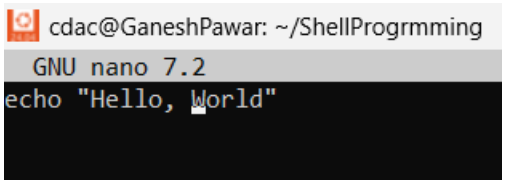
Name : Ganesh Dattatraya Pawar

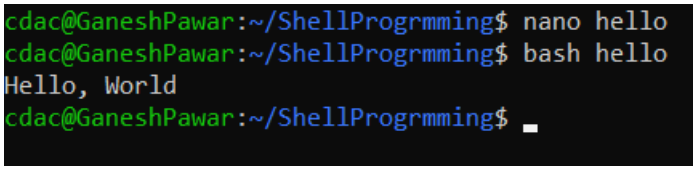
Concepts of Operating System

Assignment 2

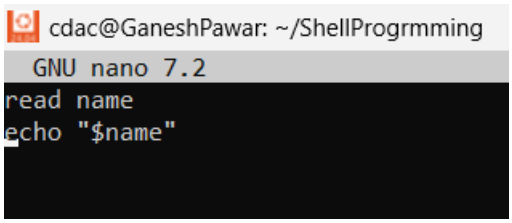
Part C

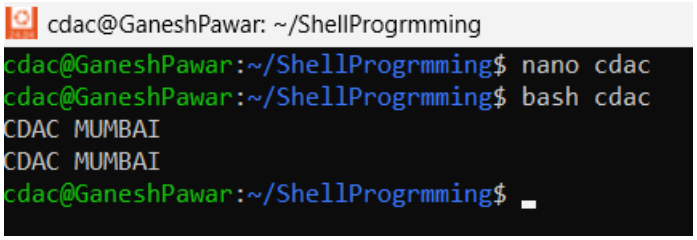
Question 1: Write a shell script that prints "Hello, World!" to the terminal.





Question 2: Declare a variable named "name" and assign the value "CDAC Mumbai" to it. Print the value of the variable.





Question 3: Write a shell script that takes a number as input from the user and prints it.

```
cdac@GaneshPawar: ~/ShellProgrmming
  GNU nano 7.2
read number
echo "Entered Number is : $number"
```

```
cdac@GaneshPawar: ~/ShellProgrmming
cdac@GaneshPawar:~/ShellProgrmming$ nano number
cdac@GaneshPawar:~/ShellProgrmming$ bash number
52
Entered Number is : 52
cdac@GaneshPawar:~/ShellProgrmming$
```

Question 4: Write a shell script that performs addition of two numbers (e.g., 5 and 3) and prints the result.

```
cdac@GaneshPawar: ~/ShellProgrmming
  GNU nano 7.2
echo "Enter Number 1"
read num1
echo "Enter Number 2"
read num2
sum=$((num1 + num2))
echo "Addition is $sum"
```

```
cdac@GaneshPawar: ~/ShellProgrmming
cdac@GaneshPawar:~/ShellProgrmming$ nano addition
cdac@GaneshPawar:~/ShellProgrmming$ bash addition
Enter Number 1
10
Enter Number 2
25
Addition is 35
cdac@GaneshPawar:~/ShellProgrmming$
```

Question 5: Write a shell script that takes a number as input and prints "Even" if it is even, otherwise prints "Odd".

cdac@GaneshPawar: ~/ShellProgrmming

```
  GNU nano 7.2
echo "Enter Number 1"
read num1
if [ $((num1 % 2)) -eq 0 ]
then
        echo "Number is even"
else
        echo "Number is Odd"
fi
```

cdac@GaneshPawar: ~/ShellProgrmming

```
cdac@GaneshPawar:~/ShellProgrmming$ nano evenodd
cdac@GaneshPawar:~/ShellProgrmming$ bash eveodd
bash: eveodd: No such file or directory
cdac@GaneshPawar:~/ShellProgrmming$ bash evenodd
Enter Number 1
4
Number is even
cdac@GaneshPawar:~/ShellProgrmming$ bash evenodd
Enter Number 1
9
Number is Odd
cdac@GaneshPawar:~/ShellProgrmming$
```

Question 6: Write a shell script that uses a for loop to print numbers from 1 to 5.

cdac@GaneshPawar: ~/ShellProgrmming

```
  GNU nano 7.2

for i in {1..5}
do
        echo "$i"
done
```

cdac@GaneshPawar: ~/ShellProgrmming

```
cdac@GaneshPawar:~/ShellProgrmming$ nano forloop1
cdac@GaneshPawar:~/ShellProgrmming$ bash forloop1
1
2
3
4
5
cdac@GaneshPawar:~/ShellProgrmming$
```

Question 7: Write a shell script that uses a while loop to print numbers from 1 to 5.

```
cdac@GaneshPawar: ~/ShellProgrmming
  GNU nano 7.2
i=1
n=5
while [ $i -le $n ]
do
        echo $i
((i++))
done
```

```
cdac@GaneshPawar:~/ShellProgrmming$ nano whileloop
cdac@GaneshPawar:~/ShellProgrmming$ bash whileloop
1
2
3
4
5
cdac@GaneshPawar:~/ShellProgrmming$
```

Question 8: Write a shell script that checks if a file named "file.txt" exists in the current directory. If it does, print "File exists", otherwise, print "File does not exist".

```
cdac@GaneshPawar: ~/ShellProgrmming
  GNU nano 7.2
if [ -e file.txt ]
then
        echo "File.txt Exist"
else
        echo "File.txt Not Exist"
fi
```

```
cdac@GaneshPawar:~/ShellProgrmming$ nano checkfile
cdac@GaneshPawar:~/ShellProgrmming$ bash checkfile
File.txt Not Exist
cdac@GaneshPawar:~/ShellProgrmming$ ls
addition  cdac  checkfile  evenodd  forloop1  greater  hello  hellouser  multiplication  number  whileloop
cdac@GaneshPawar:~/ShellProgrmming$ touch file.txt
cdac@GaneshPawar:~/ShellProgrmming$ ls
addition  cdac  checkfile  evenodd  file.txt  forloop1  greater  hello  hellouser  multiplication  number  whileloop
cdac@GaneshPawar:~/ShellProgrmming$ bash checkfile
File.txt Exist
cdac@GaneshPawar:~/ShellProgrmming$
```

Question 9: Write a shell script that uses the if statement to check if a number is greater than 10 and prints a message accordingly.

cdac@GaneshPawar: ~/ShellProgrmming

```
 GNU nano 7.2
read n
if [ $n -ge 10 ]
then
        echo "Number is Greater Than 10"
else
        echo "Number is less than 10"
fi
```

cdac@GaneshPawar: ~/ShellProgrmming

```
cdac@GaneshPawar:~/ShellProgrmming$ nano file
cdac@GaneshPawar:~/ShellProgrmming$ bash file
54
Number is Greater Than 10
cdac@GaneshPawar:~/ShellProgrmming$ bash file
5
Number is less than 10
cdac@GaneshPawar:~/ShellProgrmming$
```

Question 10: Write a shell script that uses nested for loops to print a multiplication table for numbers from 1 to 5. The output should be formatted nicely, with each row representing a number and each column representing the multiplication result for that number.

cdac@GaneshPawar: ~/ShellProgrmming

```
 GNU nano 7.2
for i in {1..10}
do

    for j in {1..5}
    do

        printf "%4d" $((i * j))
    done

    echo
done
```

```
cdac@GaneshPawar:~/ShellProgrmming$ nano forloop2
cdac@GaneshPawar:~/ShellProgrmming$ bash forloop2
   1   2   3   4   5
   2   4   6   8  10
   3   6   9  12  15
   4   8  12  16  20
   5  10  15  20  25
   6  12  18  24  30
   7  14  21  28  35
   8  16  24  32  40
   9  18  27  36  45
  10  20  30  40  50
cdac@GaneshPawar:~/ShellProgrmming$
```

Question 11: Write a shell script that uses a while loop to read numbers from the user until the user enters a negative number. For each positive number entered, print its square. Use the break statement to exit the loop when a negative number is entered.

cdac@GaneshPawar: ~/ShellProgrmming

```
 GNU nano 7.2
#!/bin/bash/

while true
do
        read number
        if [ $number -lt 0 ]
        then
                break
        fi
        square=`expr $number\*$number`
        echo 'Square of $number is $square'
done
```

```
cdac@GaneshPawar:~/ShellProgrmming$ nano squareNo
cdac@GaneshPawar:~/ShellProgrmming$ bash squareNo
4
Square of $number is $square
5
Square of $number is $square
6
Square of $number is $square
8
Square of $number is $square
8
Square of $number is $square
2
Square of $number is $square
-1
cdac@GaneshPawar:~/ShellProgrmming$
```