Name: Jadhav Somnath Pandurang

Class: BCA – III Sem – V

Roll No: 86

LAB EXERCISE 1

Demonstrate the use of different GPU commands.

Q1: Date command: todays, tomorrows, 2years ago, 10 days ago, 2months ago, next Friday, Saturday 09/20/2025

Date Command: Linux date command is used to display date, time zone etc. It also used to set date time of the linux system.

Today:
Command: $ date

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~
$ date
Wed Sep 17 11:55:29 IST 2025
```

Tomorrow:
Command: $ date --date='tomorrow'

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~
$ date --date='tomorrow'
Thu Sep 18 11:56:53 IST 2025
```

2 years ago:
Command: $ date --date='2 years ago'

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~
$ date --date='2 years ago'
Sun Sep 17 11:57:41 IST 2023
```

10 days ago:
Command: $ date --date='10 days ago'

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~
$ date --date='10 days ago'
Sun Sep  7 11:59:17 IST 2025
```

2 months ago:
Command: $ date --date='2 months ago'

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~
$ date --date='2 months ago'
Thu Jul 17 12:01:01 IST 2025
```

Next Friday:
Command: $ date --date='next friday'

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~
$ date --date='next friday'
Fri Sep 19 00:00:00 IST 2025
```

Saturday 09/20/2025:
Command: $ date "+%A %m/%d/%Y"

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~
$ date  "+%A %m/%d/%Y"
Saturday 09/20/2025
```

Q2. wc command: create file with employee add emp name,emp city and age. And perform the all options of wc command

wc command: It stands for word count. It is used for counting purpose. Linux WC command helps in counting the lines, words & characters in the file

Command: $ cat > Employee
Somnath Sangli 20
Ravi Pune 23
Raj Satara 21
Jay Mumbai 24
Vijay Kolhapur 22

Command: $ cat Employee

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~
$ cat Employee
Somnath Sangli 20
Ravi Pune 23
Raj Satara 21
Jay Mumbai 24
Vijay Kolhapur 22
```

Total Word Count:
Command: $ wc Employee

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~
$ wc Employee
 5 15 77 Employee
```

-l:
Command: $ wc -l Employee

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~
$ wc -l Employee
5 Employee
```

-w:
Command: $ wc -w Employee

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~
$ wc -w Employee
15 Employee
```

-m:
Command: $ wc -m Employee

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~
$ wc -m Employee
77 Employee
```

-L:
Command: $ wc -L Employee

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~
$ wc -L Employee
17 Employee
```

Command: $ whoami

<u>whoami command</u>: This command is used to get information about currently logged-in user on the system

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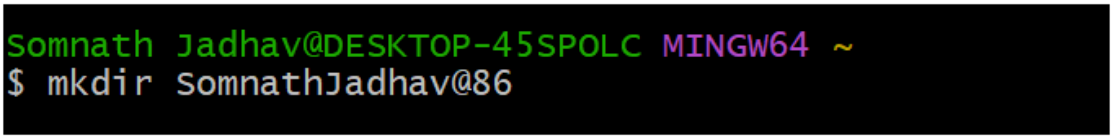
LAB EXERCISE 2

Demonstrate the use of file handling commands and Directory handling commands

Q1. Create folder with your name followed by roll no.

Command: $ mkdir SomnathJadhav@86

mkdir: It stands for make directory. With the help of this command you can create a new directory where you want in a system

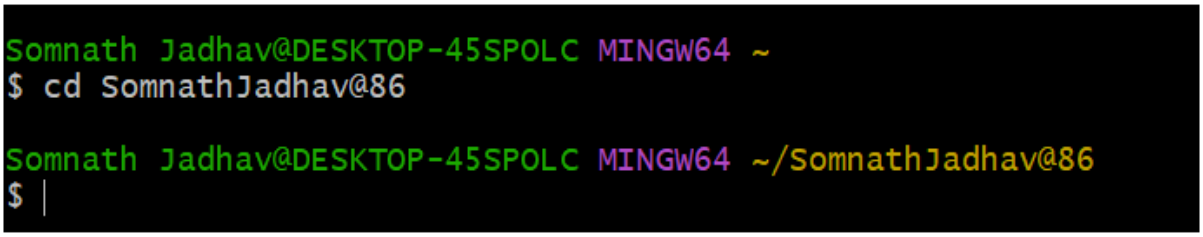


Command: $ ls

Q2. Change the directory from home to your directory

Command: $ cd SomnathJadhav@86

cd: This command is used to move from one directory to another directory



Q3. Create two files in the same directory. (friendlist1 and friendlist2 – add any 5 records with name and surname)

Command: $ cat > friendlist1
Somnath Jadhav
Yogesh Desai
Rohit Shinde
Manoj Patil
Mandar Koli

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ cat friendlist1
Somnath Jadhav
Yogesh Desai
Rohit Shinde
Manoj Patil
Mandar Koli
```

Command: $ cat > friendlist2
Ganesh Mane
Saksham Patil
Ruturaj Jadhav
Vishal Shinde
Rohan Chavan

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ cat friendlist2
Ganesh Mane
Saksham Patil
Ruturaj Jadhav
Vishal Shinde
Rohan Chavan
```

Q4. Concatenate the friendlist1 and friendlist2 and display the output.

Command: $ cat friendlist1 friendlist2 > friendlist

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ cat friendlist
Somnath Jadhav
Yogesh Desai
Rohit Shinde
Manoj Patil
Mandar Koli
Ganesh Mane
Saksham Patil
Ruturaj Jadhav
Vishal Shinde
Rohan Chavan
```

Q5. Append the file friendlist1 (add any 4 records)

Command: $ cat >> friendlist1
Vaibhav Mohite
Raghav Mali
Sagar Koli
Shridhar Jadhav

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ cat friendlist1
Somnath Jadhav
Yogesh Desai
Rohit Shinde
Manoj Patil
Mandar Koli
Vaibhav Mohite
Raghav Mali
Sagar Koli
Shridhar Jadhav
```

Q6. Copy the content of friendlist1 into new file My_friends. (using cat command)

Command: $ cat friendlist1 > My_friends

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ cat My_friends
Somnath Jadhav
Yogesh Desai
Rohit Shinde
Manoj Patil
Mandar Koli
Vaibhav Mohite
Raghav Mali
Sagar Koli
Shridhar Jadhav
```

Q7. Create the copy of My_friends to Copy_MyFriends (using cp command)

Cp: cp stands for copy. This command is used to copy files or a group of files or directories. It creates an exact image of a file on a disk with with different filename.

Command: $ cp My_friends Myfriends

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ cat Myfriends
Somnath Jadhav
Yogesh Desai
Rohit Shinde
Manoj Patil
Mandar Koli
Vaibhav Mohite
Raghav Mali
Sagar Koli
Shridhar Jadhav
```

Q8. Rename the file friendlist2 to NewFriendList.

mv – Linux mv command is used to move existing file or directory from one location to another. It also used to rename a file or directory

Before:

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ls
Copy_MyFriends  friendlist1  friendlist2  myfriends
```

Command: $ mv friendlist2 NewFriendList

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ls
Copy_MyFriends  NewFriendList  friendlist1  myfriends
```

Q9. Create the 3 folders folder1, folder2, folder3

Command: $ mkdir folder1 folder2 folder3

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ls
My_friends  NewFriendList  folder2/  friendlist
Myfriends   folder1/       folder3/  friendlist1
```

Q10. Move the file employee, friendlist2 to folder2 and friendlist1 to folder3

Command: $ mv Employee NewFriendList folder2

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86/folder2
$ ls
Employee  NewFriendList
```

Command: $ mv friendlist1 folder3

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86/folder3
$ ls
friendlist1
```

Q11. Search the file and folder using asterisk whose name starts with f and c

Command: $ ls f*

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ls f*
friendlist  fruits

folder1:
```

Command: $ ls c*

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ls c*
ls: cannot access 'c*': No such file or directory
```

Q12. Delete the employee from folder2 with permission.

Before:

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86/folder2
$ ls
NewFriendlist  employee
```

Command: $ rm -i employee

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86/folder2
$ ls
NewFriendlist
```

Q13. Delete the folder3.

Before:

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ls
Copy_MyFriends  NewFriendList  folder2/  friendlist1
Employee        folder1/       folder3/  myfriends
```

Command: $ rm -r folder3

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ls
Copy_MyFriends  NewFriendList  folder2/     myfriends
Employee        folder1/       friendlist1
```

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LAB EXERCISE 3

Demonstrate the use different filter commands

Q1. Create the file electronic_products and add name and price of product

Command: $ cat > electronic_products
Laptop 20000
Cpu 10000
Bulb 200
Fan 4000
Blower 500

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ cat electronic_products
Laptop 20000
Cpu 10000
Bulb 200
Fan 4000
Blower 500
```

Q2. Create the file stationary_products and add name and price of products

Command: $ cat > stationary_products
Pen 15
Pencil 10
Book 40
NoteBook 60
Ruler 10

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ cat stationary_products
Pen 15
Pencil 10
Book 40
NoteBook 60
Ruler 10
```

Q3. Create the file home_products and add name and price of products

Command: $ cat > home_products
TV 40000
WashingMachine 7000
Sofa 5000
DinningTable 3000
Microwave 2500

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ cat home_products
TV 40000
WashingMachine 7000
Sofa 5000
DinningTable 3000
Microwave 2500
```

Q4. Display the contents of column 2 from electronic_products file

Cut: This command is used for selecting a specific column of a file. It is used to cut a specific section by byte, position, character & writes then to the standard output.

Command: $ cut -d" " -f2 electronic_products

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ cut -d" " -f2 electronic_products
20000
10000
200
4000
500
```

Q5. Display the contents of column 1 from electronic_products file

Command: $ cut -d" " -f1 electronic_products

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ cut -d" " -f1 electronic_products
Laptop
Cpu
Bulb
Fan
Blower
```

Q6. Cut the characters from position 2 and 5

Command: $ cut -c 2,5 electronic_products

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ cut -c 2,5 electronic_products
ao
p1
u
a4
le
```

Q7. Cut the characters form range 1-5

Command: $ cut -c 1-5 electronic_products

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ cut -c 1-5 electronic_products
Lapto
Cpu 1
Bulb
Fan 4
Blowe
```

Q8. Demonstrate the use of complement option with above same position and range.

Command: $ cut --complement -c 2,5 electronic_products

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ cut --complement -c 2,5 electronic_products
Lptp 20000
Cu 0000
Blb200
Fn 000
Bowr 500
```

Q9. Merge the both files horizontally.

Command: $ paste electronic_products home_products

Paste: Paste command allows you to merge lines of files horizontally. It outputs lines consisting of the sequentially corresponding lines of each file specified as an argument & separated by tabs.

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ paste electronic_products home_products
Laptop 20000    TV 40000
Cpu 10000       WashingMachine 7000
Bulb 200        Sofa 5000
Fan 4000        DinningTable 3000
Blower 500      Microwave 2500
```

Q10. Use _ (underscore) and | delimiters while merge the files.

Command: $ paste -d"_" electronic_products home_products

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ paste -d"_" electronic_products home_products
Laptop 20000_TV 40000
Cpu 10000_WashingMachine 7000
Bulb 200_Sofa 5000
Fan 4000_DinningTable 3000
Blower 500_Microwave 2500
```

Command: $ paste -d"|" electronic_products home_products

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ paste -d"|" electronic_products home_products
Laptop 20000|TV 40000
Cpu 10000|WashingMachine 7000
Bulb 200|Sofa 5000
Fan 4000|DinningTable 3000
Blower 500|Microwave 2500
```

Q11. Merge above three files using different delimiters.

Command: $ paste -d"*_" electronic_products home_products stationary_products

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ paste -d"*_" electronic_products home_products stationary_products
Laptop 20000*TV 40000_Pen 15
Cpu 10000*WashingMachine 7000_Pencil 10
Bulb 200*Sofa 5000_Book 40
Fan 4000*DinningTable 3000_NoteBook 60
Blower 500*Microwave 2500_Ruler 10
```

Q12. Create the file week and sort it.

Command: $ sort week

Sort- Sort command is used to sort content of the file alphabetically.

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ sort week
Friday
Monday
Saturday
Sunday
Thursday
Tuesday
Wednesday
```

Q13. Sort the stationary_product file on the basis of product price.

Command: $ sort -n -k2 stationary_products

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ sort -n -k2 stationary_products
Pencil 10
Ruler 10
Pen 15
Book 40
NoteBook 60
```

Q14. Sort the stationary_product file on the basis of column one.

Command: $ sort -k1 stationary_products

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ sort -k1 stationary_products
Book 40
NoteBook 60
Pen 15
Pencil 10
Ruler 10
```

Q15. Create the file fruits and add repeated data on that file.

Command: $ cat > fruits
Orange
Mango
Orange
Mango
Apple
Orange

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ cat fruits
Orange
Mango
Orange
Mango
Apple
Orange
```

Q16. Sort the file fruit.

Command: $ sort fruits

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ sort fruits
Apple
Mango
Mango
Orange
Orange
Orange
```

Q17. Remove the repeated lines from the file fruit.

Command: $ sort fruits | uniq

uniq – Linux uniq command is used to remove all repeated lines from the file.

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ sort fruits | uniq
Apple
Mango
Orange
```

Q18. Display the repeated lines from the file fruit.

Command: $ sort fruits | uniq -d

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ sort fruits | uniq -d
Mango
Orange
```

Q19. Count the number of occurrences of words in the fruit file.

Command: $ sort fruits | uniq -c

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ sort fruits | uniq -c
      1 Apple
      2 Mango
      3 Orange
```

Q20. Display the unique lines from fruit file.

Command: $ sort fruits | uniq -u

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ sort fruits | uniq -u
Apple
```

Q21. Display the home_product whose price starts with 7 (use pipe symbol)

Command: $ cat home_products | grep 7

Grep: grep is used for global regular expression print. Grep command filter the contents of a file which makes our search easy.

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ cat home_products | grep 7
WashingMachine 7000
```

Q22. Display the home_product whose price start with 2 (without pipe symbol)

Command: $ grep 2 home_products

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ grep 2 home_products
Microwave 2500
```

Q23. Create file on My_college. And find the line which contains word college using grep command.

Command: cat My_college

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ cat My_college
My college name is CIMDR college, Sangli.
I love programming.
Our collage has big library.
```

Command: $ grep "college" My_college

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ grep "college" My_college
My college name is CIMDR college, Sangli.
```

Q24. Create the file Numbers add one to fifteen numbers.

Command: $ cat > Numbers

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ cat Numbers
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
```

Q25. Display the first 10 lines from numbers file

Command: $ head Numbers

Head - Head command in linux is used to display first lines of the file. By default, it displays first 10 lines of the file.

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ head Numbers
1
2
3
4
5
6
7
8
9
10
```

Q26. Display the first 5 lines from file.

Command: $ head -n 5 Numbers

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ head -n 5 Numbers
1
2
3
4
5
```

Q27. Display the last 10 lines from numbers file.

Command: $ tail numbers

Tail- Tail command in linux is used to display last lines of the file. By default, it displays last10 lines of the file.

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ tail numbers
6
7
8
9
10
11
12
13
14
15
```

Q28. Display the last 5 lines from number file.

Command: $ tail -n 5 numbers

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ tail -n 5 numbers
11
12
13
14
15
```

Q29. Display the last 6 lines from first 9 lines from number file.

Command: $ head -n 9 numbers | tail -n 6

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ head -n 9 numbers | tail -n 6
4
5
6
7
8
9
```

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LAB EXERCISE 4

Q. Write a shell script to demonstrate echo statement.

```
#!/bin/bash

echo A shell is special user program which provide an interface to user to use operating system service.
echo
echo Shell accept human readable commands from user and convert them into something which kernel can understand.
```

Output:

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ./lex4.sh
A shell is special user program which provide an interface to user to use operating system service.

Shell accept human readable commands from user and convert them into something which kernel can understand.
```

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LAB EXERCISE 5

Q. Write a shell script to demonstrate echo and read statement.

```
#!/bin/bash

read -p "Enter your name : " name
read -p "Enter your collage name : " c_name
read -p "Enter your roll number : "

echo xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

echo Name : $name
echo Collage Name : $c_name
echo Roll Number : $roll_no
```

Output:

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ./lex5.sh
Enter your name : Somnath Jadhav
Enter your collage name : CIMDR, Sangli
Enter your roll number : 86
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
Name : Somnath Jadhav
Collage Name : CIMDR, Sangli
Roll Number :
```

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LAB EXERCISE 6

Q. Write a simple shell script to find exact number.

```
#!/bin/bash

read -p "Enter Number : " num

if [ $num == 100 ]
then
        echo Given Number is 100
fi
```

Output:

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ./lex6.sh
Enter Number : 100
Given Number is 100
```

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LAB EXERCISE 7

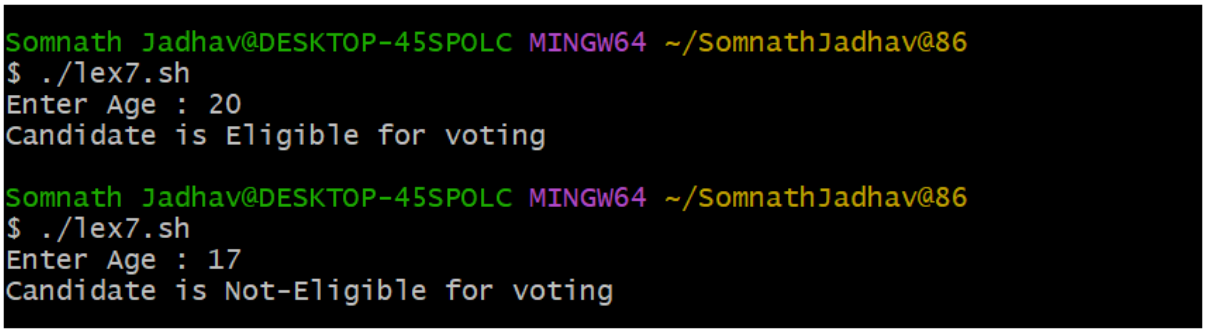
Q. Write a shell script to find the candidate is eligible for voting or not.

```
#!/bin/bash

read -p "Enter Age : " age

if [ $age -ge 18 ]
then
        echo Candidate is Eligible for voting
else
        echo Candidate is Not-Eligible for voting
fi
```

Output:



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LAB EXERCISE 8

Q. Write a shell script to find whether a given no is even or odd.

```
#!/bin/bash

read -p "Enter number : " num

if [ $(($num % 2)) -eq 0 ]
then
	echo "$num is even number"
else
	echo "$num is odd number"
fi
```

Output:

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ./lex8.sh
Enter number : 86
86 is even number

Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ./lex8.sh
Enter number : 77
77 is odd number
```

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LAB EXERCISE 9

Q. Write a shell script WAP to find out maximum no from given three numbers.

```
#!/bin/bash

read -p "Enter the first number : " num1
read -p "Enter the second number : " num2
read -p "Enter the third number : " num3

if [ $num1 -gt $num2 ] && [ $num1 -gt $num3 ]
then
        echo "$num1 is greater than $num2 and $num3"
elif [ $num2 -gt $num1 ] && [ &num2 -gt $num3 ]
then
        echo "$num2 is greater then $num1 and $num3"
else
        echo "$num3 is greater than $num1 and $num2"
fi
```

Output:

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ./lex9.sh
Enter the first number : 99
Enter the second number : 87
Enter the third number : 76
99 is greater than 87 and 76

Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ./lex9.sh
Enter the first number : 8
Enter the second number : 5
Enter the third number : 4
8 is greater than 5 and 4
```

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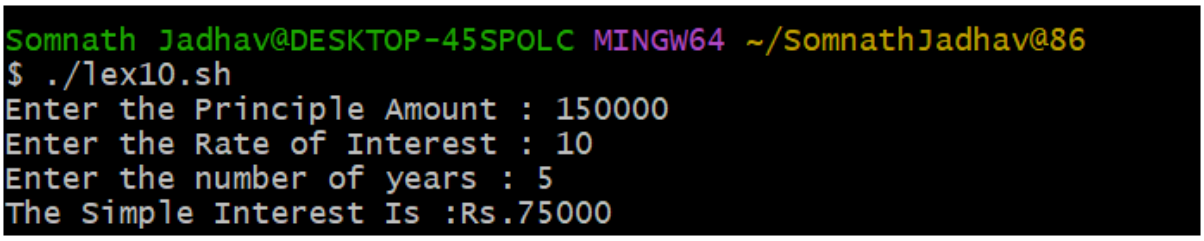
LAB EXERCISE 10

Q. Write a shell script to calculate simple interest.

```
#!/bin/bash

read -p "Enter the Principle Amount : " price
read -p "Enter the Rate of Interest : " rate
read -p "Enter the number of years : " years
echo "The Simple Interest Is :Rs.$(expr $price \* $rate \* $years / 100)"
```

Output:



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LAB EXERCISE 11

Q. Write a shell script to create mark sheet.

```
#!/bin/bash

read -p "Enter the Student Name : " name
read -p "Enter the Marks of Linux : " linux
read -p "Enter the Marks of Java : " java
read -p "Enter the Marks of DWDM : " dwdm
read -p "Enter the marks of Account : " ac
echo -e "-- \n Student Information--"

echo -e "\nName: $name"
echo -e "Subject Marks \n Linux: $linux \n Java: $java \n DWDM: $dwdm \n Account: $ac"
echo

total=$(expr $linux + $java + $dwdm + $ac)
echo "The total marks: $total"
per=$(expr $total / 4)
echo "Percentage: $per"
echo

if [ $per -ge 75 ]
then
	echo "$name You got Distinction"
elif [ $per -ge 60 ]
then
	echo $name You got first class
elif [ $per -ge 50 ]
then
	echo "$name You got second class"
elif [ $per -ge 35 ]
then
	echo $name You are pass
else
	echo You are fail
fi
```

Output:

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ./lex11.sh
Enter the Student Name : Somnath Jadhav
Enter the Marks of Linux : 76
Enter the Marks of Java : 65
Enter the Marks of DWDM : 43
Enter the marks of Account : 45

 -- Student Information--

Name: Somnath Jadhav
Subject Marks
Linux: 76
Java: 65
DWDM: 43
Account: 45

The total marks: 229
Percentage: 57

Somnath Jadhav You got second class
```

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LAB EXERCISE 12

Q. Write a shell script to use of switch case structure.

```
#!/bin/bash
read -p "Enter the number : " num
case $num in
[0-9])
        echo "You have entered a single digit number"
        ;;

[0-9][0-9])
        echo "You have entered a two digit number"
        ;;

[0-9][0-9][0-9])
        echo "You have entered a three digit number"
        ;;

*)
        echo "Your entry does not match any of the conditions"
        ;;
esac
```

Output:

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ./lex12.sh
Enter the number : 5
You have entered a single digit number

Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ./lex12.sh
Enter the number : 56
You have entered a two digit number

Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ./lex12.sh
Enter the number : 1548
Your entry does not match any of the conditions

Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ./lex12.sh
Enter the number : 124
You have entered a three digit number
```

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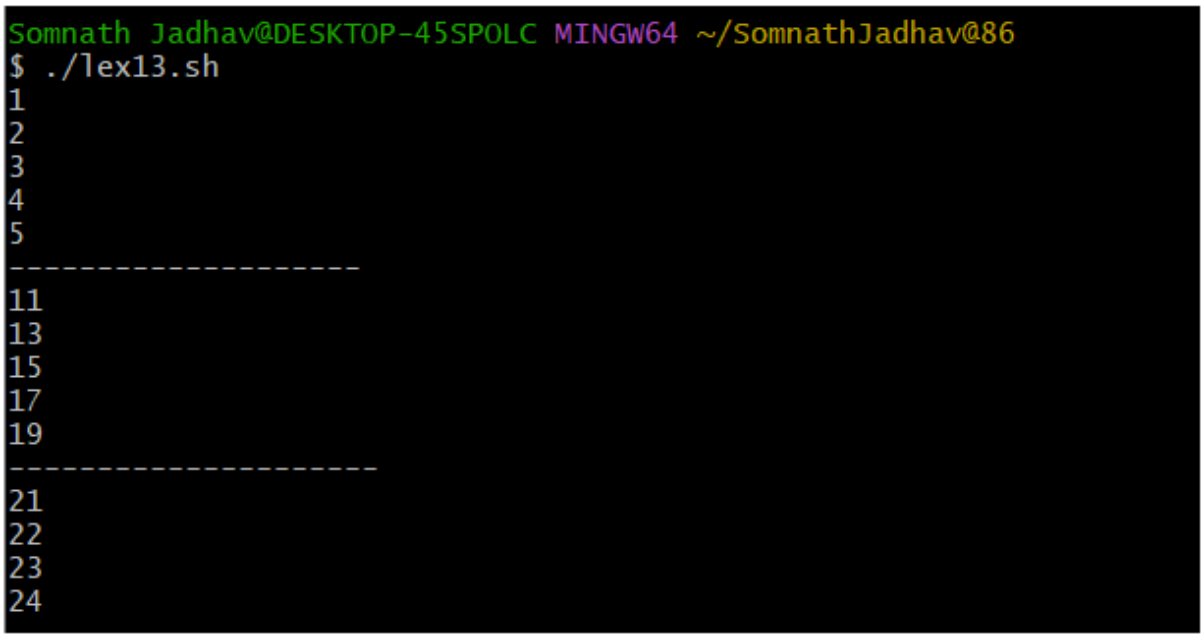
LAB EXERCISE 13

Q. Write a shell script for simple for loop.

```
#!/bin/bash

for i in {1..5}
do
	echo "$i"
done
echo "--------------------"
for j in {11..20..2}
do
	echo "$j"
done
echo "----------------------"
for (( k = 21; k < 25; k++ ))
do
	echo "$k"
done
```

Output:



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LAB EXERCISE 14

Q. Write a shell script to display even numbers between 2 to 50 using while loop.

```
#!/bin/bash

n=2
while [ $n -le 50 ]
do
	echo "$n "
	n=$(( n+2 ))
done
```

Output:

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ./lex14.sh
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
40
42
44
46
48
50
```

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LAB EXERCISE 15

Q. Write a shell script to calculate factorial of given number.

```
#!/bin/bash

read -p "Enter an Number : " num
fact=1

for ((i=2; i<=num; i++))
{
  fact=$(( fact*i ))
}

echo Factorial of $num = $fact
```

Output:

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ./lex15.sh
Enter an Number : 5
Factorial of 5 = 120
```

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LAB EXERCISE 16

Q. Write a shell script to calculate factorial of given number.

```
#!/bin/bash
read -p "Enter Number : " num

for((i=2; i<=num/2; i++))
do
	if [ $((num%i)) -eq 0 ]
	then
	echo "$num Not prime number."
	exit
	fi
done
echo "$num is a prime number."
```

Output:

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ./lex16.sh
Enter Number : 44
44 Not prime number.

Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ./lex16.sh
Enter Number : 5
5 is a prime number.
```

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LAB EXERCISE 17

Q. Write a shell script to find whether the given number is perfect or not.

```
#!/bin/bash

read -p "Enter a number : " no
i=1
ans=0

while [ $i -le `expr $no / 2` ]
do

	if [ `expr $no % $i` -eq 0 ]
	then
		ans=`expr $ans + $i`
	fi
	i=`expr $i + 1`
done

if [ $no -eq $ans ]
then
	echo $no is Perfect Number
else
	echo $no is NOT Perfect Number
fi
```

Output:

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ./lex17.sh
Enter a number : 15
15 is NOT Perfect Number

Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ./lex17.sh
Enter a number : 6
6 is Perfect Number
```

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LAB EXERCISE 18

Q. Write a shell script to find whether the given string is palindrome or not.

```
#!/bin/bash
read -p "Enter a String : " input

reverse=""
len=${#input}

for (( i=$len-1; i>=0; i-- ))
do
	reverse="$reverse${input:$i:1}"
done

if [ $input == $reverse ]
then
	echo "$input is Palindrome"
else
	echo "$input is Not Palindrome"
fi
```

Output:

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ./lex18.sh
Enter a String : LEVEL
LEVEL is Palindrome

Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ./lex18.sh
Enter a String : Hi
Hi is Not Palindrome
```

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LAB EXERCISE 19

Q. Write a shell script whether Number is Armstrong number or not.

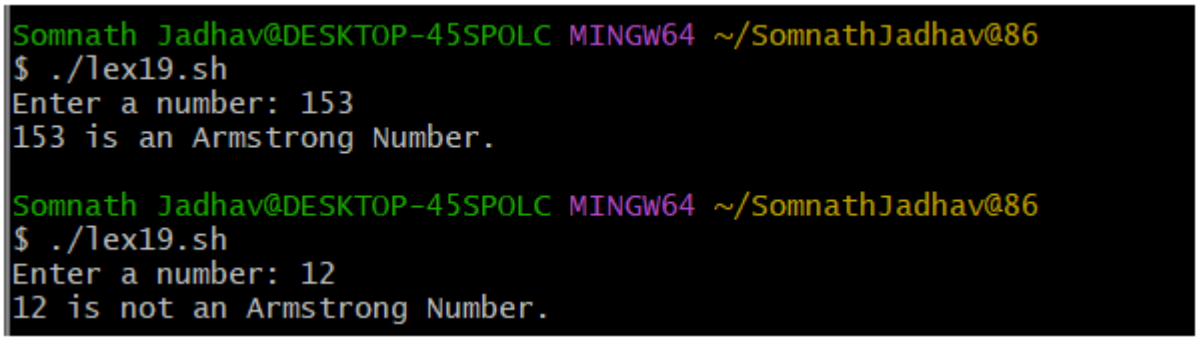
```
#!/bin/bash
read -p "Enter a number: " num

x=$num
sum=0
r=0
n=0

while [ $x -gt 0 ]
do
	r=`expr $x % 10`
	n=`expr $r \* $r \* $r`
	sum=`expr $sum + $n`
	x=`expr $x / 10`
done

if [ $sum -eq $num ]
then
	echo "$num is an Armstrong Number."
else
	echo "$num is not an Armstrong Number."
Fi
```

Output:



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LAB EXERCISE 20

Q. Write a shell script to find sum of digits of given Number using while.

```
#!/bin/bash
read -p "Enter Number : " num
g=$num
s=0

while [ $num -gt 0 ]
do
	k=$(( $num % 10 ))
	num=$(( $num / 10 ))
	s=$(( $s + $k ))
done
echo "sum of digits of $g is : $s"
```

Output:

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ./lex20.sh
Enter Number : 1546
sum of digits of 1546 is : 16
```

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LAB EXERCISE 21

Q. Write a shell script to show the path and create directory.

```
#!/bin/bash

pwd
mkdir Student

echo Directory Created Successfully
```

Output:

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ./lex21.sh
/c/Users/Win-10/SomnathJadhav@86
Directory Created Successfully

Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ls
My_college  Student/            fruits          lex12.sh*  lex16.sh*  lex20.sh*  lex6.sh*  stationary_products
My_friends  electronic_products home_products   lex13.sh*  lex17.sh*  lex21.sh*  lex7.sh*  week
Myfriends   folder1/            lex10.sh*       lex14.sh*  lex18.sh*  lex4.sh*   lex8.sh*
Numbers     friendlist          lex11.sh*       lex15.sh*  lex19.sh*  lex5.sh*   lex9.sh*
```

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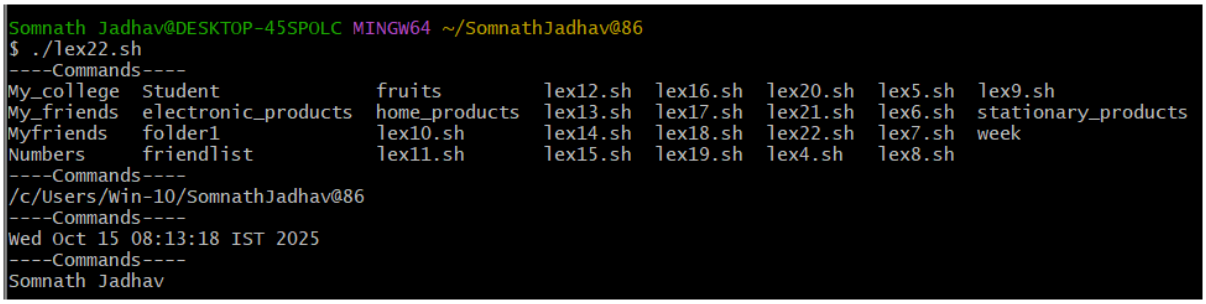
LAB EXERCISE 22

Q. Write a shell script using for loop to display different commands.

```
#!/bin/bash

for command in ls pwd date whoami
do
	echo ----Commands----
	$command
done
```

Output:



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LAB EXERCISE 23

Q. Write a shell script that check whether the given string is found in a file or not. Display appropriate message.

```
#!/bin/bash

read -p "Enter File Name : " file
read -p "Enter string to find : " string
str=`grep $string $file`
if [ $? -eq 0 ]
then
        echo Pattern Found
else
        echo Pattern not found
fi
```

Fruit File:

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ cat fruits
Orange
Mango
Orange
Mango
Apple
Orange
```

Output:

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ./lex23.sh
Enter File Name : fruits
Enter string to find : Mango
Pattern Found

Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ./lex23.sh
Enter File Name : fruits
Enter string to find : Chiku
Pattern not found
```

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LAB EXERCISE 24

Q. Write a shell script which displays a list of all files, contents of file and copy the contents of file in the current directory.

```
#!/bin/bash

echo -ls command -
ls
echo -cat command to show friendlist file -
cat friendlist
echo -cp command copy the contents of fruits file -
cp fruits fruitlist
echo file copied....!
cat fruitlist
echo ------------------------------------------------------------
```

Output:

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ./lex24.sh
-ls command -
My_college  Student             fruitlist      lex11.sh  lex15.sh  lex19.sh  lex23.sh  lex6.sh  stationary_products
My_friends  electronic_products  fruits         lex12.sh  lex16.sh  lex20.sh  lex24.sh  lex7.sh  week
Myfriends   folder1              home_products  lex13.sh  lex17.sh  lex21.sh  lex4.sh   lex8.sh
Numbers     friendlist          lex10.sh       lex14.sh  lex18.sh  lex22.sh  lex5.sh   lex9.sh
-cat command to show friendlist file -
Somnath Jadhav
Yogesh Desai
Rohit Shinde
Manoj Patil
Mandar Koli
Ganesh Mane
Saksham Patil
Ruturaj Jadhav
Vishal Shinde
Rohan Chavan
-cp command copy the contents of fruits file -
file copied....!
Orange
Mango
Orange
Mango
Apple
Orange
------------------------------------------------------------
```

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LAB EXERCISE 25

Q. Write a shell script using switch case to run a particular command.

```
#!/bin/bash

echo -e "a) Show current date \nb) Show current directory \nc) List Files"
read -p "Enter your choice : " choice

case $choice in
a)
	echo "Todays date is : $(date)"
	;;
b)
	echo "Your are in $(pwd)"
	;;
c)
	echo "Files in this directory"
	ls;;
*)
	echo "Invalid Option"
esac
```

Output:

```
Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ./lex25.sh
a) Show current date
b) Show current directory
c) List Files
Enter your choice : a
Todays date is : Wed Oct 15 08:33:53 IST 2025

Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ./lex25.sh
a) Show current date
b) Show current directory
c) List Files
Enter your choice : b
Your are in /c/Users/Win-10/SomnathJadhav@86

Somnath Jadhav@DESKTOP-45SPOLC MINGW64 ~/SomnathJadhav@86
$ ./lex25.sh
a) Show current date
b) Show current directory
c) List Files
Enter your choice : c
Files in this directory
My_college  Student             fruitlist      lex11.sh  lex15.sh  lex19.sh  lex23.sh  lex5.sh  lex9.sh
My_friends  electronic_products  fruits         lex12.sh  lex16.sh  lex20.sh  lex24.sh  lex6.sh  stationary_products
Myfriends   folder1              home_products  lex13.sh  lex17.sh  lex21.sh  lex25.sh  lex7.sh  week
Numbers     friendlist           lex10.sh       lex14.sh  lex18.sh  lex22.sh  lex4.sh   lex8.sh
```

@@@