Subject Name: **Computer Programming with C**

Subject Code: **MCA102**

Assignment-1

Topic: **C Basics and Operators**

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Section: **B**

Enrollment No: **12024006015093**

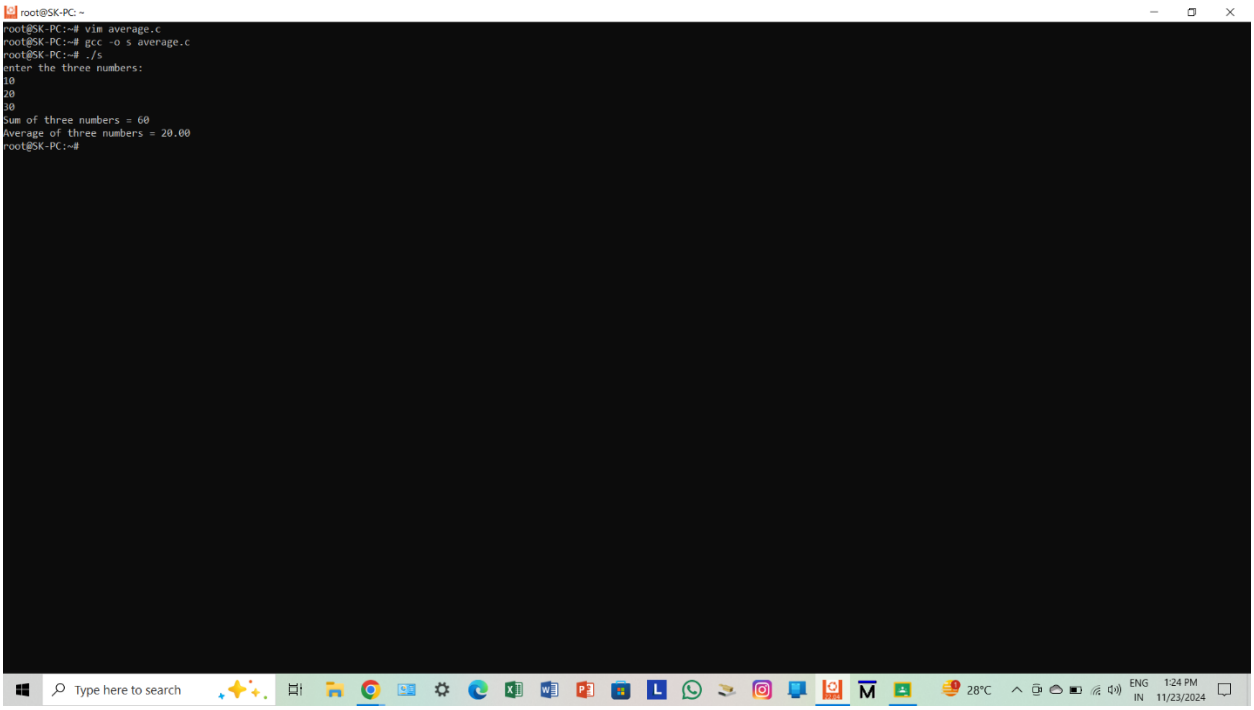
Class Roll No: **36**

1. Write a C program to find the sum and average of three numbers.

```
#include <stdio.h>


int main()
{
    int a,b,c,sum;
    float avg;
    printf("enter the three numbers: ");
    scanf("%d %d %d", &a, &b, &c);
    sum= a+b+c;
```

```
    avg= sum/3.0;

    printf("Sum of three numbers = %d\n", sum);

    printf("Average of three numbers = %.2f\n", avg);

    return 0;

}
```

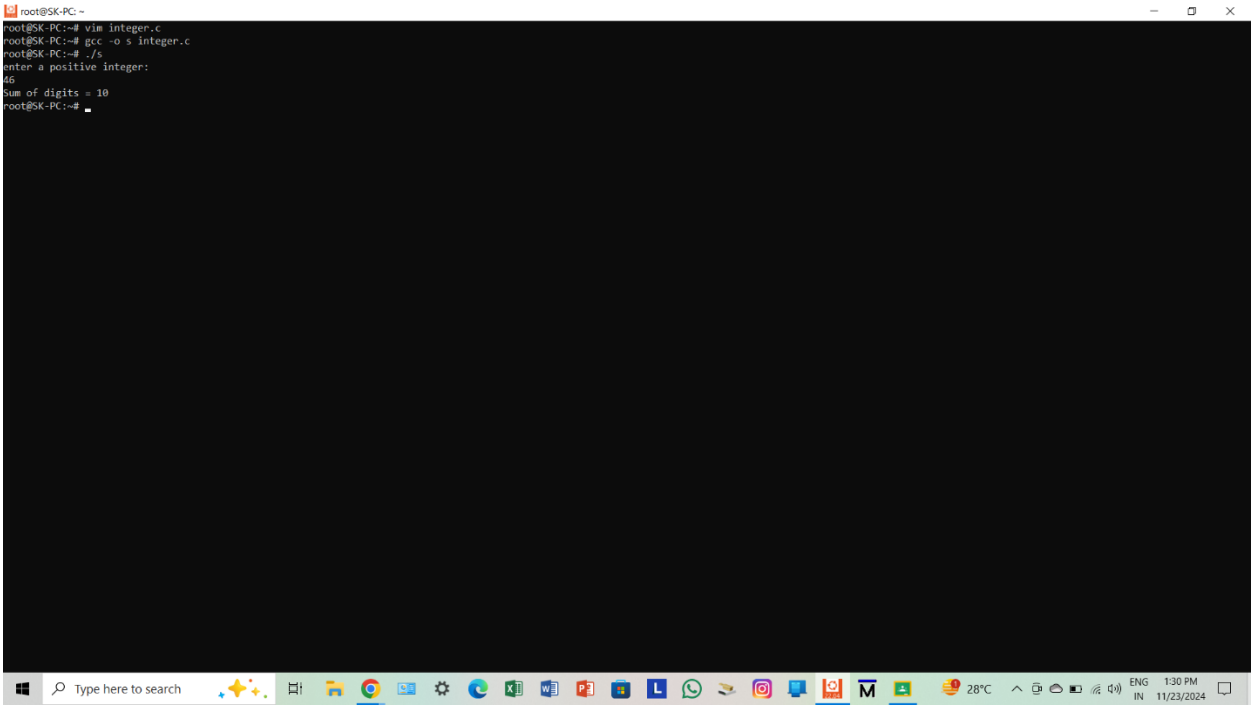
OUTPUT



2. Write a C program to find the sum of individual digits of a given positive integer.

```
#include <stdio.h>


int main()
{
    int n,sum=0,d;
    printf("enter a positive integer: ");
    scanf("%d", &n);
    while(n>0)
    {
        d=n%10;
        sum=sum+d;
        n=n/10;
    }
    printf("Sum of digits = %d\n", sum);
    return 0;
}
```

OUTPUT

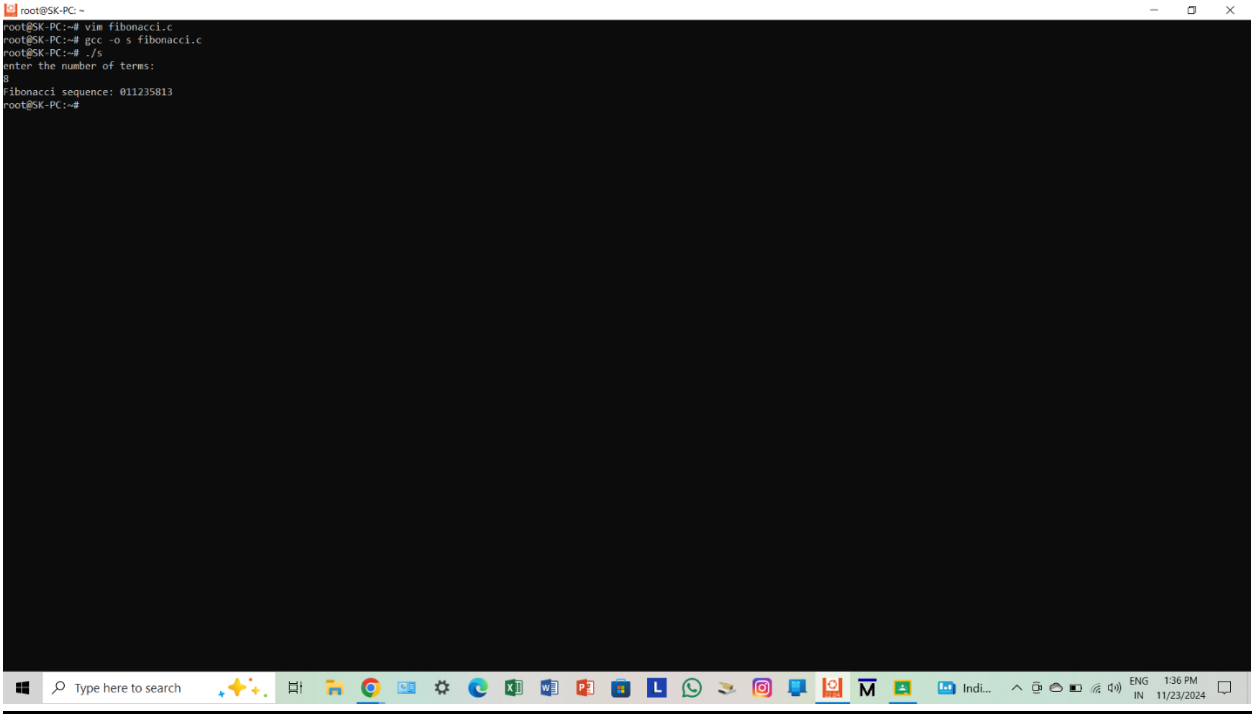


3. Write a C program to generate the first n terms of the Fibonacci sequence.

```
#include <stdio.h>


int main()

{

    int n,a=0,b=1,next,i;

    printf("enter the number of terms: ");

    scanf("%d", &n);

    printf("Fibonacci sequence: ");
```

```
    for(i=1;i<=n;i++)
    {
        printf("%d", a);
        next= a+b;
        a=b;
        b=next;
    }
    printf("\n");
    return 0;
}
```

OUTPUT

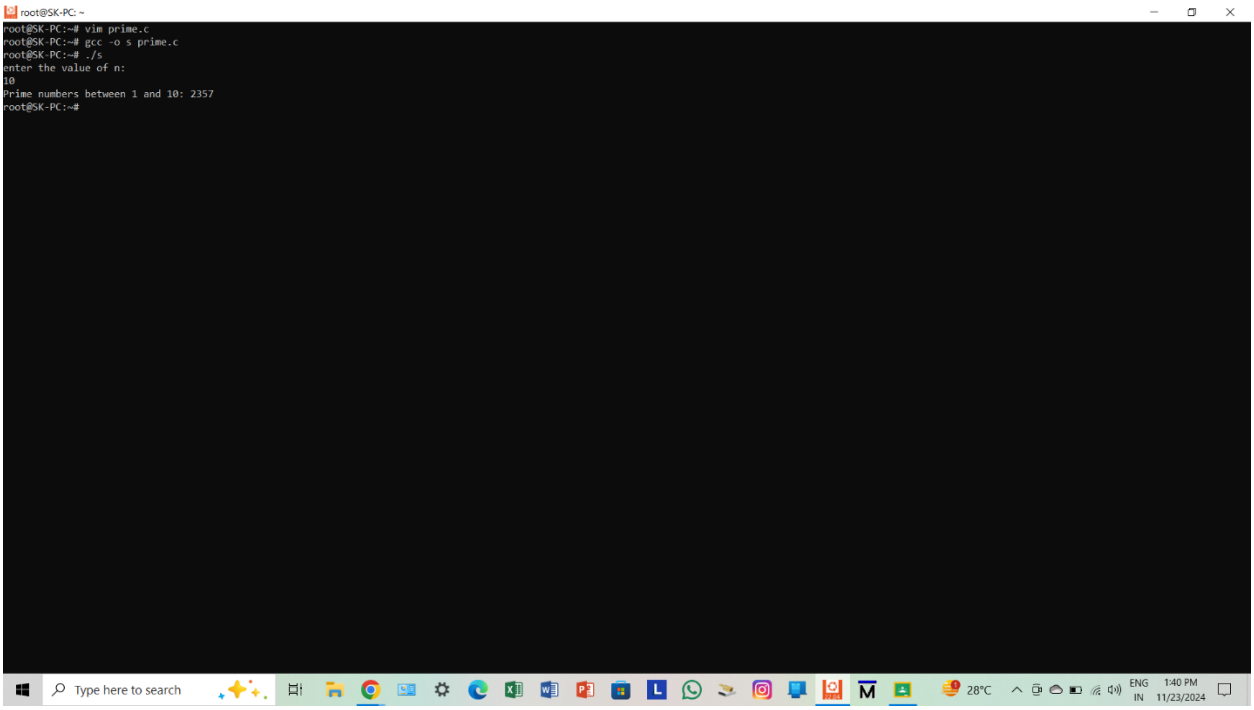


4. Write a C program to generate prime numbers between 1 to n.

```
#include <stdio.h>


int main()
{
	int n,i,j,isPrime;
	printf("enter the value of n: ");
	scanf("%d", &n);
	printf("Prime numbers between 1 and %d: ", n);
	for(i=2;i<=n;i++)
	{
		isPrime=1;
		for(j=2;j*j<=i;j++)
		{
			if(i%j==0)
			{
				isPrime=0;
				break;
			}
		}
```

```
        if(isPrime)
            printf("%d", i);
    }
    printf("\n");
    return 0;
}
```

OUTPUT

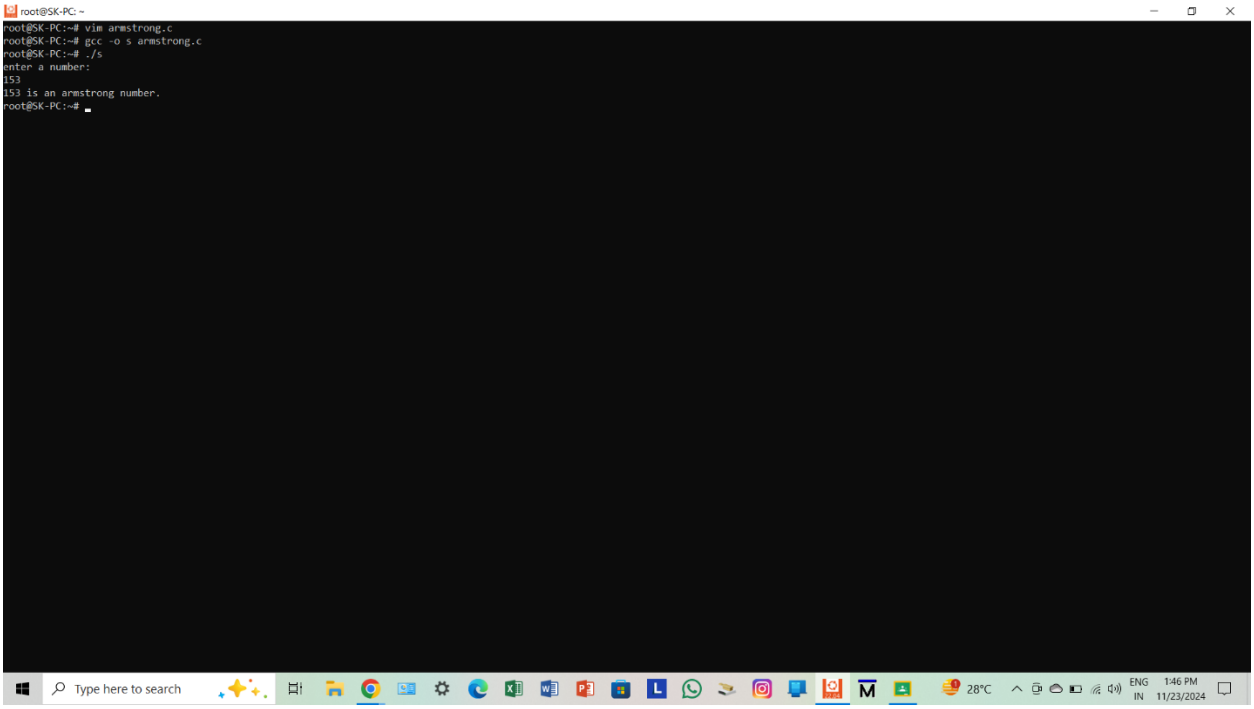


5. Write a C program to check whether a given number is an Armstrong number or not.

```
#include <stdio.h>


int main()
{
    int n, original,r,sum=0;
    printf("enter a number: ");
    scanf("%d", &n);
    original=n;
    while(n>0)
    {
        r=n%10;
        sum=sum+r*r*r;
        n=n/10;
    }
    if(sum==original)
        printf("%d is an armstrong number.\n", original);
    else
        printf("%d is not an armstrong number.\n", original);
```

```
    return 0;
}
```

OUTPUT

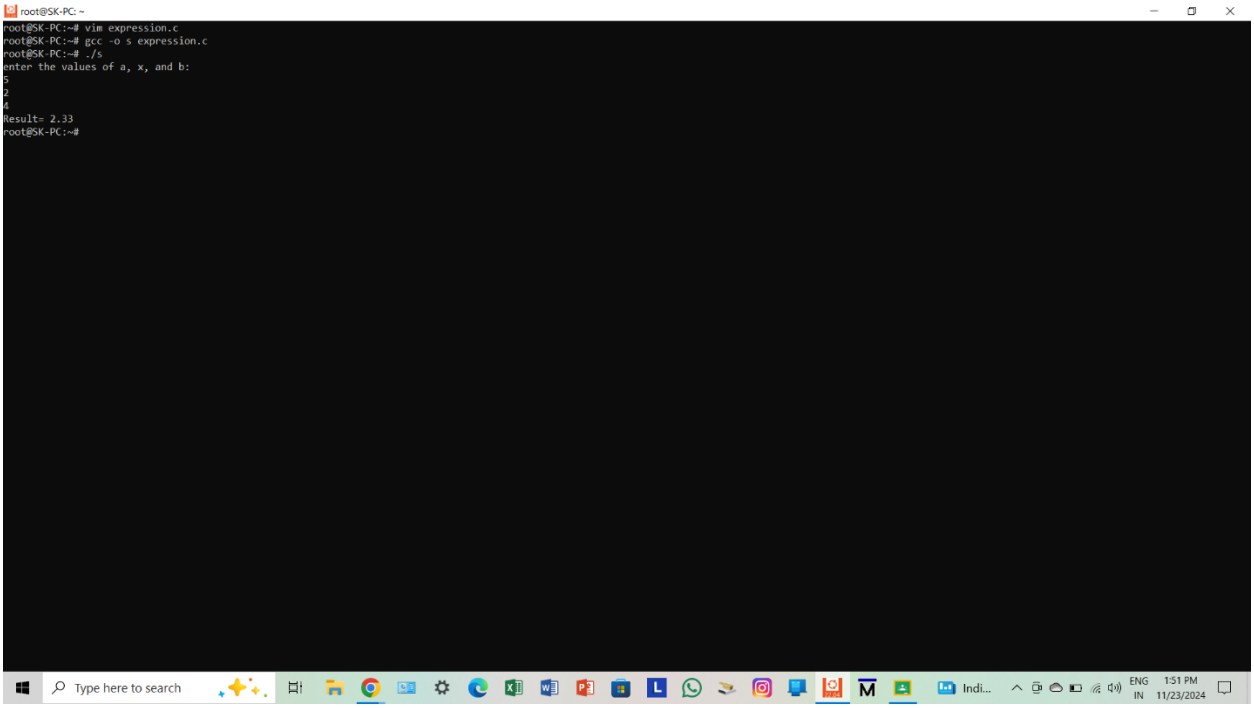


6. Write a C program to evaluate the algebraic expression (ax+b)/(ax-b).

```
#include <stdio.h>

int main()
{
    int a,x,b;
    float r;
```

```
    printf("enter the values of a, x, and b: ");
    scanf("%d %d %d", &a, &x, &b);
    if(a*x-b!=0)
    {
        r= (float)(a*x+b)/(a*x-b);
        printf("Result= %.2f\n", r);
    }
    else
    {
        printf("Division by zero not allowed.\n");
    }
    return 0;
}
```

OUTPUT

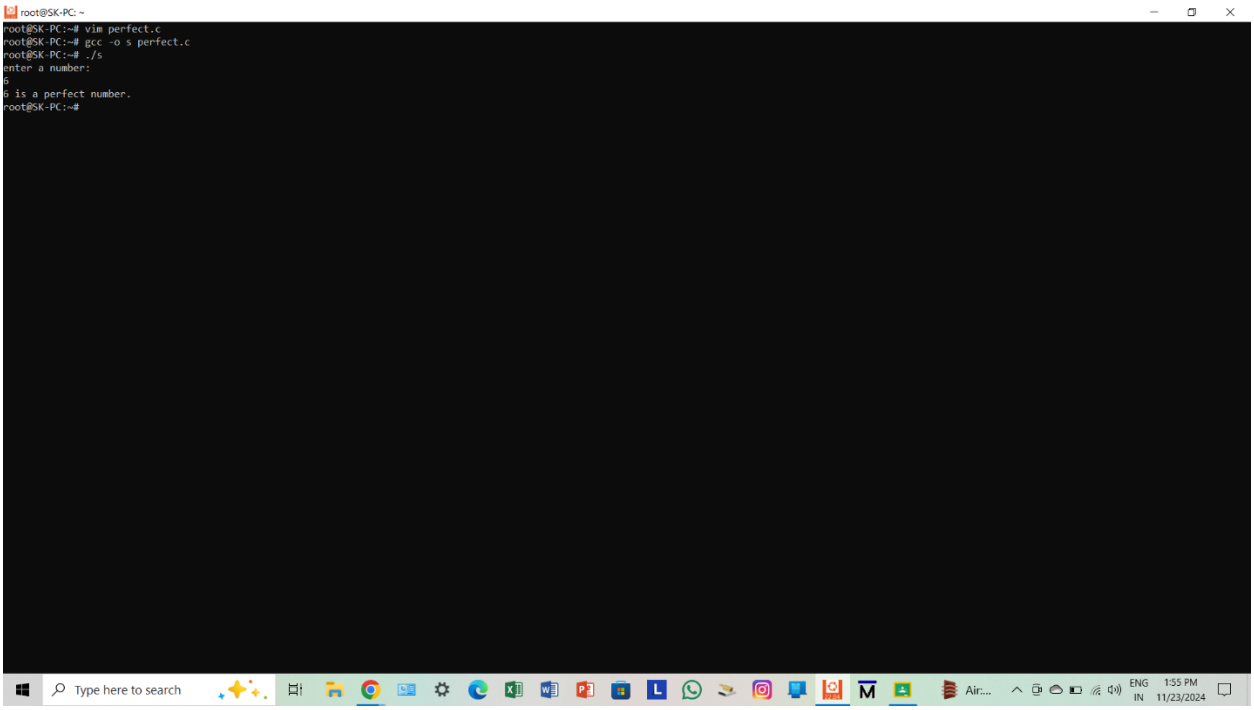


7. Write a C program to check if the given number is a perfect number.

```
#include <stdio.h>


int main()
{
    int n,i,sum=0;
    printf("enter a number: ");
    scanf("%d", &n);
    for(i=1;i<n;i++)
    {
        if(n%i==0)
```

```
            sum=sum+i;
        }
        if(sum==n)
            printf("%d is a perfect number.\n", n);
        else
            printf("%d is not a perfect number.\n", n);
        return 0;
}
```

OUTPUT

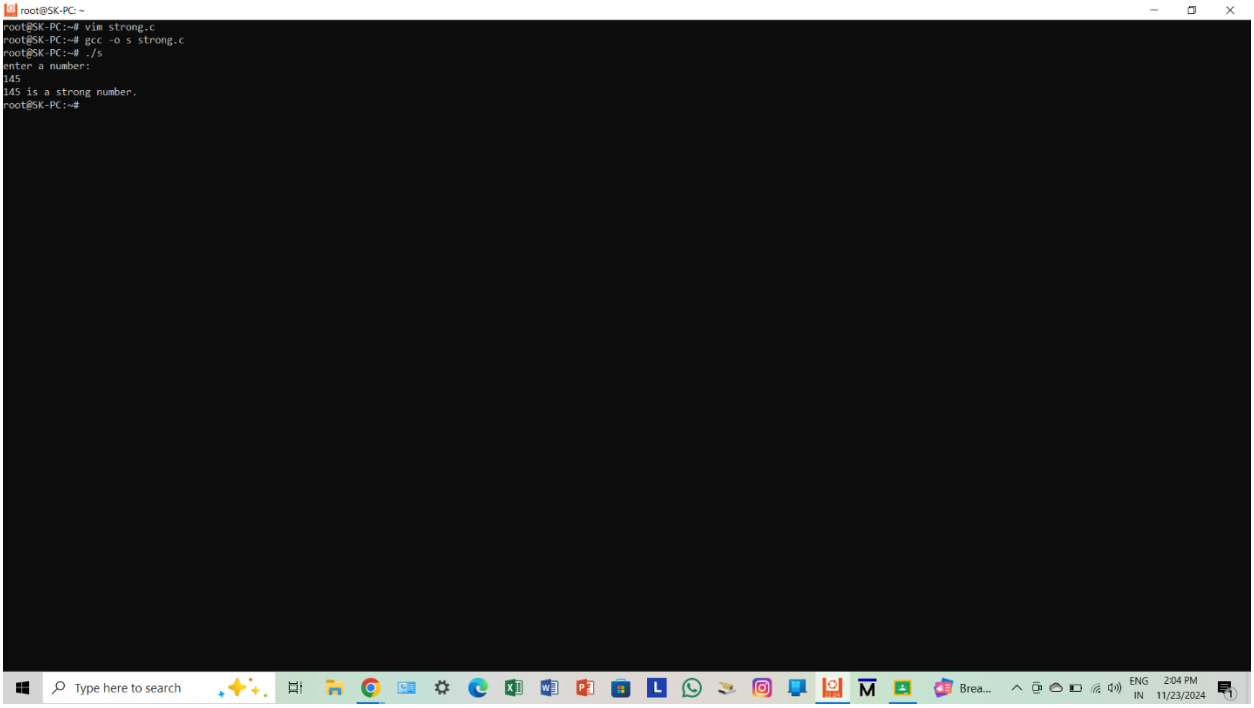


8. Write a C program to check if a given number is a strong number.

```
#include <stdio.h>


int main()
{
    int n, i, original, d, fact, sum=0;
    printf("enter a number: ");
    scanf("%d", &n);
    original=n;
    while(n>0)
    {
        d=n%10;
        fact=1;
        for(i=1;i<=d;i++)
        {
            fact=fact*i;
        }
        sum=sum+fact;
        n=n/10;
    }
```

```
    if(sum==original)
        printf("%d is a strong number.\n", original);
    else
        printf("%d is not a strong number.\n", original);
    return 0;
}
```

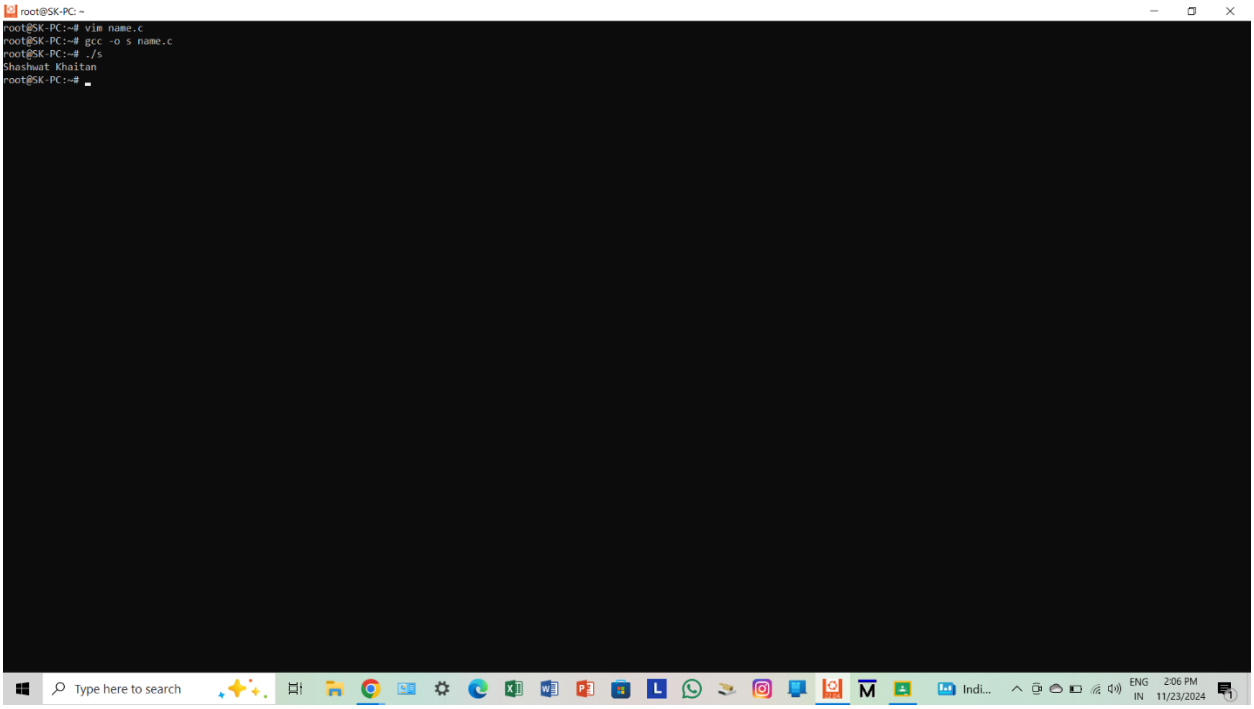
OUTPUT



9. Write a program to print your name without using any semicolons in the program.

```
#include <stdio.h>


int main()

{

    if(printf("Shashwat Khaitan\n")){}

    return 0;

}
```

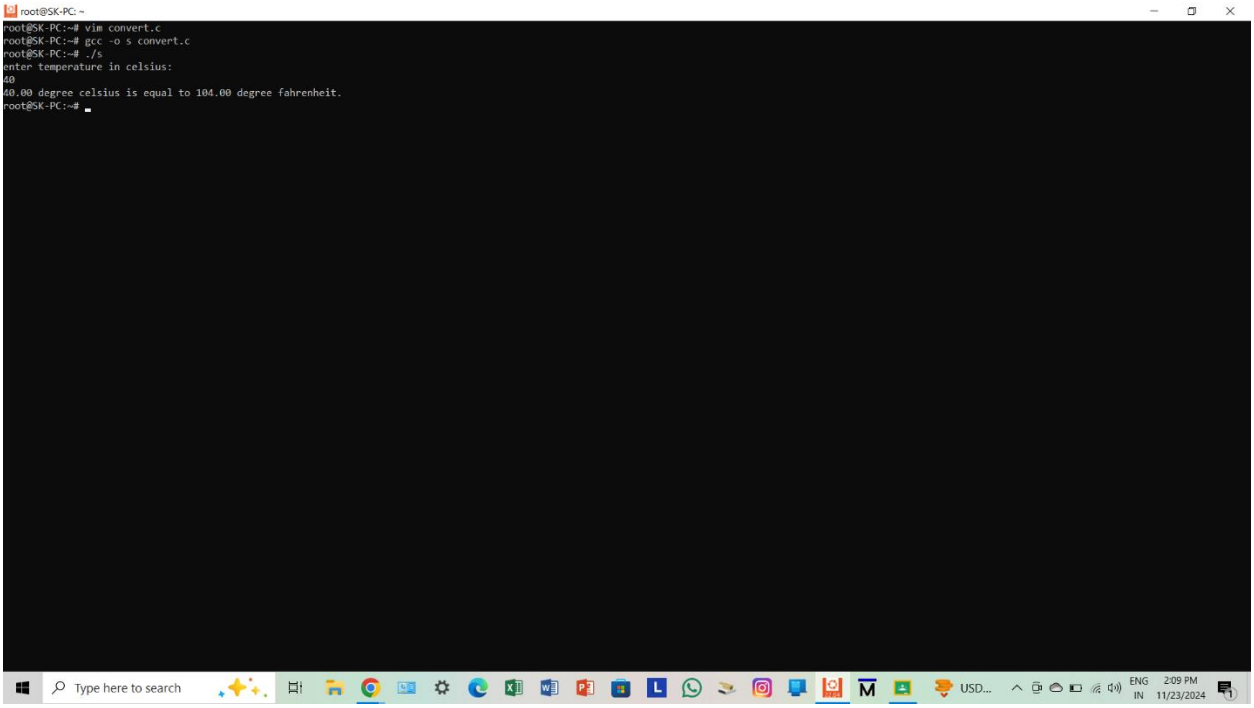
OUTPUT



10. Write a program to convert temperatures in Celsius to Fahrenheit and vice-versa.

```
#include <stdio.h>

int main()

{

    float c,f;

    printf("enter temperature in celsius:");

    scanf("%f", &c);

    f= (c* 9/5) + 32;

    printf("%.2f degree celsius is equal to %.2f degree fahrenheit. \n", c,f);


    return 0;

}
```

OUTPUT

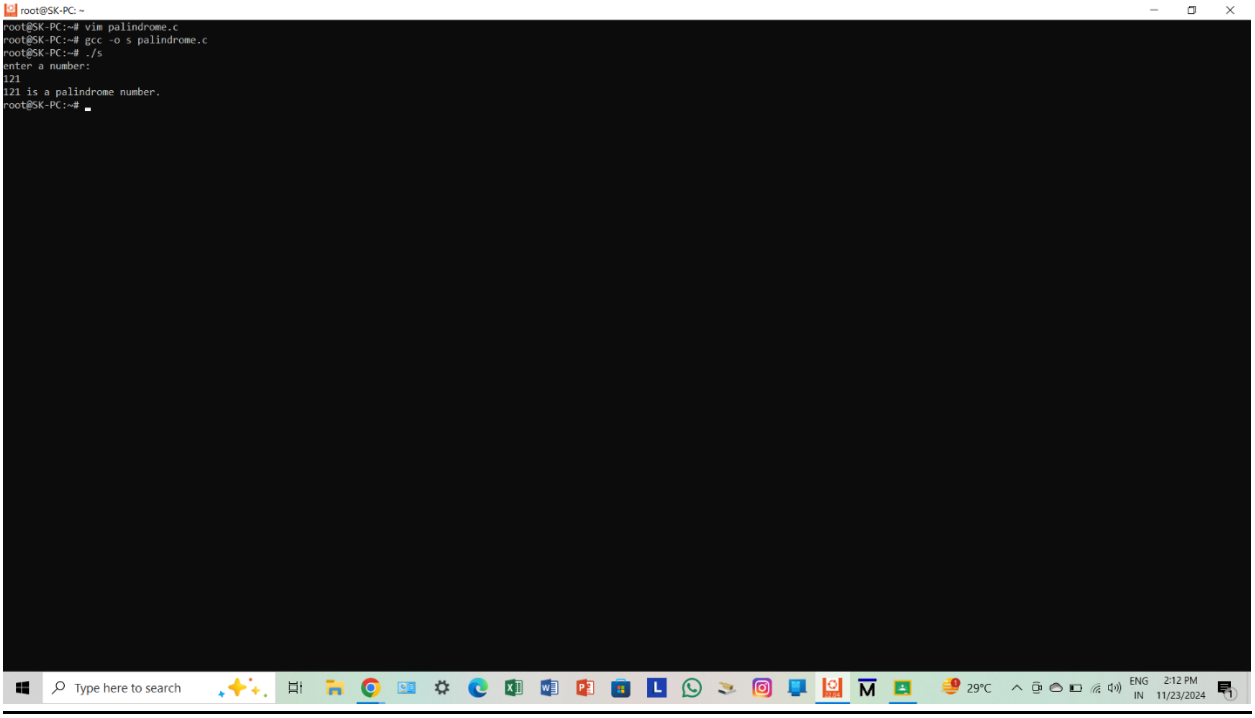


11. Write a C program to check whether a number is a palindrome or not.

```
#include <stdio.h>


int main()

{

    int n,rev=0, original, d;

    printf("enter a number: ");

    scanf("%d", &n);

    original=n;

    while(n>0)

    {
```

```
        d=n%10;
        rev=rev*10+d;
        n=n/10;
    }
    if(rev==original)
        printf("%d is a palindrome number.\n", original);
    else
        printf("%d is not a palindrome number.\n", original);
    return 0;
}
```

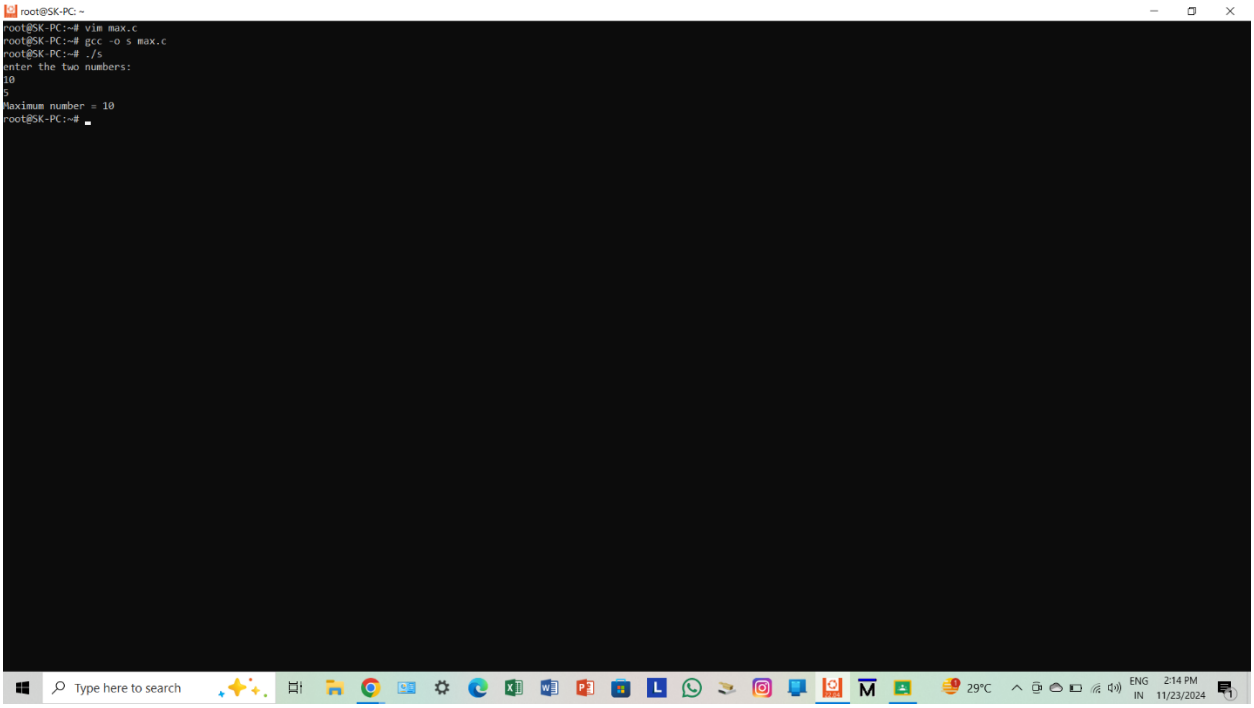
OUTPUT



12. Write a C program to find the maximum between two numbers.

```
#include <stdio.h>


int main()
{
    int a,b;
    printf("enter the two numbers: ");
    scanf("%d %d", &a, &b);
    if(a>b)
        printf("Maximum number = %d\n", a);
    else
        printf("Maximum number = %d\n", b);
    return 0;
}
```

OUTPUT

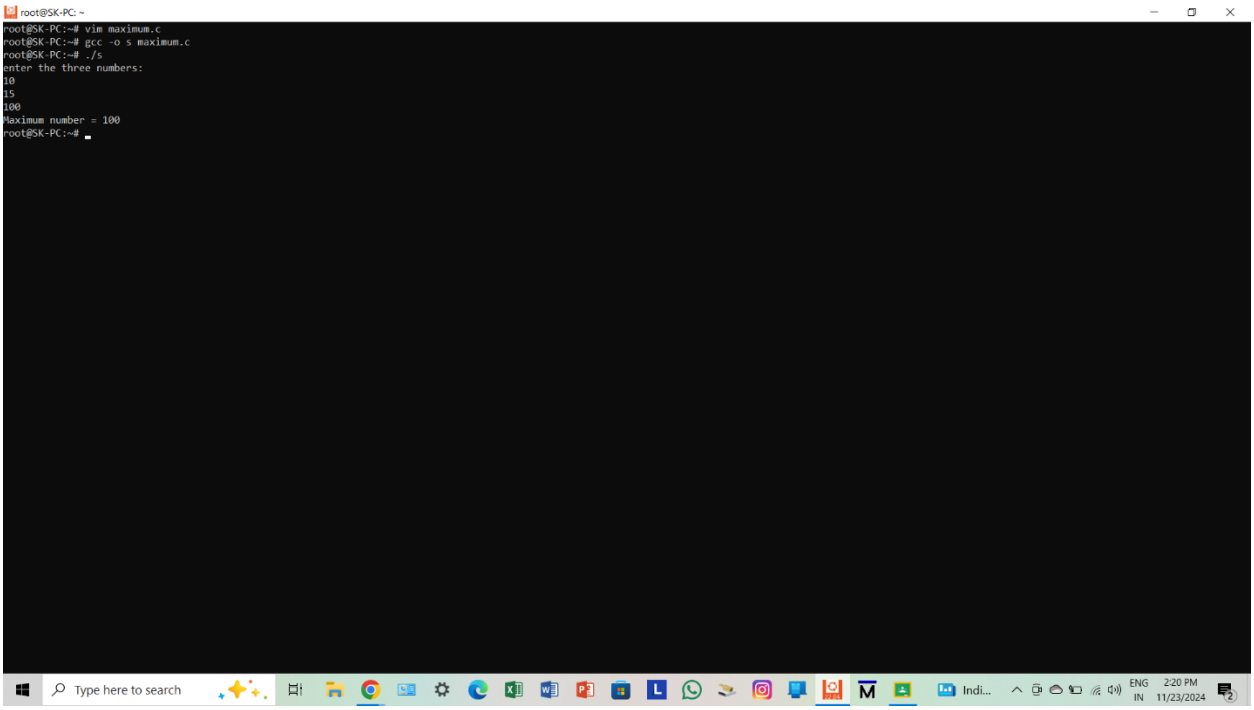


13. Write a C program to find the maximum between three numbers.

```
#include <stdio.h>


int main()
{
    int a,b,c,max;
    printf("enter the three numbers: ");
    scanf("%d %d %d", &a, &b, &c);
    max=a;
    if(b>max)
        max=b;
```

```
    if(c>max)
        max=c;
    printf("Maximum number = %d\n", max);
    return 0;
}
```

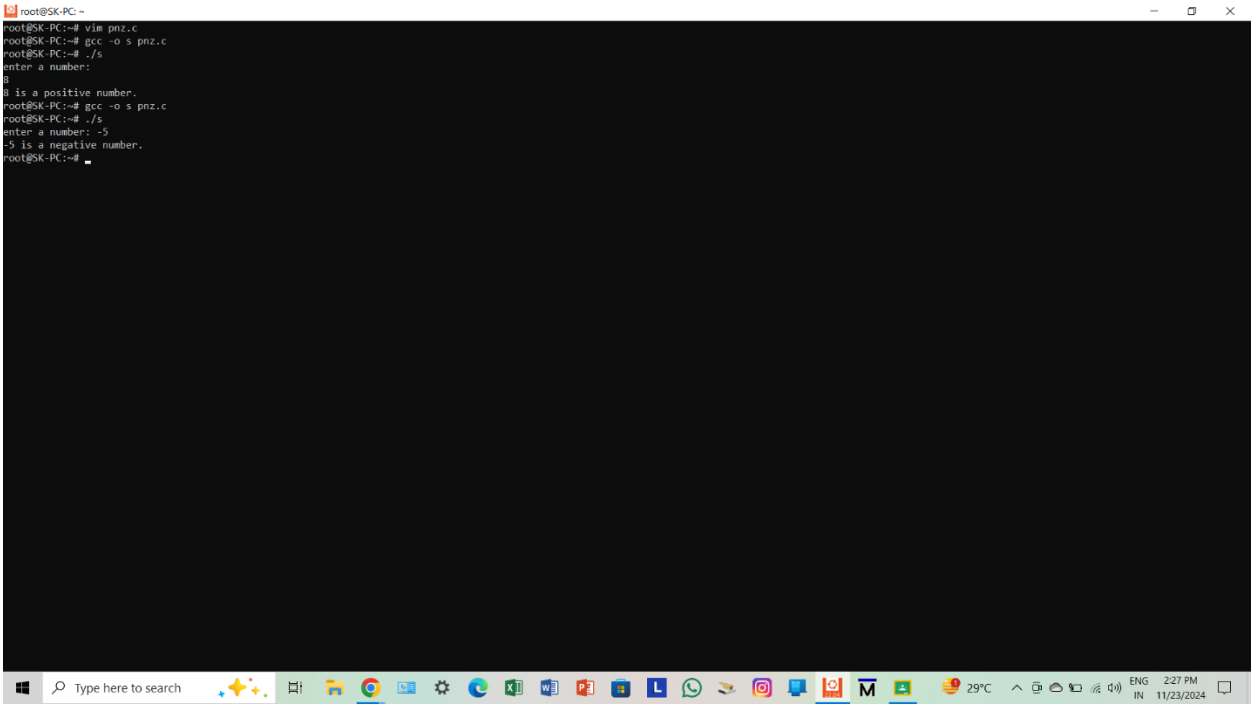
OUTPUT



14. Write a C program to check whether a number is negative, positive, or zero.

```
#include <stdio.h>


int main()
{
    int n;
    printf("enter a number: ");
    scanf("%d", &n);
    if(n>0)
        printf("%d is a positive number.\n", n);
    else if(n<0)
        printf("%d is a negative number.\n", n);
    else
        printf("The number is zero.\n");
    return 0;
}
```

OUTPUT

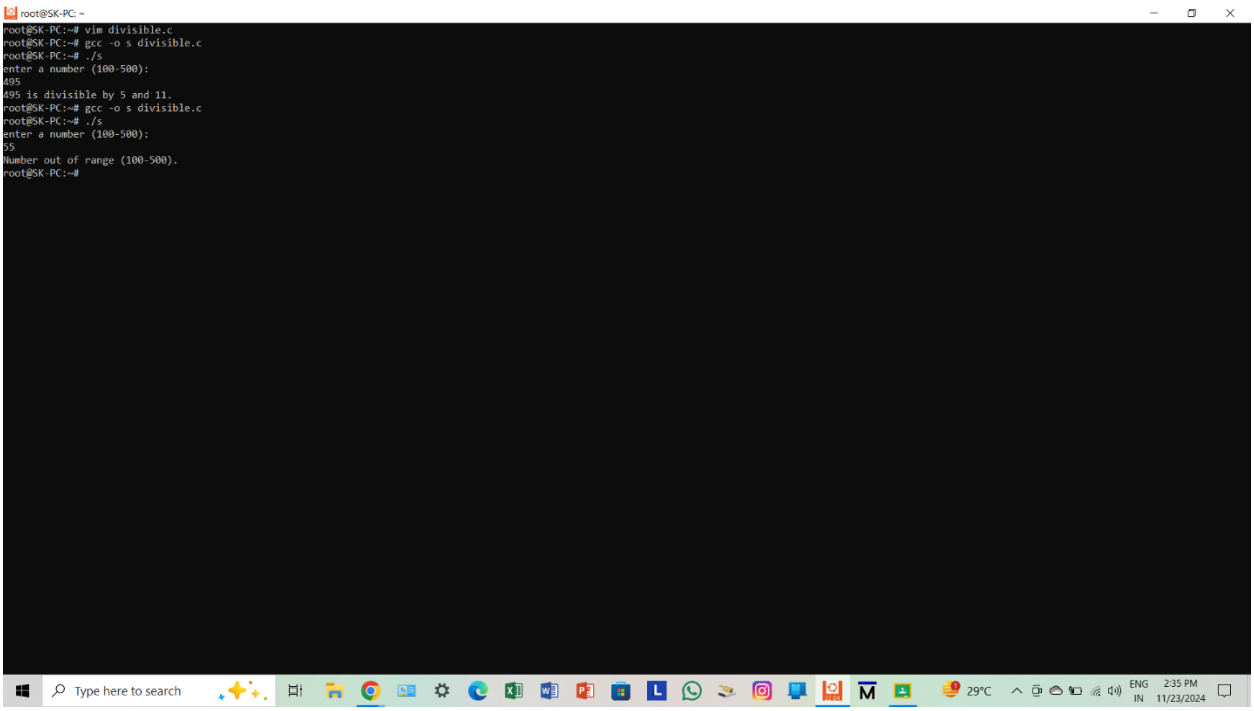


15. Write a C program to check whether a number is divisible by 5 and 11 or not within the range of 100 to 500.

```
#include <stdio.h>


int main()

{

    int n;

    printf("enter a number (100-500): ");

    scanf("%d", &n);

    if(n>=100 && n<=500)

    {
```

```
        if(n%5==0 && n%11==0)
            printf("%d is divisible by 5 and 11.\n", n);
        else
            printf("%d is not divisible by 5 and 11.\n", n);
    }
    else
    {
        printf("Number out of range (100-500).\n");
    }
    return 0;
}
```

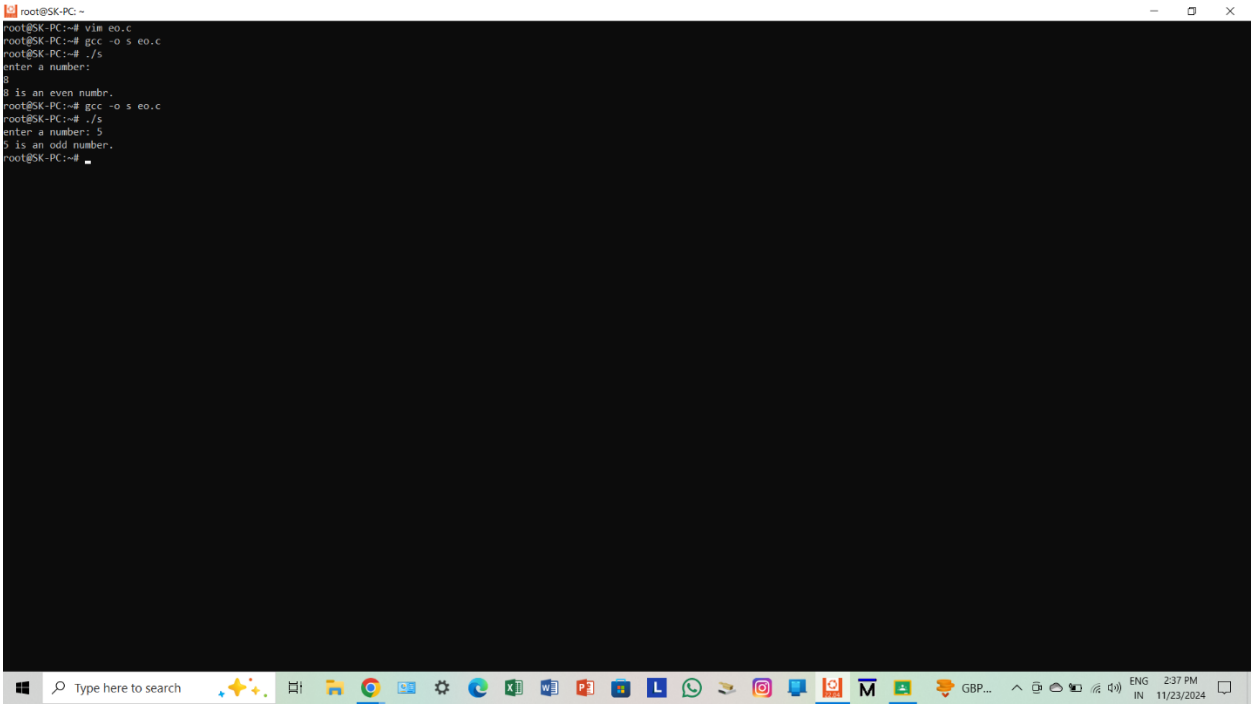
OUTPUT



16. Write a C program to check whether a number is even or odd.

```
#include <stdio.h>


int main()
{
    int n;
    printf("enter a number: ");
    scanf("%d", &n);
    if(n%2==0)
        printf("%d is an even numbr.\n", n);
    else
        printf("%d is an odd number.\n", n);
    return 0;
}
```

OUTPUT

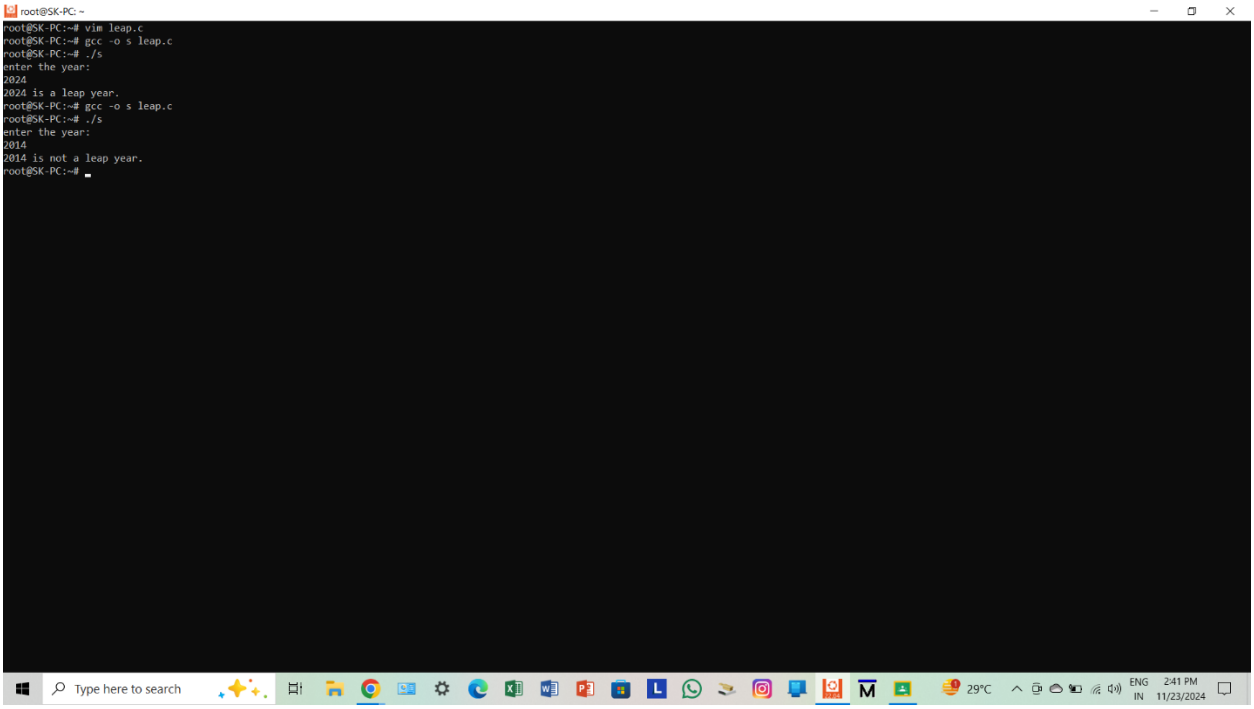


17. Write a C program to check whether a year is a leap year or not.

```
#include <stdio.h>


int main()
{
    int y;
    printf("enter the year: ");
    scanf("%d", &y);
    if((y%4==0 && y%100!=0) || (y%400==0))
        printf("%d is a leap year.\n", y);
    else
```

```
        printf("%d is not a leap year.\n", y);

    return 0;

}
```

OUTPUT

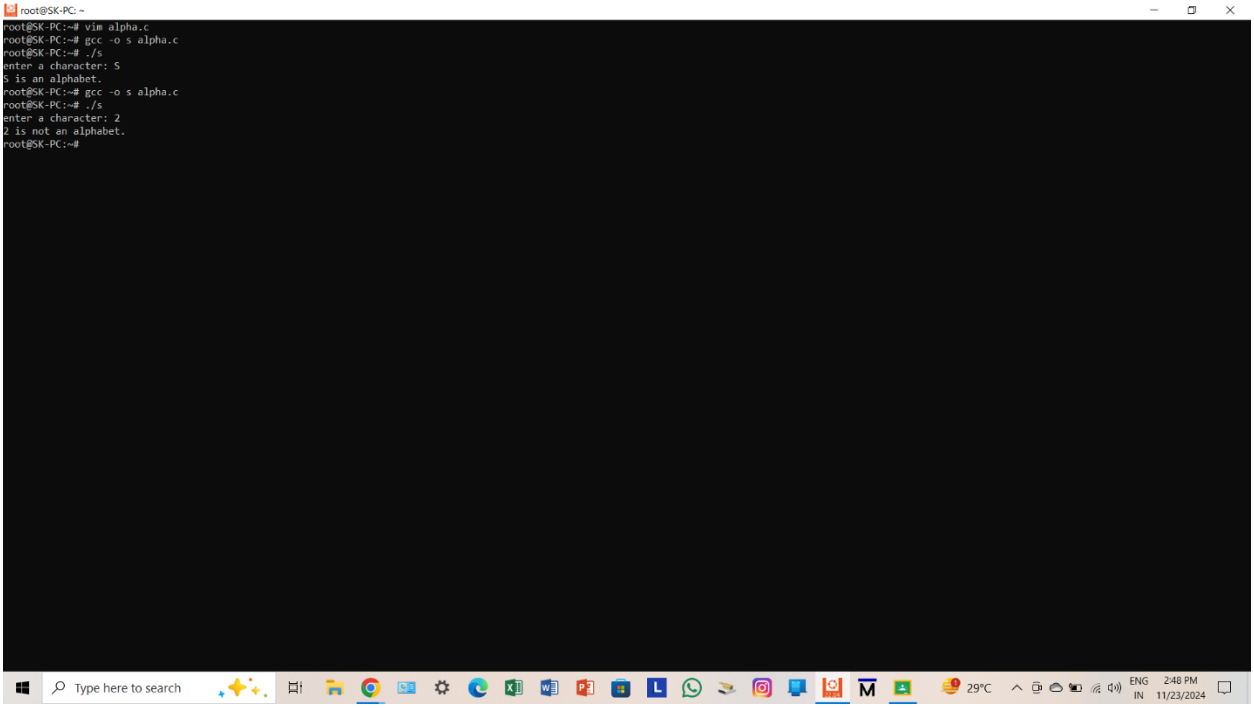


18. Write a C program to check whether a character is alphabet or not.

```
#include <stdio.h>


int main()

{

    char chr;
```

```
    printf("enter a character: ");
    scanf("%c", &chr);
    if((chr>= 'A' && chr<= 'Z') || (chr>= 'a' && chr<= 'z'))
        printf("%c is an alphabet.\n", chr);
    else
        printf("%c is not an alphabet.\n", chr);
    return 0;
}
```

OUTPUT

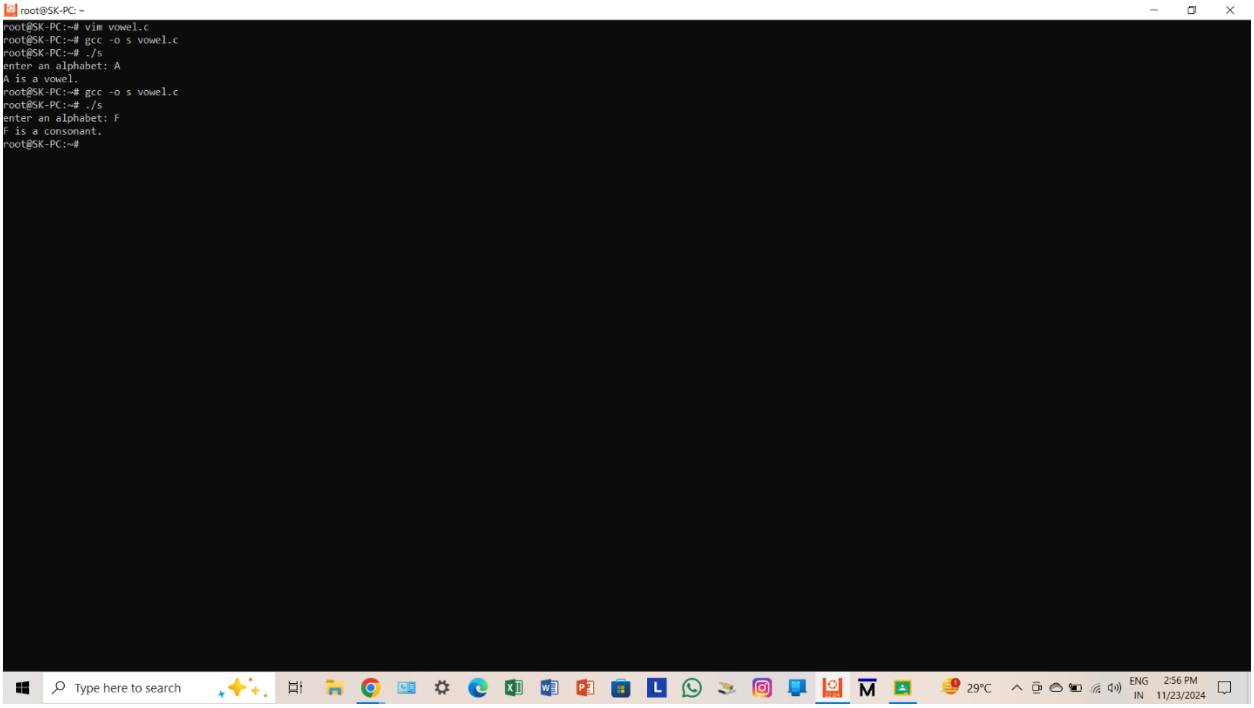


19. Write a C program to input any alphabet and check whether it is a vowel or consonant.

```
#include <stdio.h>


int main()

{

    char ch;

    printf("enter an alphabet: ");

    scanf("%c", &ch);

    if((ch >= 'A' && ch <= 'Z') || (ch >= 'a' && ch <= 'z'))

    {

        if(ch== 'A' || ch== 'E' || ch== 'I' || ch== 'O' || ch== 'U' || ch== 'a' || ch==
'e' || ch== 'i' || ch== 'o' || ch== 'u')

            printf("%c is a vowel.\n", ch);

        else

            printf("%c is a consonant.\n", ch);

    }

    else

    {

        printf("%c is not an alphabet.\n", ch);

    }
```

```
    return 0;
}
```

OUTPUT



20. Write a C program to input any character and check whether it is an alphabet, digit, or special character.

```
#include <stdio.h>


int main()
{
    char c;
    printf("enter a character: ");
```

```
    scanf("%c", &c);
    if((c >= 'A' && c <= 'Z') || (c>= 'a' && c <= 'z'))
        printf("%c is an alphabet.\n", c);
    else if(c >= '0' && c <= '9')
        printf("%c is a digit.\n", c);
    else
        printf("%c is a special character.\n", c);
    return 0;
}
```

OUTPUT