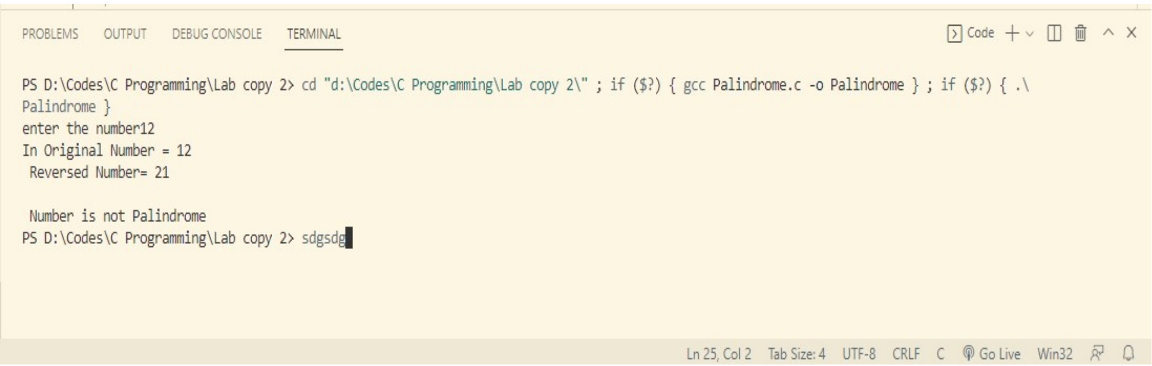
1. Writer a C program to check weather a number is palindrome or not:-

Code:-

```
#include<stdio.h>
int main()
{
        int num, rem, reverse=0, original;
        printf("enter the number");
        scanf("%d",&num);
        printf("In Original Number = %d", num);
        original=num;
        while(num!=0)
        {
                rem = num%10;
                reverse=10*reverse + rem;
                num = num/10;
        }

        printf("\n Reversed Number= %d",reverse);
        if(original==reverse)
        {
                printf("\n\n Number is Palindrome");
        }
        else
        {
                printf("\n\n Number is not Palindrome");
        }
}
```

Output:-



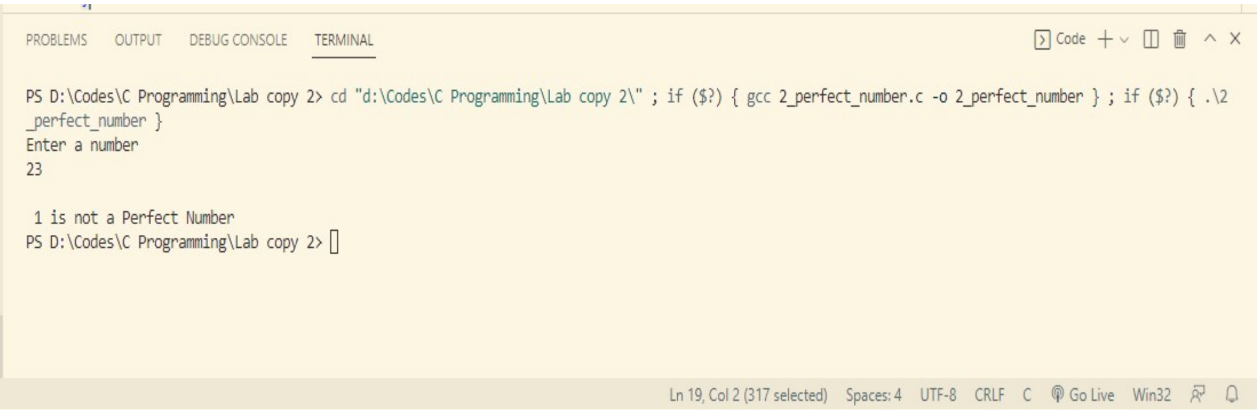
```
PS D:\Codes\C Programming\Lab copy 2> cd "d:\Codes\C Programming\Lab copy 2\" ; if ($?) { gcc Palindrome.c -o Palindrome } ; if ($?) { .\
Palindrome }
enter the number12
In Original Number = 12
 Reversed Number= 21

 Number is not Palindrome
PS D:\Codes\C Programming\Lab copy 2> sdgsdg
```

2. Write a C program to find a number weather perfect number or not:-

Code:-

```
#include<stdio.h>
void main()
{
        int num, rem, sum = 0,i;
        printf("Enter a number\n");
        scanf("%d", &num);
        for(i=1; i < num; i++)
        {
        rem = num%i;
        if (rem==0)
        {
                sum = sum+i;
        }
        }
        if (sum == num)
                printf("%d is a Perfect Number");
        else
                printf("\n %d is not a Perfect Number");
}
```

Output:-



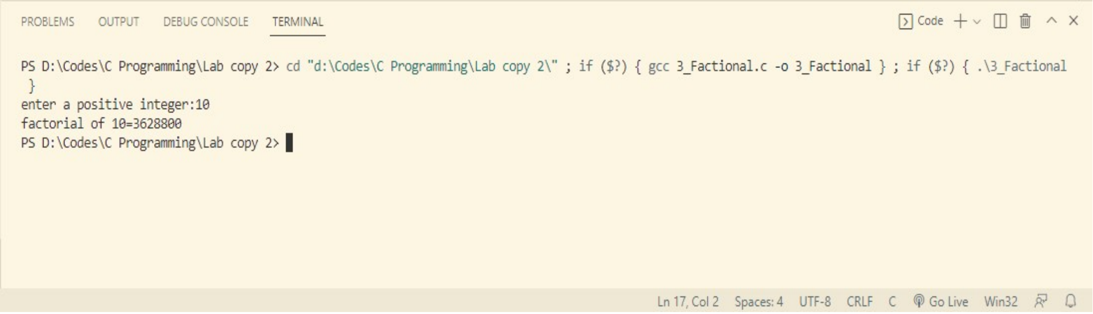
```
PS D:\Codes\C Programming\Lab copy 2> cd "d:\Codes\C Programming\Lab copy 2\" ; if ($?) { gcc 2_perfect_number.c -o 2_perfect_number } ; if ($?) { .\2
_perfect_number }
Enter a number
23

 1 is not a Perfect Number
PS D:\Codes\C Programming\Lab copy 2> 
```

3. Write a program to calculate the factorial of number using recursion:-

Code:-

```c
#include<stdio.h>
long int multiplynumbers(int n);
int main()
{
    int n;
    printf("enter a positive integer:");
    scanf("%d",&n);
    printf("factorial of %d=%d",n,multiplynumbers(n));
    return 0;
}
long int multiplynumbers(int n)
{
    if(n>=1)
        return n*multiplynumbers(n-1);
    else
        return 1;
}
```

Output:-



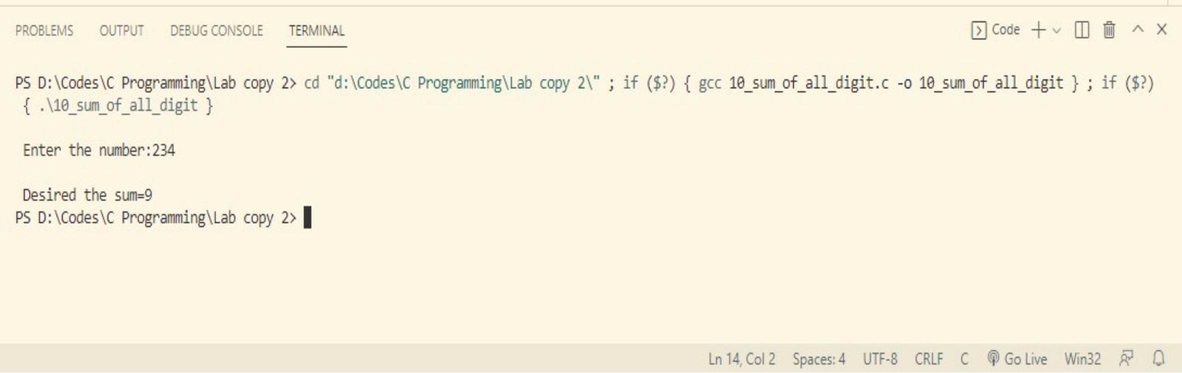
```
PS D:\Codes\C Programming\Lab copy 2> cd "d:\Codes\C Programming\Lab copy 2\" ; if ($?) { gcc 3_Factional.c -o 3_Factional } ; if ($?) { .\3_Factional
 }
enter a positive integer:10
factorial of 10=3628800
PS D:\Codes\C Programming\Lab copy 2>
```

4. Write a C program to the sum of all the digits of a number:-

Code:-

```
#include<stdio.h>
int main(void)
{
        int number,sum=0,rem;
        printf("\n Enter the number:");
        scanf("%d",&number);
        while(number>0)
        {
                rem=number%10;
                sum=sum+rem;
                number=number/10;
        }
                printf("\n Desired the sum=%d",sum);
}
```

Output:-



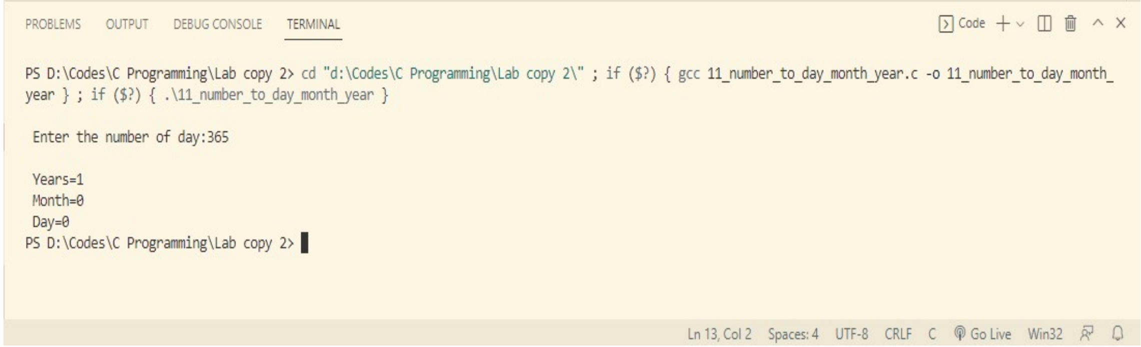
```
PS D:\Codes\C Programming\Lab copy 2> cd "d:\Codes\C Programming\Lab copy 2\" ; if ($?) { gcc 10_sum_of_all_digit.c -o 10_sum_of_all_digit } ; if ($?)
 { .\10_sum_of_all_digit }

 Enter the number:234

 Desired the sum=9
PS D:\Codes\C Programming\Lab copy 2> 
```

5. Write a C program to convert number of days to Year, Month and Days:-

Code:-

```
#include<stdio.h>
int main(void)
{
		int num,year,mon,day;
		printf("\n Enter the number of day:");
		scanf("%d",&num);
		year=num/365;
		mon=(num-year*365)/30;
		day=(num-year*365-mon*30);
		printf("\n Years=%d",year);
		printf("\n Month=%d",mon);
		printf("\n Day=%d",day);
}
```

Output:-



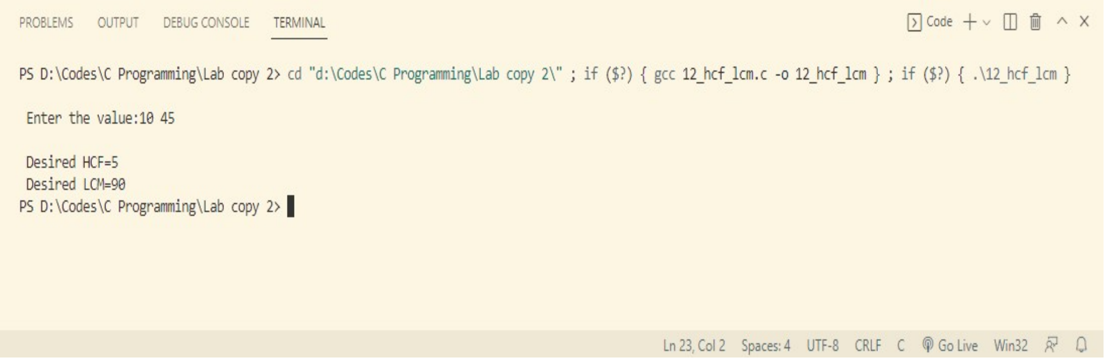
```
PS D:\Codes\C Programming\Lab copy 2> cd "d:\Codes\C Programming\Lab copy 2\" ; if ($?) { gcc 11_number_to_day_month_year.c -o 11_number_to_day_month_
year } ; if ($?) { .\11_number_to_day_month_year }

 Enter the number of day:365

 Years=1
 Month=0
 Day=0
PS D:\Codes\C Programming\Lab copy 2> ▌
```

6. Write a C program to calculate HCF & LCM:-

Code:-

```
#include<stdio.h>
int main(void)
{
                    int x,y,rem,prod;
                    printf("\n Enter the value:");
                    scanf("%d %d",&x,&y);
                    if(x<y)
                    {
                        x=x+y;
                        y=x-y;
                        x=x-y;
                    }
                    prod=x*y;
                    rem=x%y;
                    while(rem!=0)
                    {
                        x=y;
                        y=rem;
                        rem=x%y;
                    }
                    printf("\n Desired HCF=%d",y);
                    printf("\n Desired LCM=%d",prod/y);
}
```

Output:-



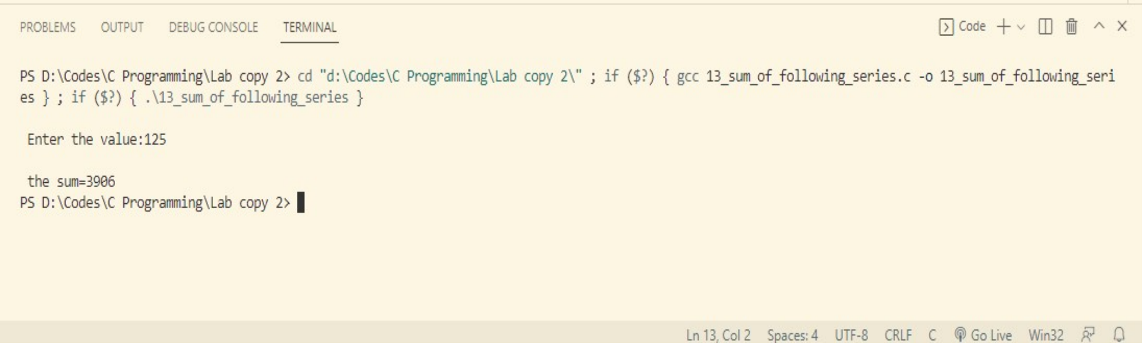
```
PS D:\Codes\C Programming\Lab copy 2> cd "d:\Codes\C Programming\Lab copy 2\" ; if ($?) { gcc 12_hcf_lcm.c -o 12_hcf_lcm } ; if ($?) { .\12_hcf_lcm }

 Enter the value:10 45

 Desired HCF=5
 Desired LCM=90
PS D:\Codes\C Programming\Lab copy 2> 
```

7. Write a C program to find the sum of the following series:2+4+6+8+……….n terms:-

Code:-

```
#include<stdio.h>
int main(void)
{
        int n,i=2,sum=0;
        printf("\n Enter the value:");
        scanf("%d",&n);
        while(i<=n)
        {
            sum=sum+i;
            i=i+2;
        }
        printf("\n the sum=%d",sum);
}
```

Output:-



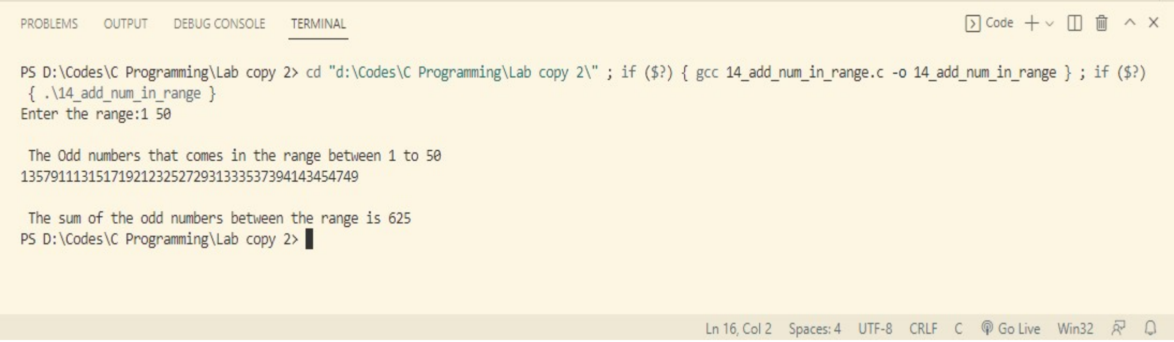
```
PS D:\Codes\C Programming\Lab copy 2> cd "d:\Codes\C Programming\Lab copy 2\" ; if ($?) { gcc 13_sum_of_following_series.c -o 13_sum_of_following_seri
es } ; if ($?) { .\13_sum_of_following_series }

 Enter the value:125

 the sum=3906
PS D:\Codes\C Programming\Lab copy 2> 
```

8. Write a C program to add odd numbers in a given range:-

Code:-

```
#include<stdio.h>
int main()
{
    int a,b,i;
    long int sum=0;
    printf("Enter the range:");
    scanf("%d %d",&a,&b);
    printf("\n The Odd numbers that comes in the range between %d to %d\n",a,b);
    for(i=a;i<=b;i++)
    if(i%2==1)
    {
      sum=sum+i;
      printf("%d",i);
    }
    printf("\n\n The sum of the odd numbers between the range is %d",sum);
}
```

Output:-



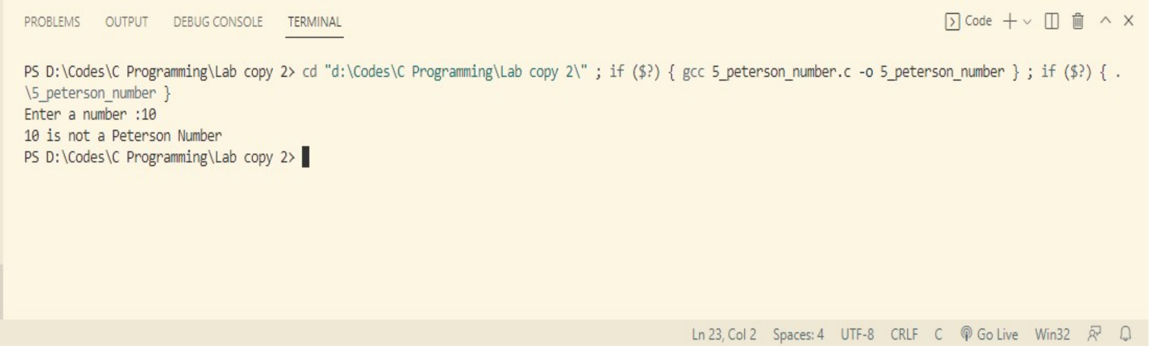
```
PS D:\Codes\C Programming\Lab copy 2> cd "d:\Codes\C Programming\Lab copy 2\" ; if ($?) { gcc 14_add_num_in_range.c -o 14_add_num_in_range } ; if ($?)
 { .\14_add_num_in_range }
Enter the range:1 50

 The Odd numbers that comes in the range between 1 to 50
135791113151719212325272931333537394143454749

 The sum of the odd numbers between the range is 625
PS D:\Codes\C Programming\Lab copy 2> 
```

9. Write a c programme to perform Peterson number or not:-

Code:-

```
#include<stdio.h>
int main()
{
                                        int num,temp,rem,sum=0,fact=1;
                                        int i;
                                        printf("Enter a number :");
                                        scanf("%d",&num);
                                        temp=num;
                                        while(temp!=0)
                                        {
                                              rem=temp%10;
                                              for(i=1;i<=rem;i++)
                                              fact*=i;
                                              sum+=fact;
                                              fact=1;
                                              temp/=10;
                                        }
                                        if(num==sum)
                                        printf("%d is a Peterson Number",num);
                                        else
                                        printf("%d is not a Peterson Number",num);
                                        return 0;
}
```

Output:-



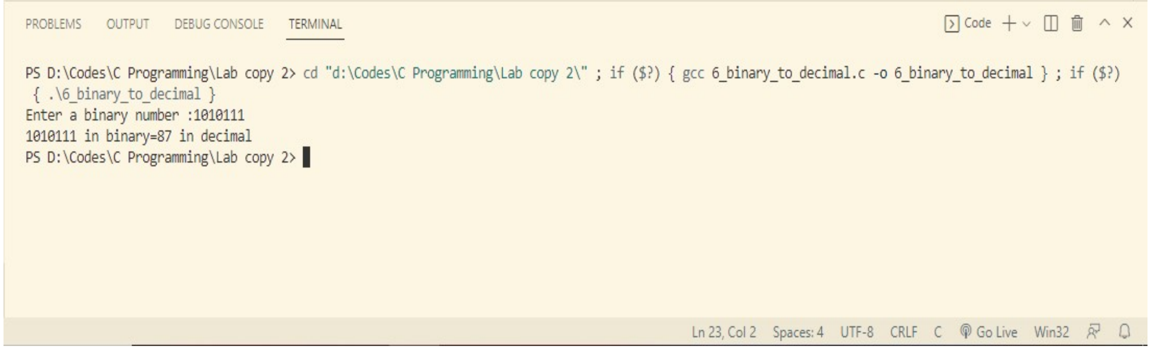
```
PS D:\Codes\C Programming\Lab copy 2> cd "d:\Codes\C Programming\Lab copy 2\" ; if ($?) { gcc 5_peterson_number.c -o 5_peterson_number } ; if ($?) { .
\5_peterson_number }
Enter a number :10
10 is not a Peterson Number
PS D:\Codes\C Programming\Lab copy 2> 
```

10.Write a program to calculate binary to decimal:-

Code:-

```
#include<stdio.h>
#include<math.h>
int convert(long long);
int main()
{
                                        long long n;
                                        printf("Enter a binary number :");
                                        scanf("%d",&n);
                                        printf("%d in binary=%d in decimal",n,convert(n));
                                        return 0;
}
int convert(long long n)
{
                                        int dec=0,i=0,rem;

                                        while(n!=0)
                                        {
                                              rem=n%10;
                                              n/=10;
                                              dec+=rem*pow(2,i);
                                              ++i;
                                        }
}
```

Output:-



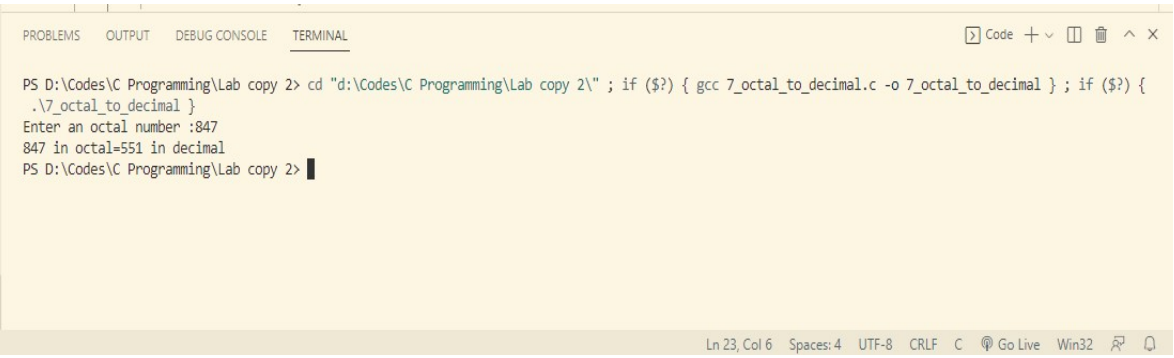
```
PS D:\Codes\C Programming\Lab copy 2> cd "d:\Codes\C Programming\Lab copy 2\" ; if ($?) { gcc 6_binary_to_decimal.c -o 6_binary_to_decimal } ; if ($?)
 { .\6_binary_to_decimal }
Enter a binary number :1010111
1010111 in binary=87 in decimal
PS D:\Codes\C Programming\Lab copy 2> 
```

11.Write a program to convert octal to decimal:-

Code:-

```
#include<stdio.h>
#include<math.h>
long long convertOctalToDecimal(int octalNumber);
int main()
{
                        int octalNumber;
                        printf("Enter an octal number :");
                        scanf("%d",&octalNumber);
                        printf("%d in octal=%lld in
decimal",octalNumber,convertOctalToDecimal(octalNumber));
                        return 0;
}
                        long long convertOctalToDecimal(int octalNumber)
                        {
                            int decimalNumber=0,i=0;
                            while(octalNumber!=0)
                            {
                                decimalNumber+=(octalNumber%10)*pow(8,i);
                                ++i;
                                octalNumber/=10;
                            }
                            i=1;
                            return decimalNumber;
                        }
```

Output:-



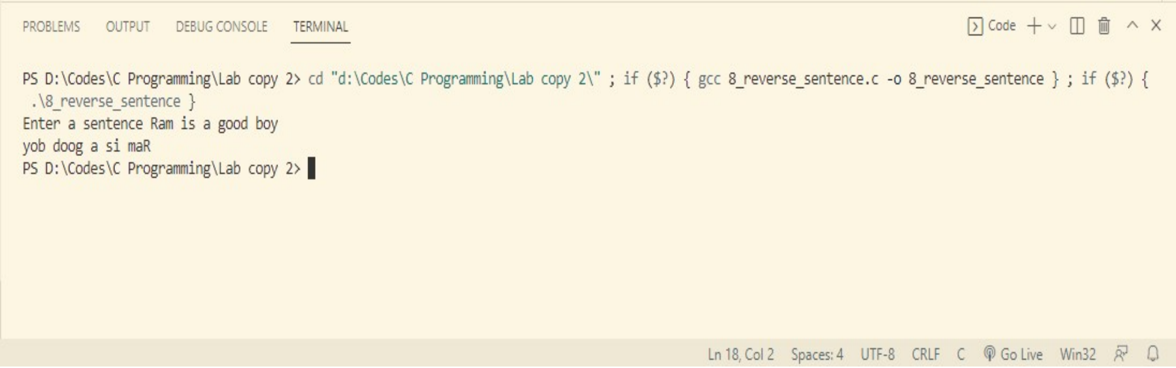
```
PS D:\Codes\C Programming\Lab copy 2> cd "d:\Codes\C Programming\Lab copy 2\" ; if ($?) { gcc 7_octal_to_decimal.c -o 7_octal_to_decimal } ; if ($?) {
 .\7_octal_to_decimal }
Enter an octal number :847
847 in octal=551 in decimal
PS D:\Codes\C Programming\Lab copy 2> 
```

12.Write a c program to reverse a sentence using recursion:-

Code:-

```
#include<stdio.h>
void reverseSentence();
int main()
{
                                        printf("Enter a sentence");
                                        reverseSentence();
                                        return 0;
}
void reverseSentence()
{
                                        char c;
                                        scanf("%c",&c);
                                        if(c!='\n')
                                        {
                                          reverseSentence();
                                          printf("%c",c);
                                        }
}
```

Output:-



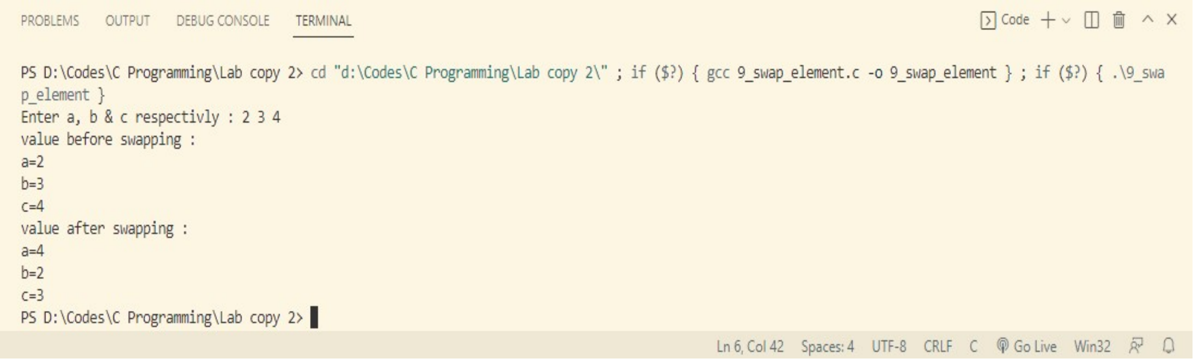
```
PS D:\Codes\C Programming\Lab copy 2> cd "d:\Codes\C Programming\Lab copy 2\" ; if ($?) { gcc 8_reverse_sentence.c -o 8_reverse_sentence } ; if ($?) {
 .\8_reverse_sentence }
Enter a sentence Ram is a good boy
yob doog a si maR
PS D:\Codes\C Programming\Lab copy 2> █
```

13. Write a c program to swap elements using call by reference:-

Code:-

```
#include<stdio.h>
void cyclicswap(int *a,int *b,int *c);
int main()
{
        int a,b,c;
        printf("Enter a, b & c respectivly : ");
        scanf("%d%d%d",&a,&b,&c);
        printf("value before swapping : \n");
        printf("a=%d\nb=%d\nc=%d\n",a,b,c);
        cyclicswap(&a,&b,&c);
        printf("value after swapping :\n");
        printf("a=%d\nb=%d\nc=%d",a,b,c);
        return 0;
}
void cyclicswap(int *n1,int *n2,int *n3)
{
        int temp;
        temp=*n2;
        *n2=*n1;
        *n1=*n3;
        *n3=temp;
}
```

Output:-



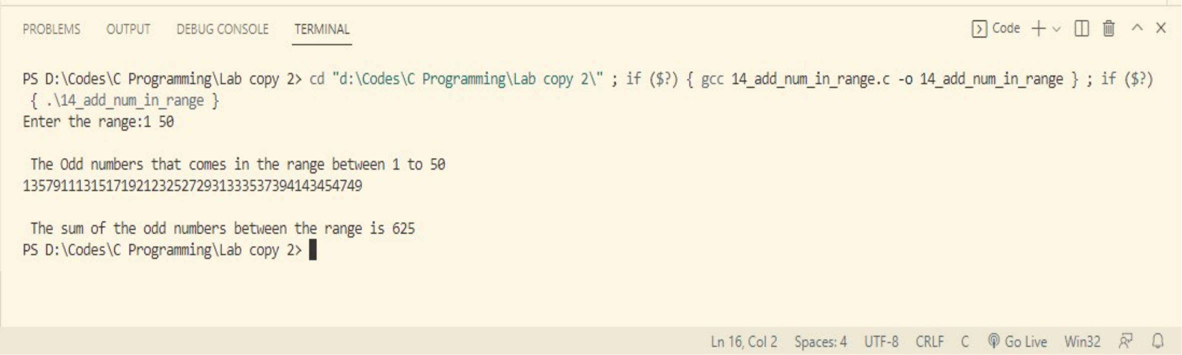
```
PS D:\Codes\C Programming\Lab copy 2> cd "d:\Codes\C Programming\Lab copy 2\" ; if ($?) { gcc 9_swap_element.c -o 9_swap_element } ; if ($?) { .\9_swa
p_element }
Enter a, b & c respectivly : 2 3 4
value before swapping :
a=2
b=3
c=4
value after swapping :
a=4
b=2
c=3
PS D:\Codes\C Programming\Lab copy 2> ▌
```

14.Write a C program to find the number is Armstrong number or not:-

Code:-

```
#include<stdio.h>
int main()
{
   int number, sum=0, lastDigit, temp;
   printf("Enter a number: ");
   scanf("%d", &number);
   temp = number;

   while (temp!=0)
   {
      lastDigit = temp%10;
      sum = sum + (lastDigit * lastDigit * lastDigit);
      temp = temp/10;
   }

   if (sum == number)
   {
      printf("\n The Amstrong number is = %d", number);
   }
   else
      printf("\n %d is not an Amstrong number\n", number);

   return 0;


}
```

Output:-



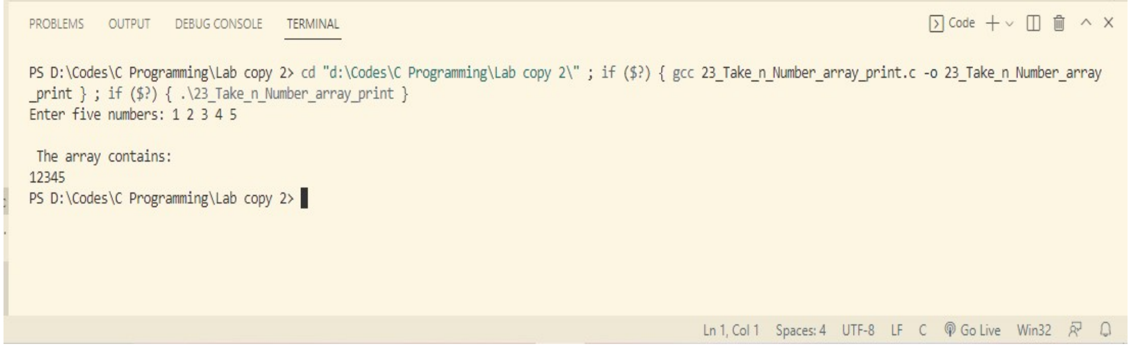
```
PS D:\Codes\C Programming\Lab copy 2> cd "d:\Codes\C Programming\Lab copy 2\" ; if ($?) { gcc 14_add_num_in_range.c -o 14_add_num_in_range } ; if ($?)
 { .\14_add_num_in_range }
Enter the range:1 50

 The Odd numbers that comes in the range between 1 to 50
135791113151719212325272931333537394143454749

 The sum of the odd numbers between the range is 625
PS D:\Codes\C Programming\Lab copy 2> 
```

15.Write a C program to take n numbers from user and store then in an array and print the elements:-

Code:-

```
#include<stdio.h>
int main()
{
   int a[5], i;
   printf("Enter five numbers: ");
   for ( i = 0; i < 5; i++)
   {
      scanf("%d", &a[i]);
   }
   printf("\n The array contains: \n");
   for ( i = 0; i < 5; i++)
   {
      printf("%d", a[i]);
   }

   return 0;


}
```

Output:-



```
PS D:\Codes\C Programming\Lab copy 2> cd "d:\Codes\C Programming\Lab copy 2\" ; if ($?) { gcc 23_Take_n_Number_array_print.c -o 23_Take_n_Number_array
_print } ; if ($?) { .\23_Take_n_Number_array_print }
Enter five numbers: 1 2 3 4 5

 The array contains:
12345
PS D:\Codes\C Programming\Lab copy 2>
```

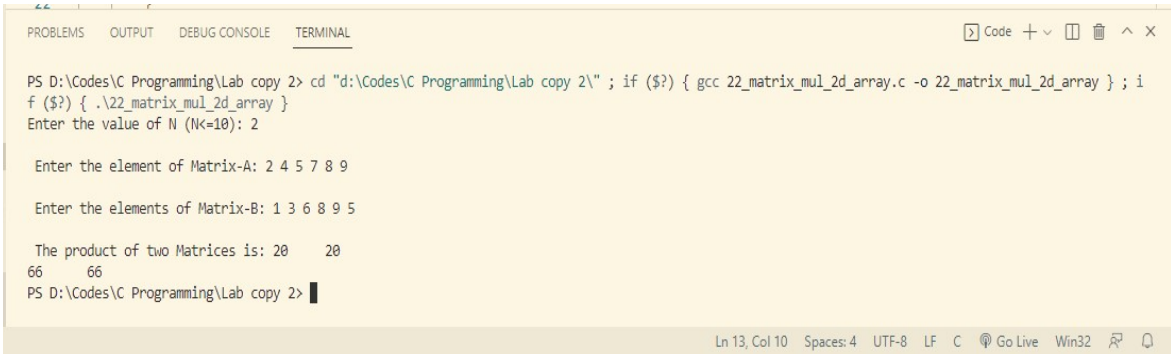
16.Write a C program to perform matrix multiplication operation using 2d array:-

Code:-

```
#include<stdio.h>
int main()
{
  int a[10][10], b[10][10], c[10][10], n, i, j, k;
  printf("Enter the value of N (N<=10): ");
  scanf("%d", &n);
  printf("\n Enter the element of Matrix-A: ");
  for ( i = 0; i < n; i++)
  {
    for ( j = 0; j < n; j++)
    {
      scanf("%d", & a[i][j]);
    }

  }
  printf("\n Enter the elements of Matrix-B: ");
  for ( i = 0; i < n; i++)
  {
    for ( j = 0; j < n; j++)
    {
      scanf("%d", & b[i][j]);
    }

  }
  for ( i = 0; i < n; i++)
  {
    for ( j = 0; j < n; j++)
    {
      c[i][j] = 0;
      for ( k = 0; k < n; k++)
      {
        c[i][j]+=a[i][k]*b[k][i];
      }

    }

  }
  printf("\n The product of two Matrices is: ");
```

```
    for ( i = 0; i < n; i++)
    {
        for ( j = 0; j < n; j++)
        {
            printf("%d\t", c[i][j]);
        }
        printf("\n");
    }




}
```

Output:-



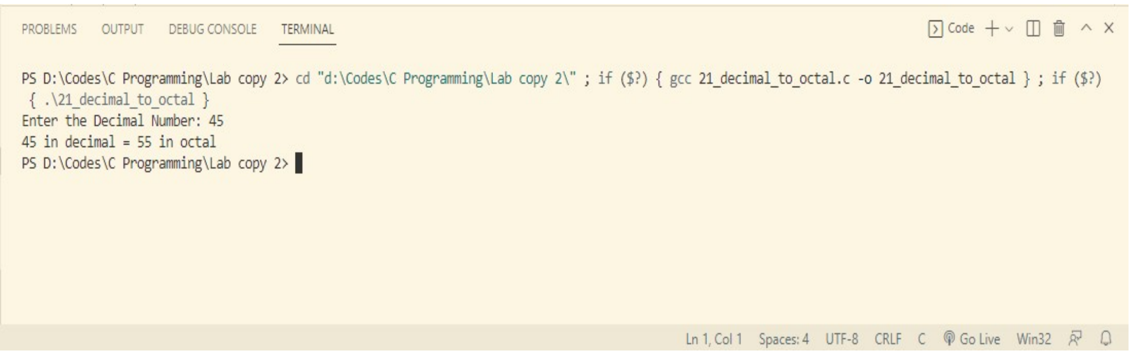
```
PS D:\Codes\C Programming\Lab copy 2> cd "d:\Codes\C Programming\Lab copy 2\" ; if ($?) { gcc 22_matrix_mul_2d_array.c -o 22_matrix_mul_2d_array } ; i
f ($?) { .\22_matrix_mul_2d_array }
Enter the value of N (N<=10): 2

 Enter the element of Matrix-A: 2 4 5 7 8 9

 Enter the elements of Matrix-B: 1 3 6 8 9 5

 The product of two Matrices is: 20     20
66      66
PS D:\Codes\C Programming\Lab copy 2>
```

17.Write a program to convert Decimal to Octal:-

Code:-

```
#include<stdio.h>
#include<math.h>
int convertDecimalToOctal(int decimalNumber);

int main()
{
   int decimalNumber;
   printf("Enter the Decimal Number: ");
   scanf("%d", &decimalNumber);
   printf("%d in decimal = %d in octal",
decimalNumber,convertDecimalToOctal(decimalNumber));
   return 0;
}
   int convertDecimalToOctal(int decimalNumber)
   {
      int octalNumber = 0, i=1;
      while (decimalNumber !=0)
      {
         octalNumber +=(decimalNumber%8)*i;
         decimalNumber /=8;
         i*=10;
      }
      return octalNumber;
   }
```

Output:-



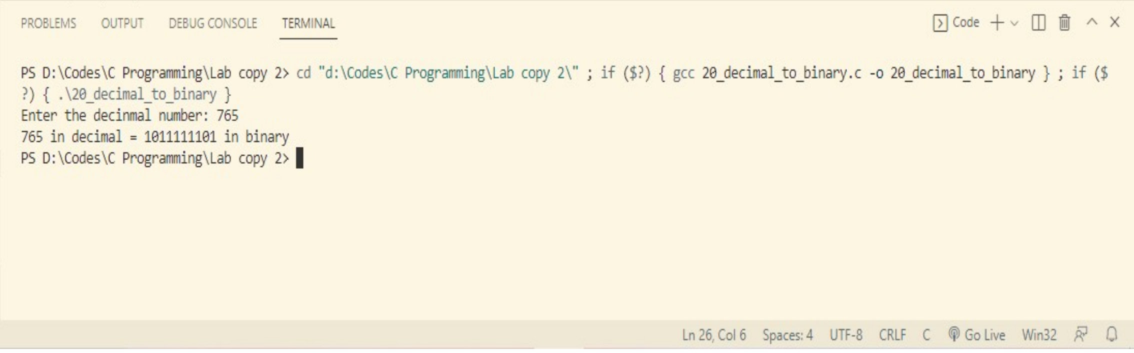
```
PS D:\Codes\C Programming\Lab copy 2> cd "d:\Codes\C Programming\Lab copy 2\" ; if ($?) { gcc 21_decimal_to_octal.c -o 21_decimal_to_octal } ; if ($?)
 { .\21_decimal_to_octal }
Enter the Decimal Number: 45
45 in decimal = 55 in octal
PS D:\Codes\C Programming\Lab copy 2> 
```

18. Write a program to convert Decimal to Binary:-

Code:-

```
#include<stdio.h>
#include<math.h>
long long convert(int);
int main()
{
  int n, bin;
  printf("Enter the decinmal number: ");
  scanf("%d",&n);
  bin = convert(n);
  printf("%d in decimal = %d in binary", n, bin);
  return 0;
}
  long long convert(int n)
  {
    long long bin = 0;
    int rem, i=1;
    while (n!=0)
    {
      rem = n%2;
      n/=2;
      bin+= rem * i;
      i*=10;
    }
    return bin;

  }
```

Output:-



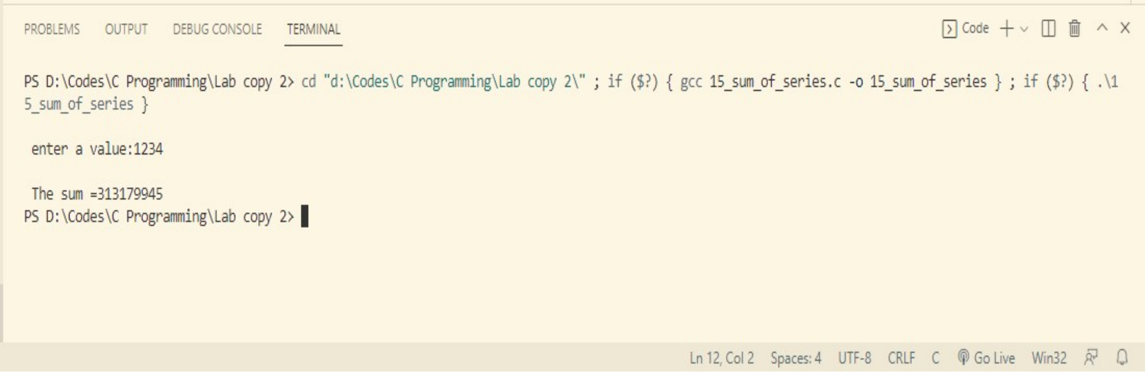
```
PS D:\Codes\C Programming\Lab copy 2> cd "d:\Codes\C Programming\Lab copy 2\" ; if ($?) { gcc 20_decimal_to_binary.c -o 20_decimal_to_binary } ; if ($
?) { .\20_decimal_to_binary }
Enter the decinmal number: 765
765 in decimal = 1011111101 in binary
PS D:\Codes\C Programming\Lab copy 2> █
```

19. Write a program in C to find out the sum of following series 12+32+52+72+………….n terms:-

Code:-

```
#include<stdio.h>
#include<math.h>
int main(void){
        int n, i=1, sum=0;
        printf("\n enter a value:");
        scanf("%d" , &n);
        while(i<=n){
          sum=sum+pow(i,2);
          i=i+2;
        }
        printf("\n The sum =%d" , sum);
}
```

Output:-



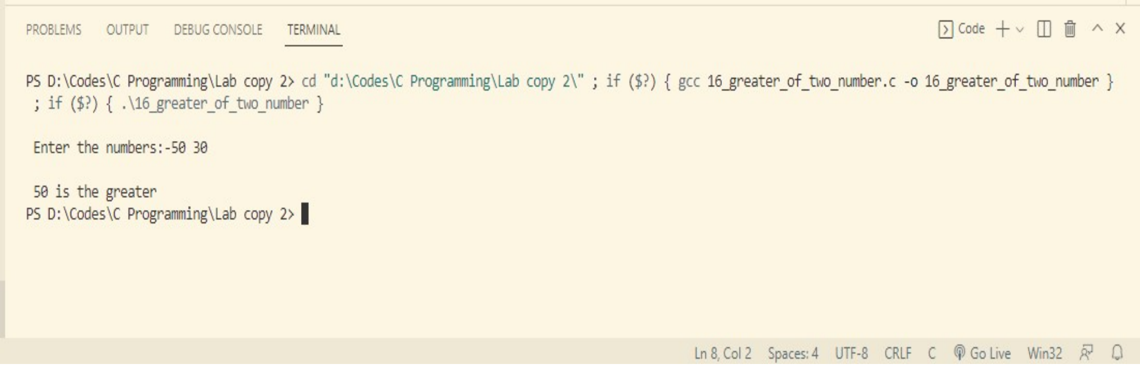
```
PS D:\Codes\C Programming\Lab copy 2> cd "d:\Codes\C Programming\Lab copy 2\" ; if ($?) { gcc 15_sum_of_series.c -o 15_sum_of_series } ; if ($?) { .\1
5_sum_of_series }

 enter a value:1234

 The sum =313179945
PS D:\Codes\C Programming\Lab copy 2> █
```

20. Write a program in C to calculate the greater of two numbers using ternary operator:-

Code:-

```
#include<stdio.h>
#include<math.h>
int main(){
        int a,b;
        printf("\n Enter the numbers:-");
        scanf("%d %d" , &a ,&b);
        (a>b)? printf("\n %d is the greater" , a) : printf("\n %d is greater" , b);
}
```

Output:-



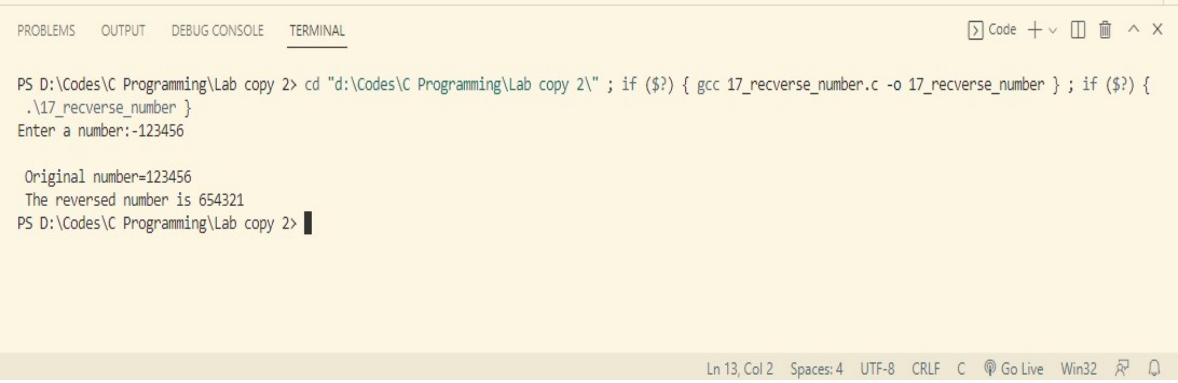
```
PS D:\Codes\C Programming\Lab copy 2> cd "d:\Codes\C Programming\Lab copy 2\" ; if ($?) { gcc 16_greater_of_two_number.c -o 16_greater_of_two_number }
 ; if ($?) { .\16_greater_of_two_number }

 Enter the numbers:-50 30

 50 is the greater
PS D:\Codes\C Programming\Lab copy 2> 
```

21.Write a C program to reverse a number:-

Code:-

```
#include<stdio.h>
int main(){
          int num ,rem, reverse=0;
          printf("Enter a number:-");
          scanf("%d" , &num);
          printf("\n Original number=%d" , num);
          while(num!=0){
            rem=num%10;
            reverse=reverse*10+rem;
            num=num/10;
          }
          printf("\n The reversed number is %d" , reverse);
}
```

Output:-



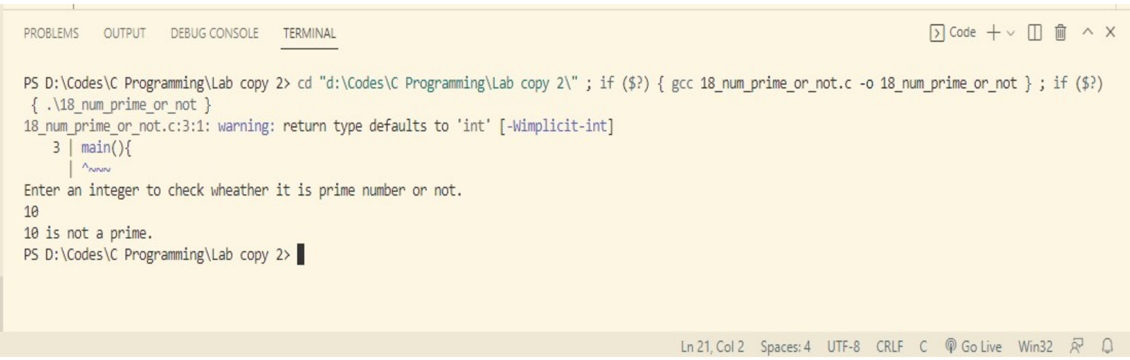
```
PS D:\Codes\C Programming\Lab copy 2> cd "d:\Codes\C Programming\Lab copy 2\" ; if ($?) { gcc 17_recverse_number.c -o 17_recverse_number } ; if ($?) {
 .\17_recverse_number }
Enter a number:-123456

 Original number=123456
 The reversed number is 654321
PS D:\Codes\C Programming\Lab copy 2> 
```

22. Write a C program to find weather the number is prime or not using function.

Code:-

```
#include<stdio.h>
int check_prime(int);
main(){
        int n,result;
        printf("Enter an integer to check wheather it is prime number or not.\n");
        scanf("%d" , &n);
        result=check_prime(n);
        if(result==1)
          printf("%d is a prime.\n",n);
        else
          printf("%d is not a prime.\n",n);
        return 0;
}
int check_prime(int a){
        int c;
        for(c=2; c<=a-1; c++){
          if(a%c==0)
          return 0;
        }
        return 1;
}
```

Output:-



```
PS D:\Codes\C Programming\Lab copy 2> cd "d:\Codes\C Programming\Lab copy 2\" ; if ($?) { gcc 18_num_prime_or_not.c -o 18_num_prime_or_not } ; if ($?)
 { .\18_num_prime_or_not }
18_num_prime_or_not.c:3:1: warning: return type defaults to 'int' [-Wimplicit-int]
    3 | main(){
      | ^~~~
Enter an integer to check wheather it is prime number or not.
10
10 is not a prime.
PS D:\Codes\C Programming\Lab copy 2> 
```