FREE AND OPEN SOURCE LAB

Final Exam

Submitted By:

Mohammed Rabeeh
Roll No: 35
TVE18CS036

Contents

1 Program 1

1.1 Problem Statement

If we list all the natural numbers below 10 that are multiples of 3 or 5, we get 3, 5, 6 and 9. The sum of these multiples is 23. Write a shell script to find the sum of all the multiples of 3 or 5 below an integer n (10¡= n ¡= 10000).
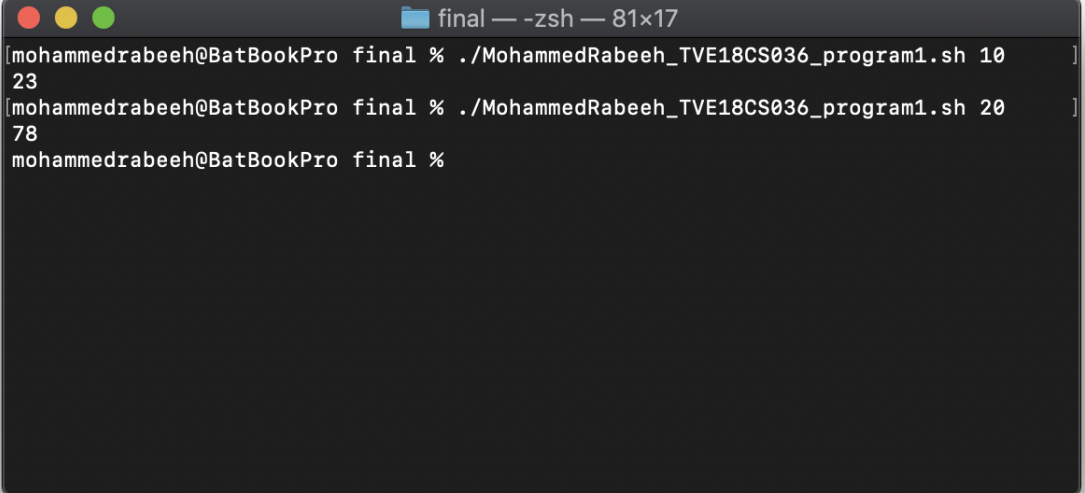
1.2 Source Code

```
#!/bin/bash
# Program Name: MohammedRabeeh_TVE18CS036_1.sh
# Author: Mohammed Rabeeh
# Date: 24th July 2020
# OS: macOS Catalina 10.15.3
# Shell: zsh
# Function: To find the sum of all the multiples of 3 or 5 below an integer n
# (10 <= n <= 10000).
# Input: ./MohammedRabeeh_TVE18CS036_1.sh n

if [ -z "$1" ]; then
  echo "USAGE: $0 n"
  exit
fi
sum=0
for ((i = 0 ; i < $1 ; i++)); do
  if [ $((i%3)) -eq 0 -o $((i%5)) -eq 0 ]; then
    sum=$((sum + i))
  fi
done
echo $sum
```

1.3   Output (Text)

```
./MohammedRabeeh_TVE18CS036_program1.sh 10
23
./MohammedRabeeh_TVE18CS036_program1.sh 20
78
```

1.4   Output (Image)

2 Program 2

2.1 Problem Statement

Write a script to print name of the file that contains lines longer then n chars.

2.1.1 Source Code

```
#!/bin/bash
# Program Name: MohammedRabeeh_TVE18CS036_program2.sh
# Author: Mohammed Rabeeh
# Date: 24th July 2020
# OS: macOS Catalina 10.15.3
# Shell: zsh
# Function: To print name of the file that contains lines longer then n
# chars.
# Input: ./MohammedRabeeh_TVE18CS036_program2.sh n

if [ -z "$1" ]; then
  echo "USAGE: $0 n"
  exit
fi

for filename in *.txt; do
    [ -e "$filename" ] || continue
    c=`grep ".\{$(($1 + 1))\}" $filename | wc -l`
    if [ $c -ne 0 ]; then
      echo $filename
    fi
done
```

2.2   Input Files

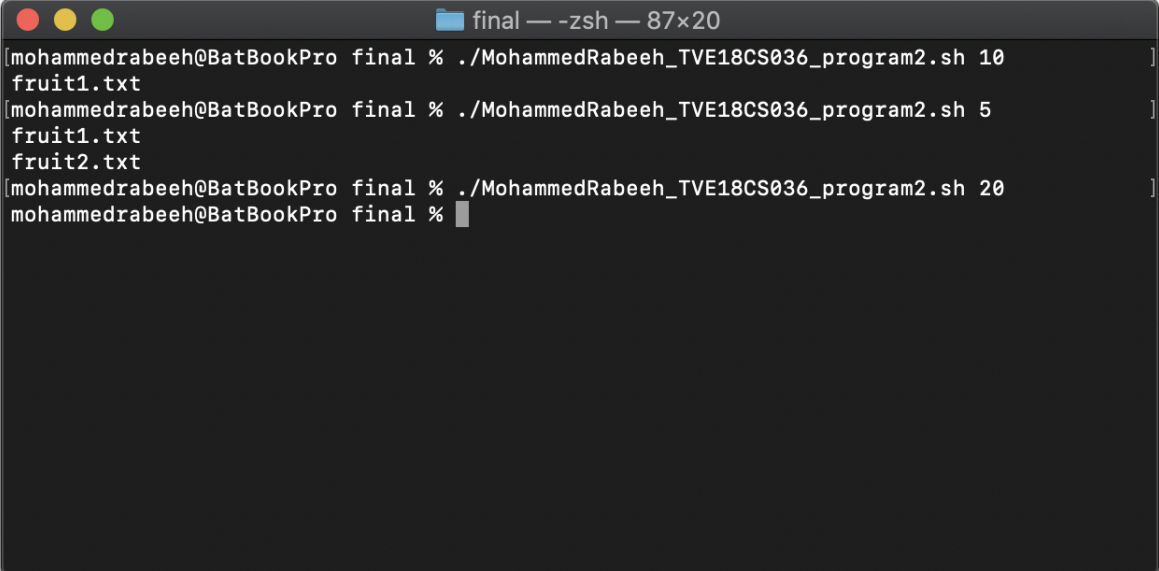fruit1.txt

```
Apples and Oranges
Bananas
```

fruit2.txt

```
Grapes
Kiwi
Tomato
```

2.3   Output (Text)

```
./MohammedRabeeh_TVE18CS036_program2.sh 10
fruit1.txt
./MohammedRabeeh_TVE18CS036_program2.sh 5
fruit1.txt
fruit2.txt
./MohammedRabeeh_TVE18CS036_program2.sh 20
```

2.4   Output (Image)


```
[mohammedrabeeh@BatBookPro final % ./MohammedRabeeh_TVE18CS036_program2.sh 10      ]
 fruit1.txt
[mohammedrabeeh@BatBookPro final % ./MohammedRabeeh_TVE18CS036_program2.sh 5       ]
 fruit1.txt
 fruit2.txt
[mohammedrabeeh@BatBookPro final % ./MohammedRabeeh_TVE18CS036_program2.sh 20      ]
 mohammedrabeeh@BatBookPro final %
```