

OS Practical No. 3

Aim:

1. 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.

Code:

```
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 -gt 75 ]; then
    echo "Class: Distinction"
elif [ $percentage -gt 60 ]; then
    echo "Class: First Class"
elif [ $percentage -gt 40 ]; then
    echo "Class: Second Class"
elif [ $percentage -gt 35 ]; then
    echo "Class: Third Class"
else
    echo "Class: Fail"
fi
```

Output:

A screenshot of a macOS Terminal window. The title bar shows "Terminal" and the current directory "devanshu -- zsh -- 211x56". The window contains a shell script for calculating student marks and determining their class based on percentage. The script prompts for three subjects (English, Maths, Science) and calculates the total marks and percentage. It then uses an if-elif-else structure to determine the class: Distinction (75+), First Class (60+), Second Class (40+), Third Class (35+), or Fail (otherwise). The script ends with a final prompt for English marks.

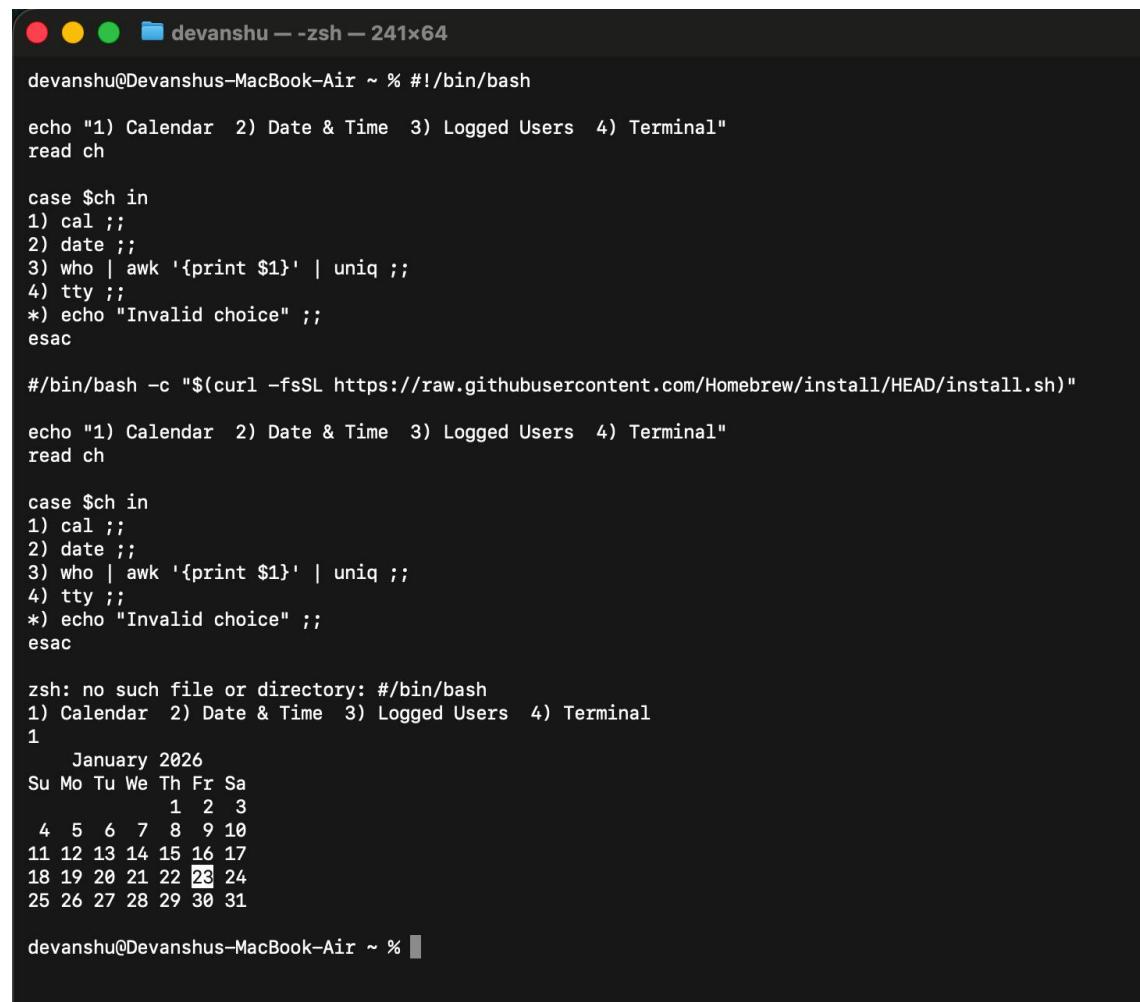
```
Last login: Fri Jan 23 16:05:17 on ttys000
devanshu@Devanshus-MacBook-Air ~ % echo "Enter marks of English"
read m1
echo "Enter marks of Maths"
read m2
echo "Enter marks of science"
read m3
total=$(($m1+$m2+$m3))
percentage=$((total/3))
echo "Student: Total Marks = $total"
echo "Percentage = $percentage"
if [ $percentage -gt 75 ]; then
    echo "Class: Distinction"
elif [ $percentage -gt 60 ]; then
    echo "Class: First Class"
elif [ $percentage -gt 40 ]; then
    echo "Class: Second Class"
elif [ $percentage -gt 35 ]; then
    echo "Class: Third Class"
else
    echo "Class: Fail"
[fi
"Enter marks of English"
99
"Enter marks of Maths"
99
"Enter marks of science"
99
"Student: Total Marks = 297"
"Percentage = 99"
"Class: Distinction"
devanshu@Devanshus-MacBook-Air ~ %
```

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

Code:

```
#!/bin/bash
echo "1) Calendar 2) Date & Time 3) Logged Users 4) Terminal"
read ch
case $ch in
1) cal ;;
2) date ;;
3) who | awk '{print $1}' | uniq ;;
4) tty ;;
*) echo "Invalid choice" ;;
esac
```

- **Display calendar of current month**



```
devanshu@Devanshus-MacBook-Air ~ % #!/bin/bash
echo "1) Calendar 2) Date & Time 3) Logged Users 4) Terminal"
read ch
case $ch in
1) cal ;;
2) date ;;
3) who | awk '{print $1}' | uniq ;;
4) tty ;;
*) echo "Invalid choice" ;;
esac

#/bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"

echo "1) Calendar 2) Date & Time 3) Logged Users 4) Terminal"
read ch
case $ch in
1) cal ;;
2) date ;;
3) who | awk '{print $1}' | uniq ;;
4) tty ;;
*) echo "Invalid choice" ;;
esac

zsh: no such file or directory: #/bin/bash
1) Calendar 2) Date & Time 3) Logged Users 4) Terminal
1
      January 2026
Su Mo Tu We Th Fr Sa
      1  2  3
 4  5  6  7  8  9 10
11 12 13 14 15 16 17
18 19 20 21 22 23 24
25 26 27 28 29 30 31

devanshu@Devanshus-MacBook-Air ~ %
```

● Display today's date and time

```
Terminal Shell Edit View Window Help

devanshu@Devanshus-MacBook-Air ~ % #!/bin/bash

echo "1) Calendar 2) Date & Time 3) Logged Users 4) Terminal"
read ch

case $ch in
1) cal ;;
2) date ;;
3) who | awk '{print $1}' | uniq ;;
4) tty ;;
*) echo "Invalid choice" ;;
esac

#/bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"

echo "1) Calendar 2) Date & Time 3) Logged Users 4) Terminal"
read ch

case $ch in
1) cal ;;
2) date ;;
3) who | awk '{print $1}' | uniq ;;
4) tty ;;
*) echo "Invalid choice" ;;
esac

zsh: no such file or directory: #/bin/bash
1) Calendar 2) Date & Time 3) Logged Users 4) Terminal
2
Fri Jan 23 16:39:29 IST 2026
devanshu@Devanshus-MacBook-Air ~ %
```

● Display usernames those are currently logged in the system

```
Terminal Shell Edit View Window Help

devanshu@Devanshus-MacBook-Air ~ % #!/bin/bash

echo "1) Calendar 2) Date & Time 3) Logged Users 4) Terminal"
read ch

case $ch in
1) cal ;;
2) date ;;
3) who | awk '{print $1}' | uniq ;;
4) tty ;;
*) echo "Invalid choice" ;;
esac

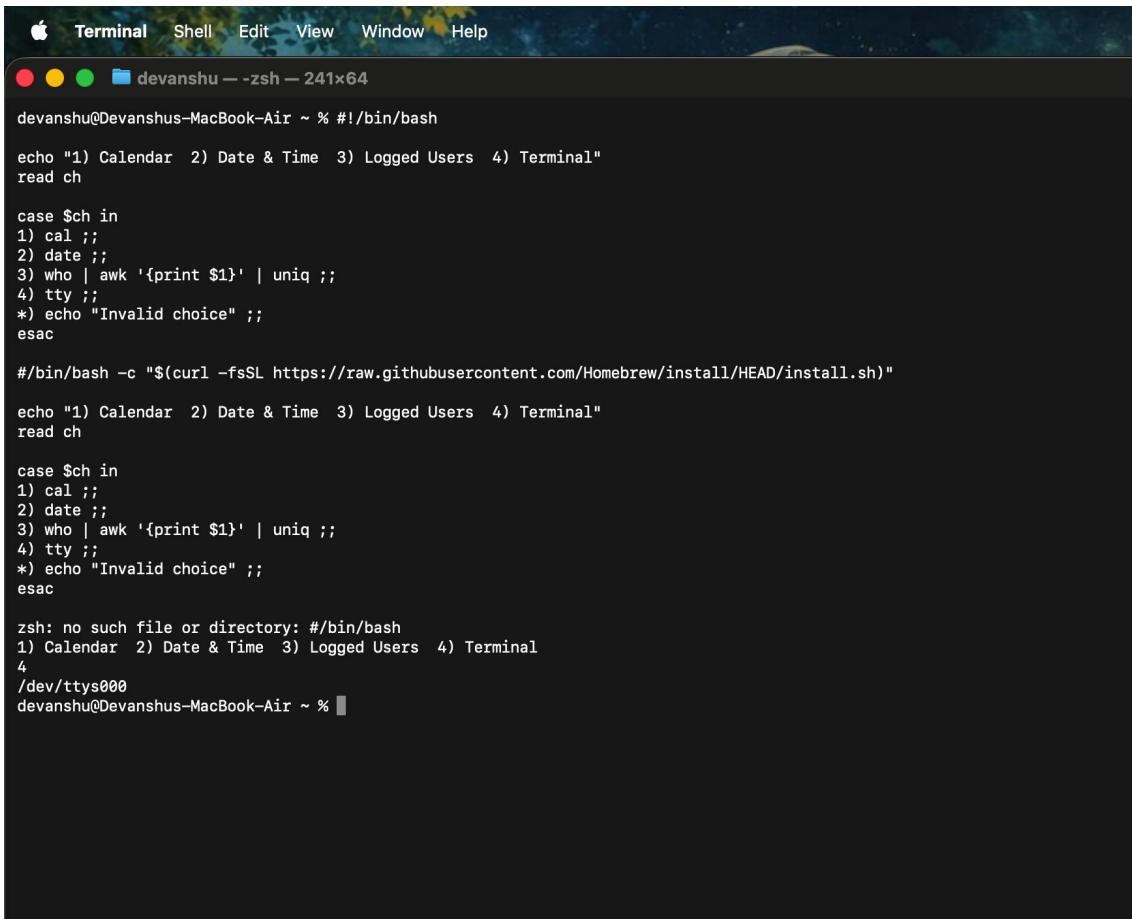
#/bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"

echo "1) Calendar 2) Date & Time 3) Logged Users 4) Terminal"
read ch

case $ch in
1) cal ;;
2) date ;;
3) who | awk '{print $1}' | uniq ;;
4) tty ;;
*) echo "Invalid choice" ;;
esac

zsh: no such file or directory: #/bin/bash
1) Calendar 2) Date & Time 3) Logged Users 4) Terminal
3
devanshu
devanshu@Devanshus-MacBook-Air ~ %
```

- **Display your terminal number**



A screenshot of a macOS Terminal window titled "devanshu — zsh — 241x64". The window shows a script being run. The script starts by prompting the user to choose between four options: Calendar, Date & Time, Logged Users, or Terminal. It then uses curl to download and execute a Homebrew installation script from raw.githubusercontent.com. After executing the download command, it again prompts the user for a choice. Finally, it prints the path "/dev/ttys000" and ends with the user's name "devanshu" followed by a tilde (~).

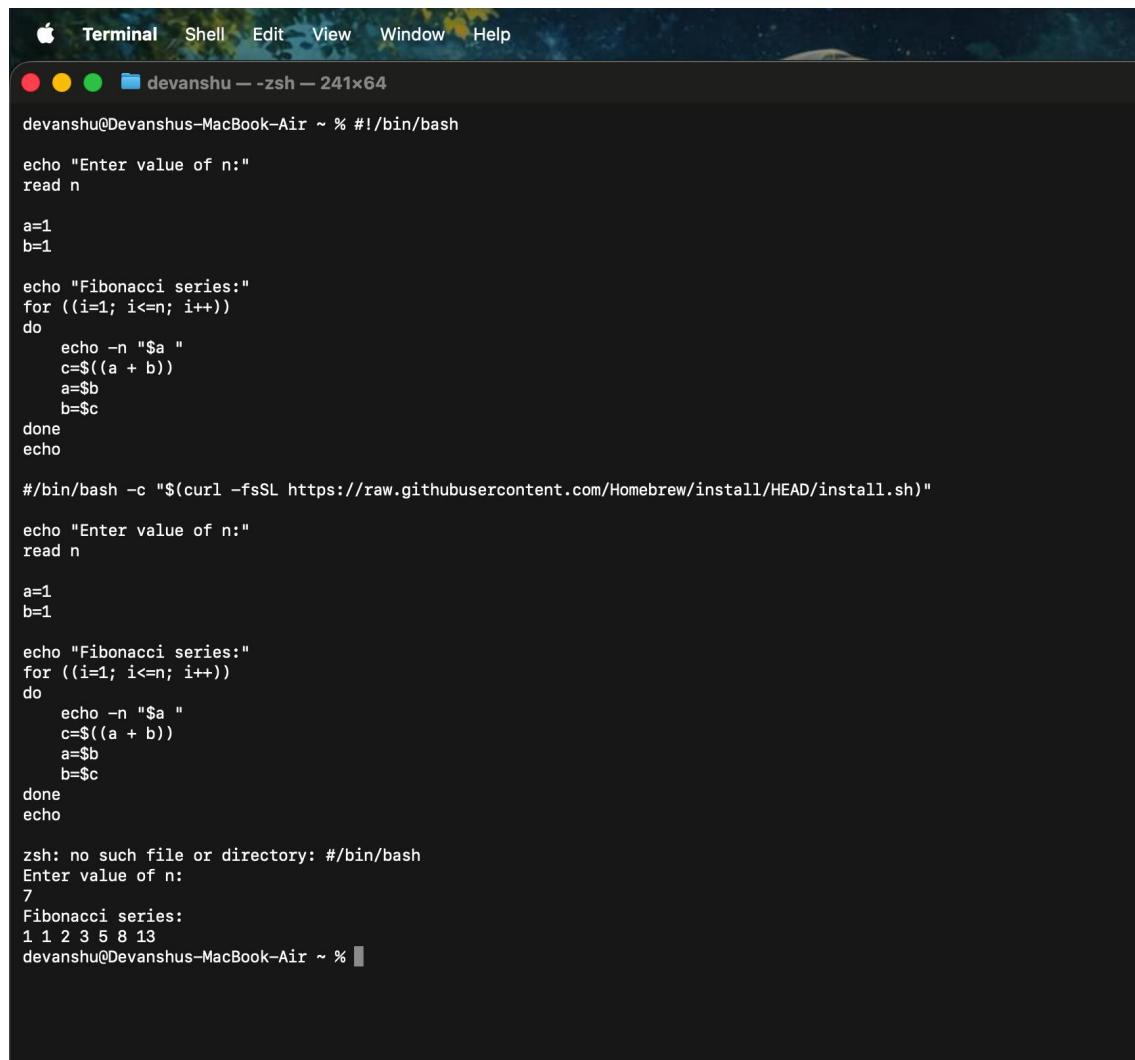
```
Terminal Shell Edit View Window Help
devanshu@Devanshus-MacBook-Air ~ % #!/bin/bash
echo "1) Calendar 2) Date & Time 3) Logged Users 4) Terminal"
read ch
case $ch in
1) cal ;;
2) date ;;
3) who | awk '{print $1}' | uniq ;;
4) tty ;;
*) echo "Invalid choice" ;;
esac
#/bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"
echo "1) Calendar 2) Date & Time 3) Logged Users 4) Terminal"
read ch
case $ch in
1) cal ;;
2) date ;;
3) who | awk '{print $1}' | uniq ;;
4) tty ;;
*) echo "Invalid choice" ;;
esac
zsh: no such file or directory: #!/bin/bash
1) Calendar 2) Date & Time 3) Logged Users 4) Terminal
4
/dev/ttys000
devanshu@Devanshus-MacBook-Air ~ %
```

**3. Write a shell script which will generate first n fibonacci numbers like:
1, 2, 3, 5, 13**

Code:

```
#!/bin/bash
echo "Enter 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
```

Output:



The screenshot shows a macOS Terminal window with the following content:

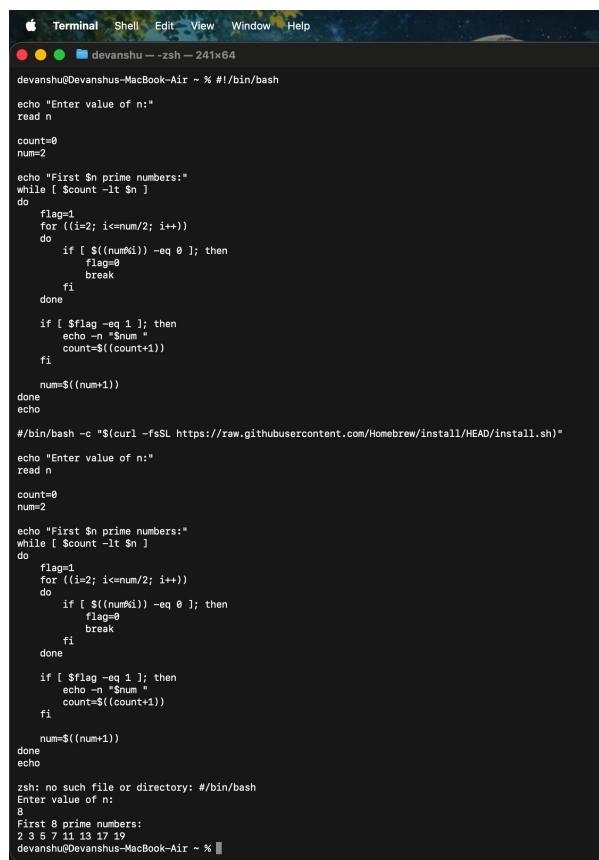
```
Terminal Shell Edit View Window Help
devanshu@Devanshus-MacBook-Air ~ % #!/bin/bash
echo "Enter value of n:" read n
a=1
b=1
echo "Fibonacci series:"
for ((i=1; i<=n; i++))
do
    echo -n "$a "
    c=$((a + b))
    a=$b
    b=$c
done
echo
#/bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"
echo "Enter value of n:" read n
a=1
b=1
echo "Fibonacci series:"
for ((i=1; i<=n; i++))
do
    echo -n "$a "
    c=$((a + b))
    a=$b
    b=$c
done
echo
zsh: no such file or directory: #/bin/bash
Enter value of n:
7
Fibonacci series:
1 1 2 3 5 8 13
devanshu@Devanshus-MacBook-Air ~ %
```

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

Code:

```
#!/bin/bash
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
```

Output:



The screenshot shows a macOS Terminal window with the title bar "Terminal" and the path "devanshu@Devanshus-MacBook-Air ~ % #!/bin/bash". The window contains the script code from the previous section. At the bottom of the terminal, the user enters "8" and the script outputs "First 8 prime numbers: 2 3 5 7 11 13 17 19". The prompt "% " is visible at the end.

```
#!/bin/bash
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

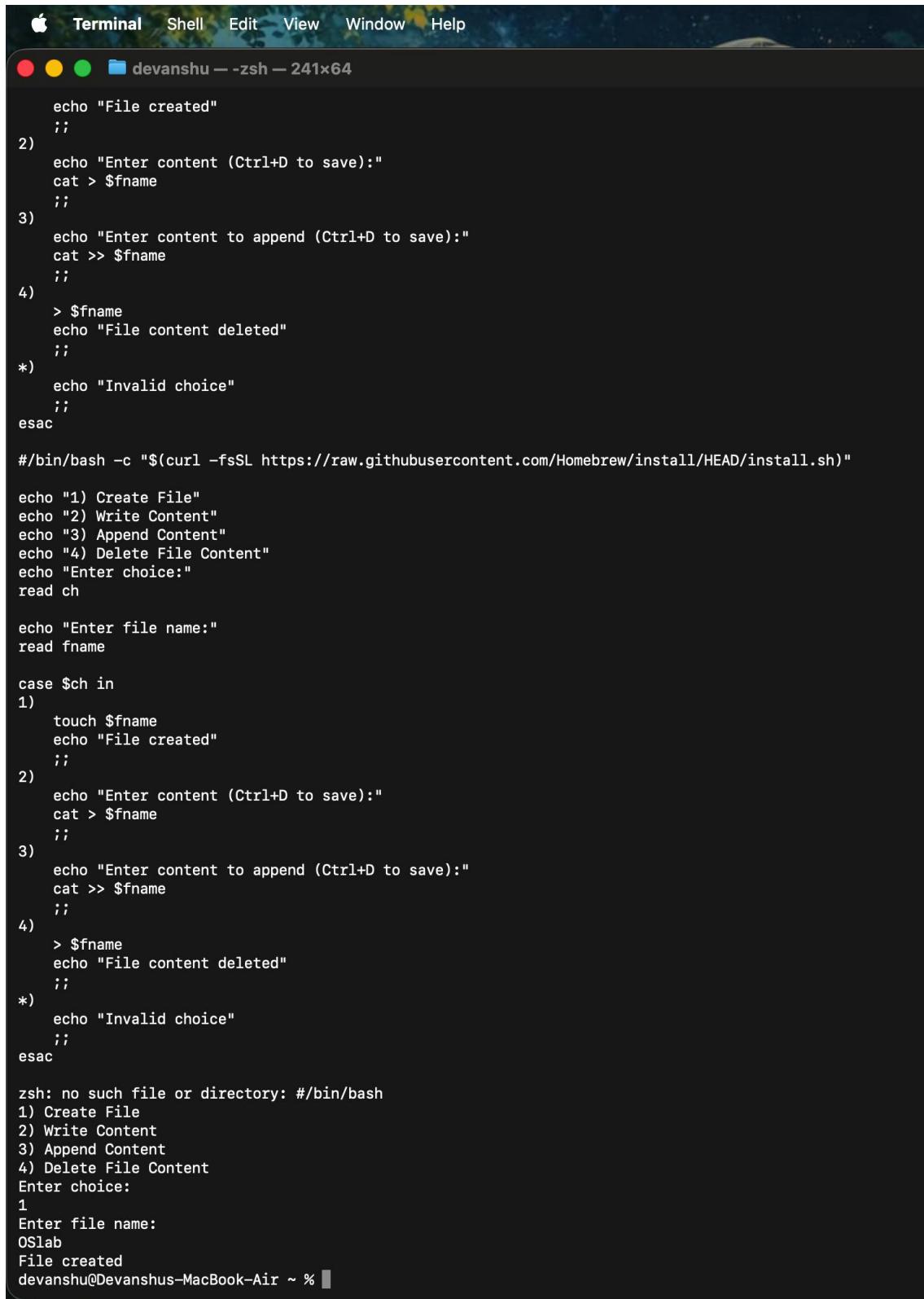
#bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"
echo "Enter value of n:" read n
count=0
num=2
echo "First $n prime numbers:"
while [ $count -lt $n ]
do
    flag=1
    for ((i=2; i<=num/2; i++))
    do
        if [ $((num%i)) -eq 0 ];
            then flag=0
            Break
        fi
    done
    if [ $flag -eq 1 ];
        then echo -n
        "$num "
        count=$((count+1))
    fi
    num=$((num+1))
done
Echo

zsh: no such file or directory: #bin/bash
Enter value of n:
8
First 8 prime numbers:
2 3 5 7 11 13 17 19
devanshu@Devanshus-MacBook-Air ~ %
```

5. Write menu driven program for file handling activity

```
#!/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
```

● Creation of file



The screenshot shows a macOS Terminal window titled "Terminal" with the title bar "devanshu — zsh — 241x64". The window displays a shell script for creating files. The script includes a multi-choice menu (1) through (4) for creating, writing, appending, or deleting file content. It also handles invalid input and provides feedback for each choice. The script ends with a command to install Homebrew and then runs itself again. The terminal session shows the script being run, choosing option 1 to create a file named "OSlab", and confirming its creation.

```
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

#/bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"

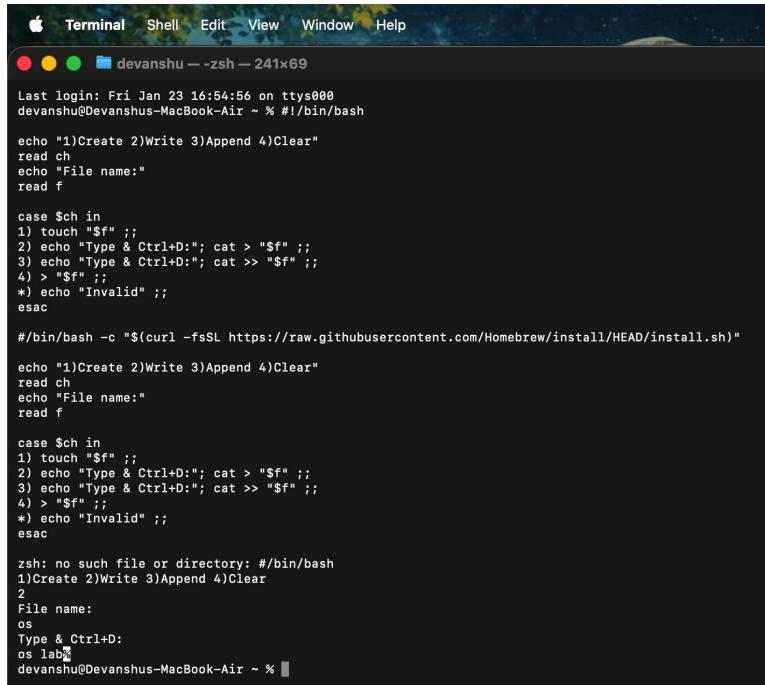
echo "1) Create File"
echo "2) Write Content"
echo "3) Append Content"
echo "4) Delete File Content"
echo "Enter choice:"
read ch

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

zsh: no such file or directory: #/bin/bash
1) Create File
2) Write Content
3) Append Content
4) Delete File Content
Enter choice:
1
Enter file name:
OSlab
File created
devanshu@Devanshus-MacBook-Air ~ %
```

● Write content in the file



```
Terminal Shell Edit View Window Help

Last login: Fri Jan 23 16:54:56 on ttys000
devanshu@Devanshus-MacBook-Air ~ % #!/bin/bash

echo "1)Create 2)Write 3)Append 4)Clear"
read ch
echo "File name:"
read f

case $ch in
1) touch "$f" ;;
2) echo "Type & Ctrl+D:"; cat > "$f" ;;
3) echo "Type & Ctrl+D:"; cat >> "$f" ;;
4) > "$f" ;;
*) echo "Invalid" ;;
esac

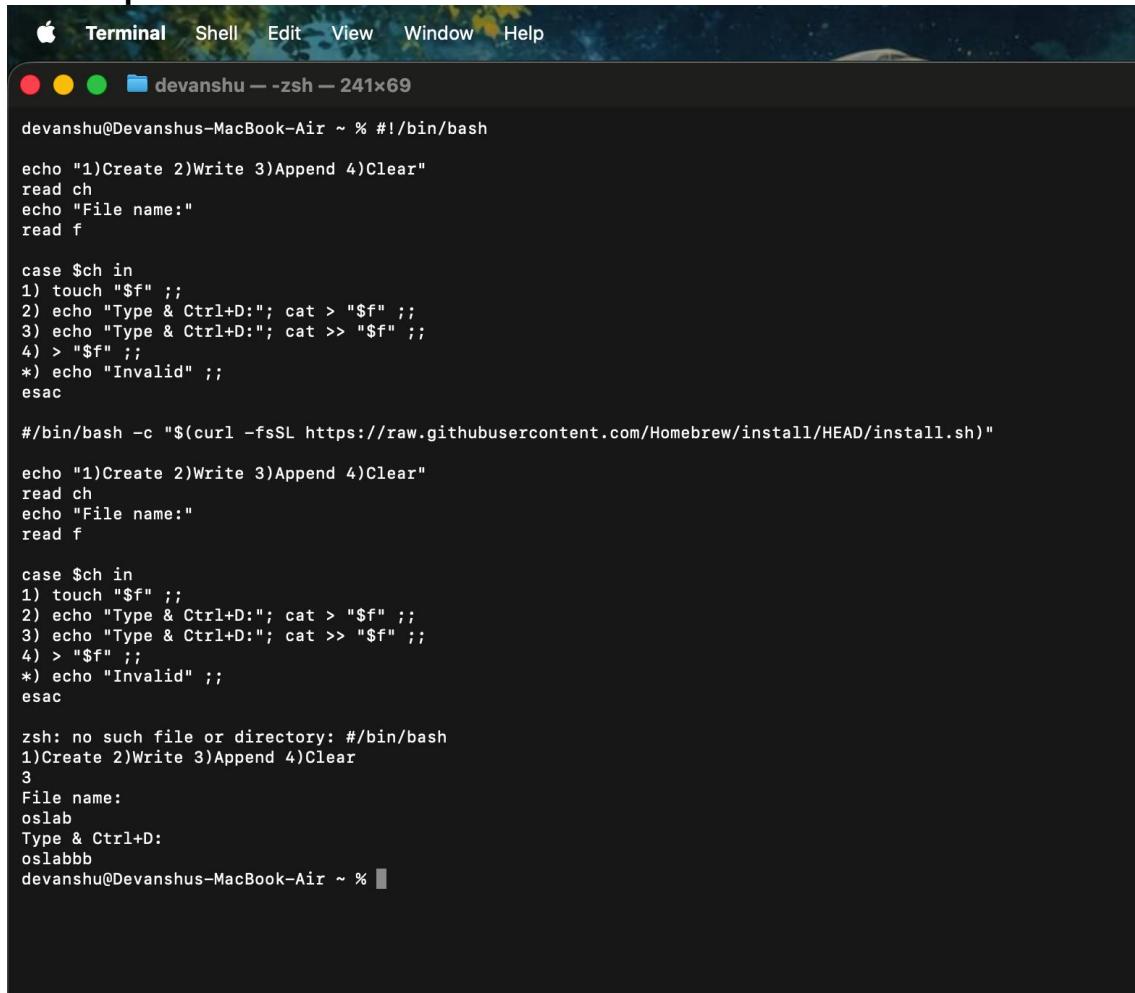
#/bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"

echo "1)Create 2)Write 3)Append 4)Clear"
read ch
echo "File name:"
read f

case $ch in
1) touch "$f" ;;
2) echo "Type & Ctrl+D:"; cat > "$f" ;;
3) echo "Type & Ctrl+D:"; cat >> "$f" ;;
4) > "$f" ;;
*) echo "Invalid" ;;
esac

zsh: no such file or directory: #/bin/bash
1)Create 2)Write 3)Append 4)Clear
2
File name:
os
Type & Ctrl+D:
os lab
devanshu@Devanshus-MacBook-Air ~ %
```

● Upend file content



```
Terminal Shell Edit View Window Help

Last login: Fri Jan 23 16:54:56 on ttys000
devanshu@Devanshus-MacBook-Air ~ % #!/bin/bash

echo "1)Create 2)Write 3)Append 4)Clear"
read ch
echo "File name:"
read f

case $ch in
1) touch "$f" ;;
2) echo "Type & Ctrl+D:"; cat > "$f" ;;
3) echo "Type & Ctrl+D:"; cat >> "$f" ;;
4) > "$f" ;;
*) echo "Invalid" ;;
esac

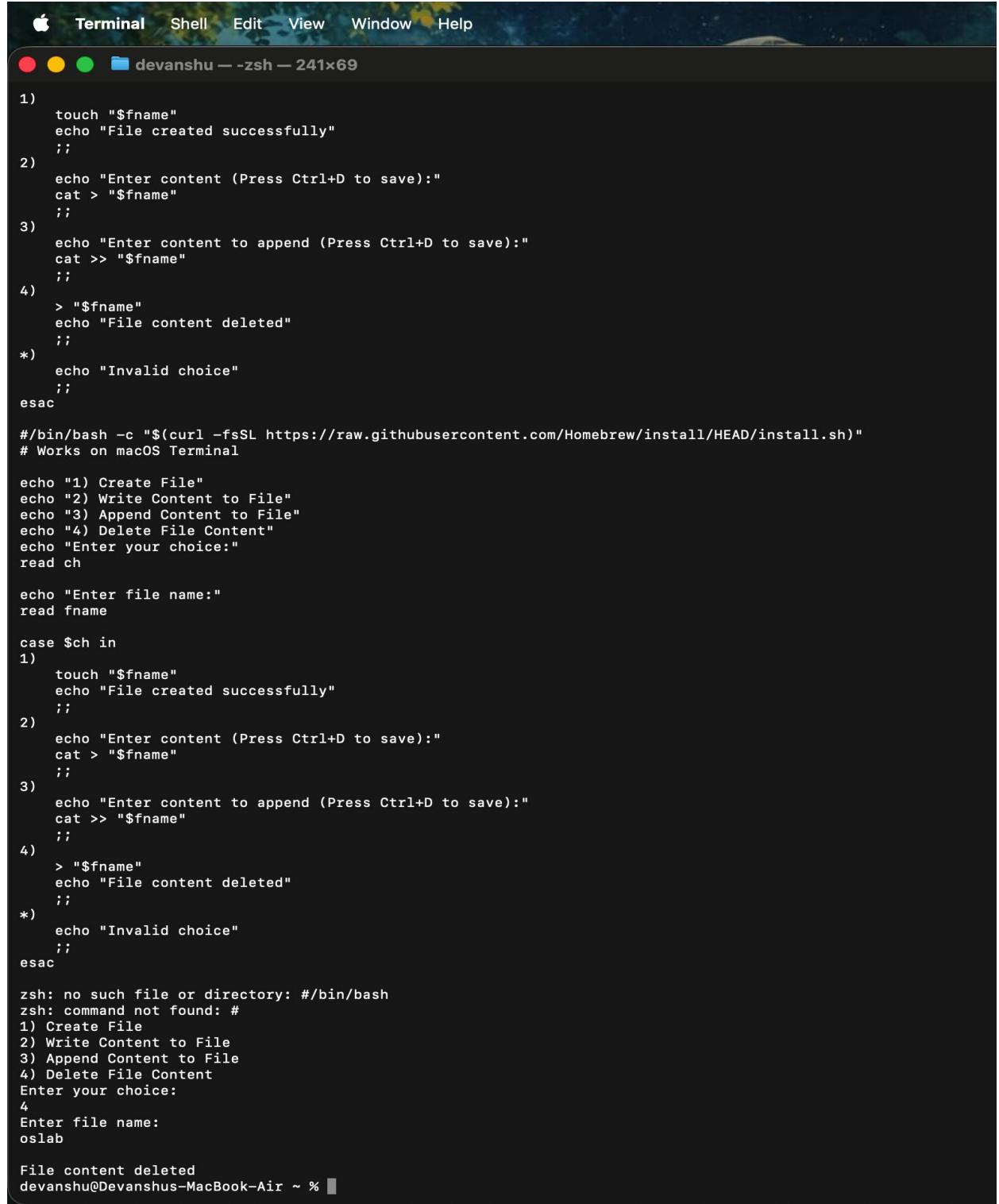
#/bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"

echo "1)Create 2)Write 3)Append 4)Clear"
read ch
echo "File name:"
read f

case $ch in
1) touch "$f" ;;
2) echo "Type & Ctrl+D:"; cat > "$f" ;;
3) echo "Type & Ctrl+D:"; cat >> "$f" ;;
4) > "$f" ;;
*) echo "Invalid" ;;
esac

zsh: no such file or directory: #/bin/bash
1)Create 2)Write 3)Append 4)Clear
3
File name:
oslab
Type & Ctrl+D:
oslabbb
devanshu@Devanshus-MacBook-Air ~ %
```

● Delete file content



The screenshot shows a macOS Terminal window titled "Terminal" with the title bar "devanshu -- zsh -- 241x69". The window contains a shell script for managing files. The script includes a function for creating a file, writing content, appending content, and deleting content. It also includes logic for handling user input and displaying choices. The script is run with "#!/bin/bash -c \$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)" and works on macOS Terminal. The user enters "4" to delete content, which results in the file being deleted.

```
1) touch "$fname"
   echo "File created successfully"
;;
2) echo "Enter content (Press Ctrl+D to save):"
   cat > "$fname"
;;
3) echo "Enter content to append (Press Ctrl+D to save):"
   cat >> "$fname"
;;
4) > "$fname"
   echo "File content deleted"
;;
*) echo "Invalid choice"
;;
esac

#!/bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"
# Works on macOS Terminal

echo "1) Create File"
echo "2) Write Content to File"
echo "3) Append Content to File"
echo "4) Delete File Content"
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 > "$fname"
;;
3)
  echo "Enter content to append (Press Ctrl+D to save):"
  cat >> "$fname"
;;
4)
  > "$fname"
  echo "File content deleted"
;;
*) echo "Invalid choice"
;;
esac

zsh: no such file or directory: #/bin/bash
zsh: command not found: #
1) Create File
2) Write Content to File
3) Append Content to File
4) Delete File Content
Enter your choice:
4
Enter file name:
oslab

File content deleted
devanshu@Devanshus-MacBook-Air ~ %
```