64 ~
$ cd

PRACHI@LAPTOP-CVJL7P0G MINGW64 ~
$ pwd
/c/Users/PRACHI

PRACHI@LAPTOP-CVJL7P0G MINGW64 ~
$ #!/bin/bash

while true
do
    echo "-----------------------------"
    echo "     FILE HANDLING MENU"
    echo "-----------------------------"
    echo "1. Create a file"
    echo "2. Write content to file"
    echo "3. Append content to file"
    echo "4. Delete file content"
    echo "5. Exit"
    echo "-----------------------------"
    echo "Enter your choice:"
    read choice

    case $choice in
        1)
            echo "Enter file name:"
            read fname
            touch "$fname"
            echo "File created successfully"
            ;;
        2)
doneesac    ;;ho "Invalid choice"leted"ile"Press CTRL+D to save):"
-----------------------------
     FILE HANDLING MENU
-----------------------------
1. Create a file
2. Write content to file
3. Append content to file
4. Delete file content
5. Exit
-----------------------------
Enter your choice:
1
Enter file name:
prachi
File created successfully
-----------------------------
     FILE HANDLING MENU
-----------------------------
1. Create a file
2. Write content to file
3. Append content to file
```

- Write content in the file.



```
1. Create a file
2. Write content to file
3. Append content to file
4. Delete file content
5. Exit
-----------------------------
Enter your choice:
1
Enter file name:
prachi
File created successfully
-----------------------------
     FILE HANDLING MENU
-----------------------------
1. Create a file
2. Write content to file
3. Append content to file
4. Delete file content
5. Exit
-----------------------------
Enter your choice:
2
Enter file name:
prachi
Enter content (Press CTRL+D to save):
My name is prachi dongre
Content written to file
-----------------------------
     FILE HANDLING MENU
-----------------------------
1. Create a file
2. Write content to file
3. Append content to file
4. Delete file content
5. Exit
-----------------------------
Enter your choice:
3
Enter file name:
prachi
Enter content to append (Press CTRL+D to save):
my name is diongre prachi
Content appended to file
-----------------------------
     FILE HANDLING MENU
-----------------------------
1. Create a file
2. Write content to file
3. Append content to file
4. Delete file content
5. Exit
-----------------------------
Enter your choice:
```