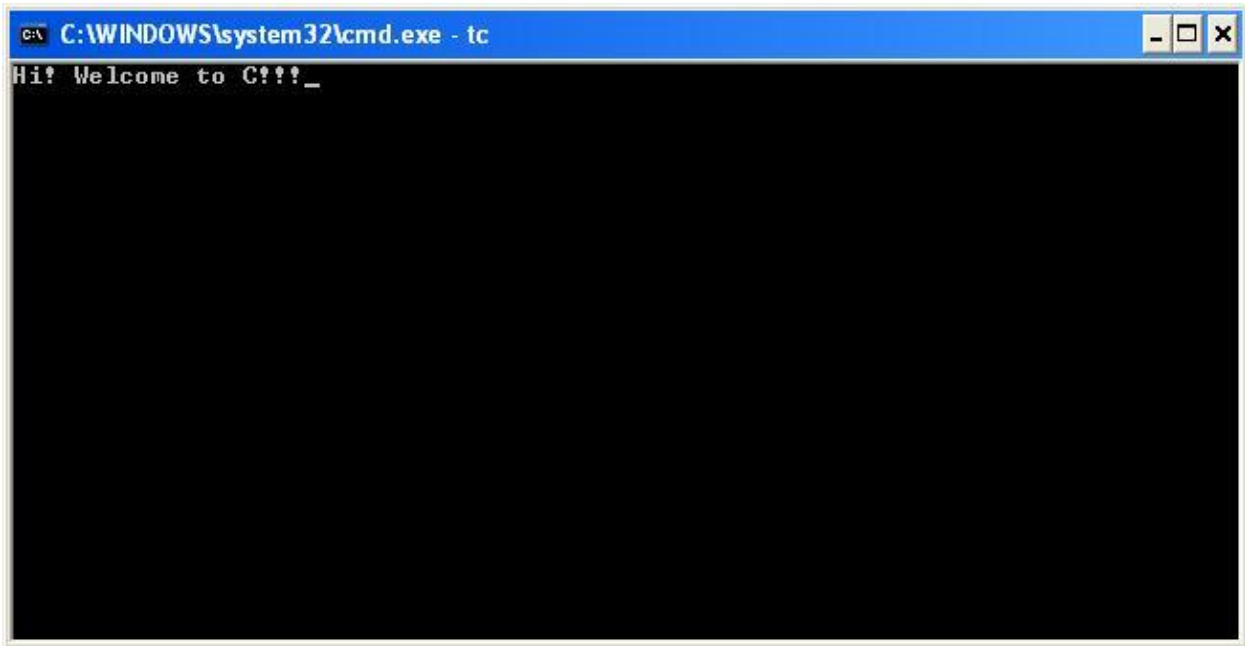




1. Write a C program to print welcome message.

```
#include<stdio.h>
#include<conio.h>
void main()
{
    clrscr();
    printf("Hi! Welcome to C!!!");
    getch();
}
```

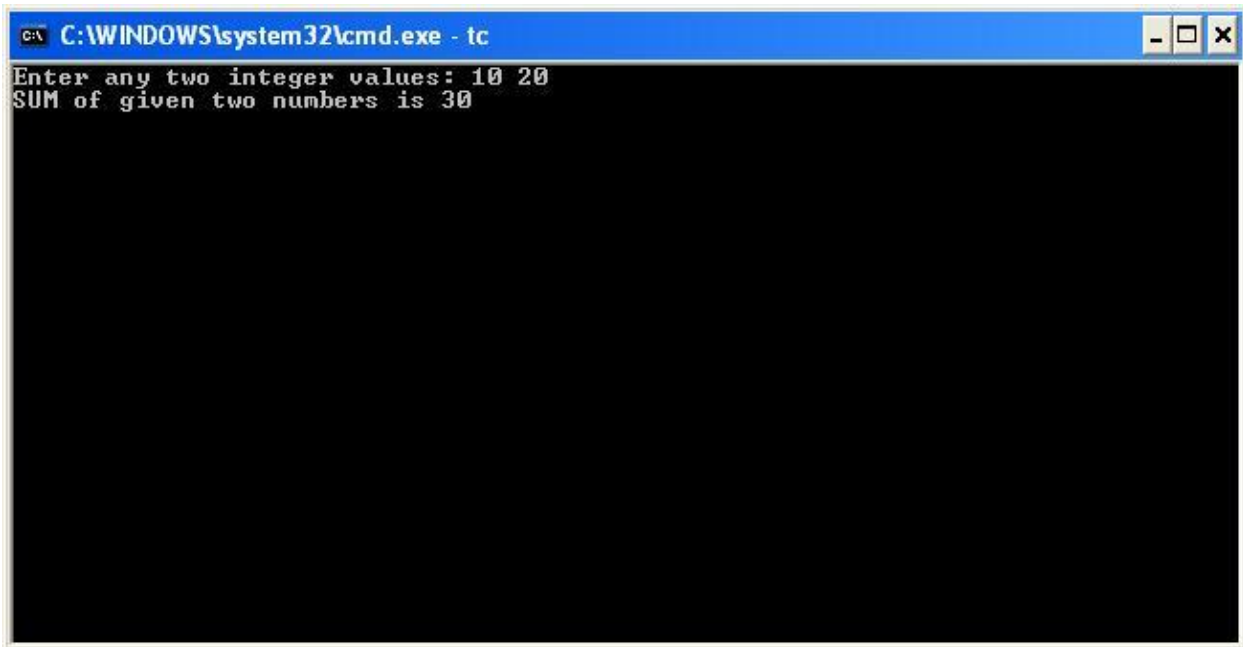




2. Write a C program to perform addition of two integer numbers.

```
#include<stdio.h>
#include<conio.h>
void main()
{
    int a,b,c; // Variable declaration
    clrscr();

    printf("Enter any two integer values: ");
    scanf("%d%d",&a,&b);
    c = a + b;
    printf("SUM of given two numbers is %d",c);
    getch();
}
```





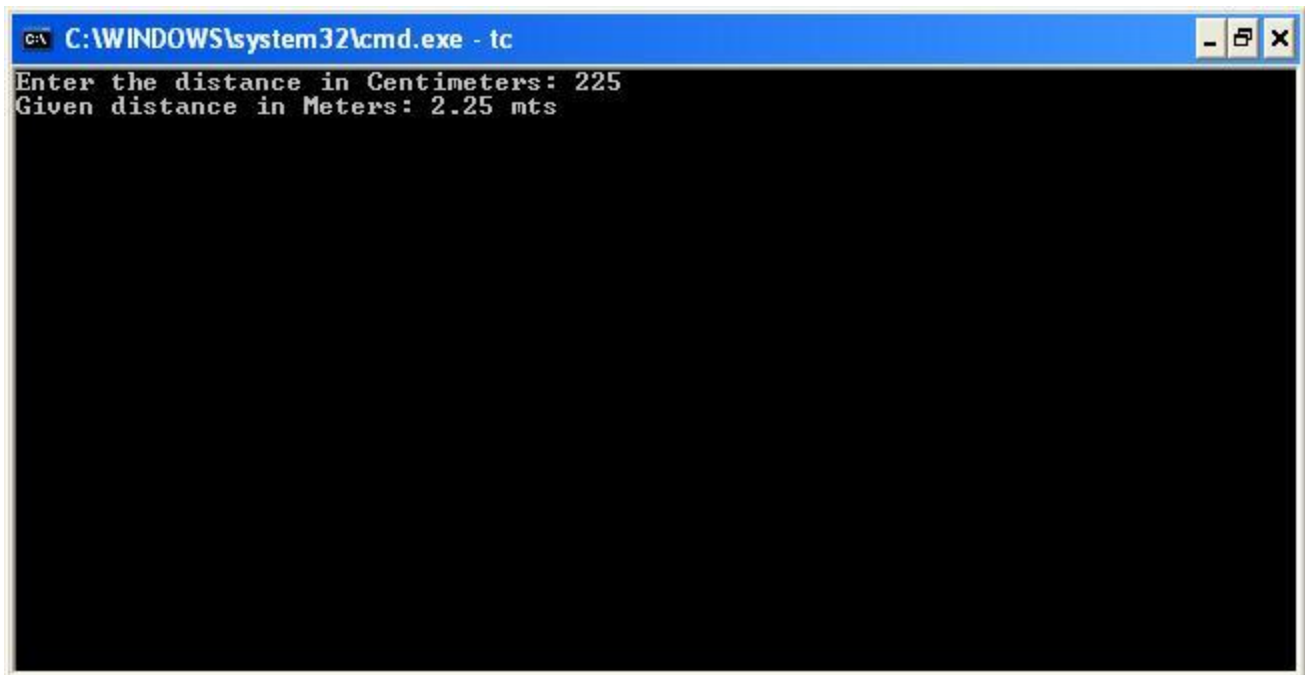
3. Write a C program to convert distance from cm to mts.

```
#include<stdio.h>
#include<conio.h>
void main()
{
    float cm, mts;
    clrscr();

    printf("Enter the distance in Centimeters: ");
    scanf("%f",&cm);

    mts = cm / 100;
    printf("Given distance in Meters: %.2f mts",mts);

    getch();
}
```





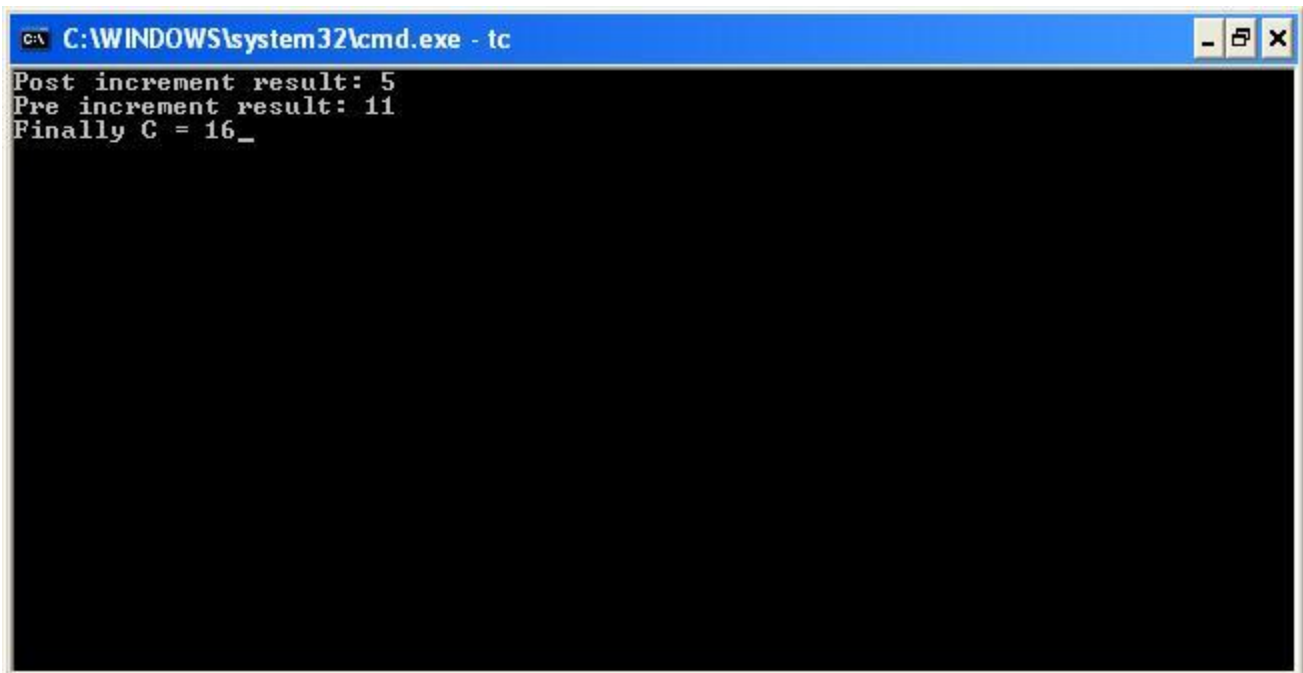
4. Write a C program to illustrate increment and decrement operators.

```
#include<stdio.h>
#include<conio.h>
void main()
{
    int a = 5, b = 10, c, d;
    clrscr();

    c = a++;
    d = ++b;
    printf("Post increment result: %d\n",c);
    printf("Pre increment result: %d\n",d);

    c = a-- + --b;
    printf("Finally C = %d",c);

    getch();
}
```





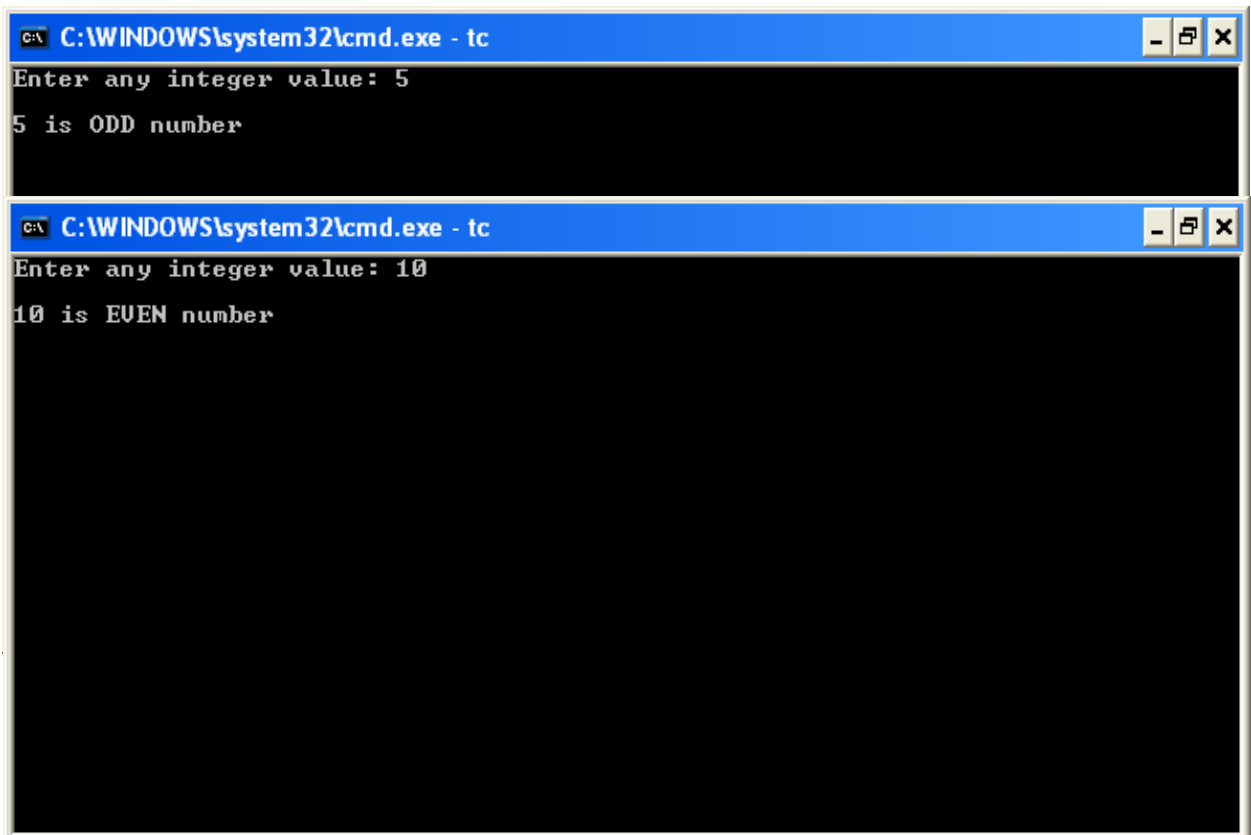
5. Write a C program to test whether given number is EVEN or ODD.

```
#include<stdio.h>
#include<conio.h>
void main()
{
    int num;
    clrscr();

    printf("Enter any integer value: ");
    scanf("%d",&num);

    if(num % 2 == 0)
        printf("\n%d is EVEN number");
    else
        printf("\n%d is ODD number");

    getch();
}
```





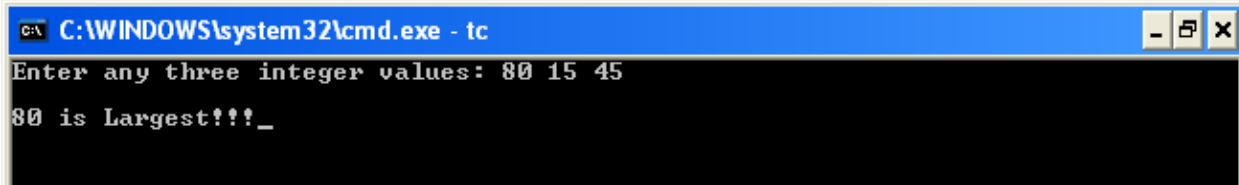
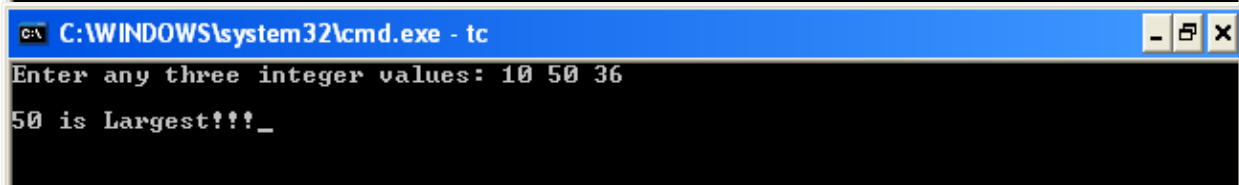
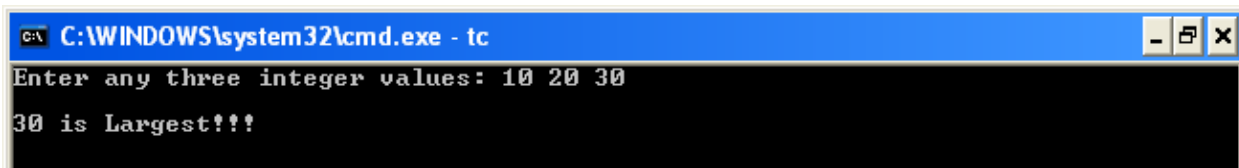
6. Write a C program to find largest of three numbers.

```
#include<stdio.h>
#include<conio.h>
void main()
{
    int a,b,c;
    clrscr();

    printf("Enter any three integer values: ");
    scanf("%d%d%d",&a,&b,&c);

    if(a>b && a>c)
        printf("\n%d is Largest!!!",a);
    else
        if(b>a && b>c)
            printf("\n%d is Largest!!!",b);
        else
            printf("\n%d is Largest!!!",c);

    getch();
}
```





7. Write a C program to swap (exchange) given two numbers.

```
#include<stdio.h>
#include<conio.h>
void main()
{
    int num1, num2, temp;
    clrscr();

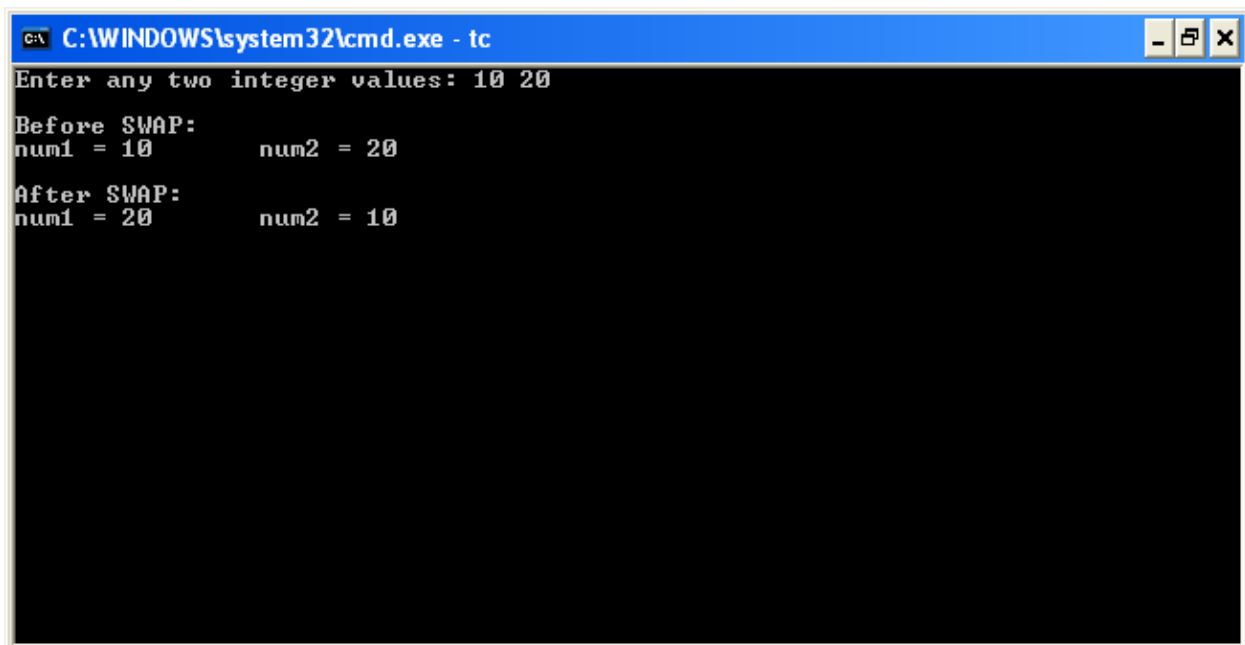
    printf("Enter any two integer values: ");
    scanf("%d%d", &num1, &num2);

    printf("\nBefore SWAP:\nnum1 = %d\t num2 = %d", num1, num2);

    temp = num1;
    num1 = num2;
    num2 = temp;

    printf("\n\nAfter SWAP:\nnum1 = %d\t num2 = %d", num1, num2);

    getch();
}
```





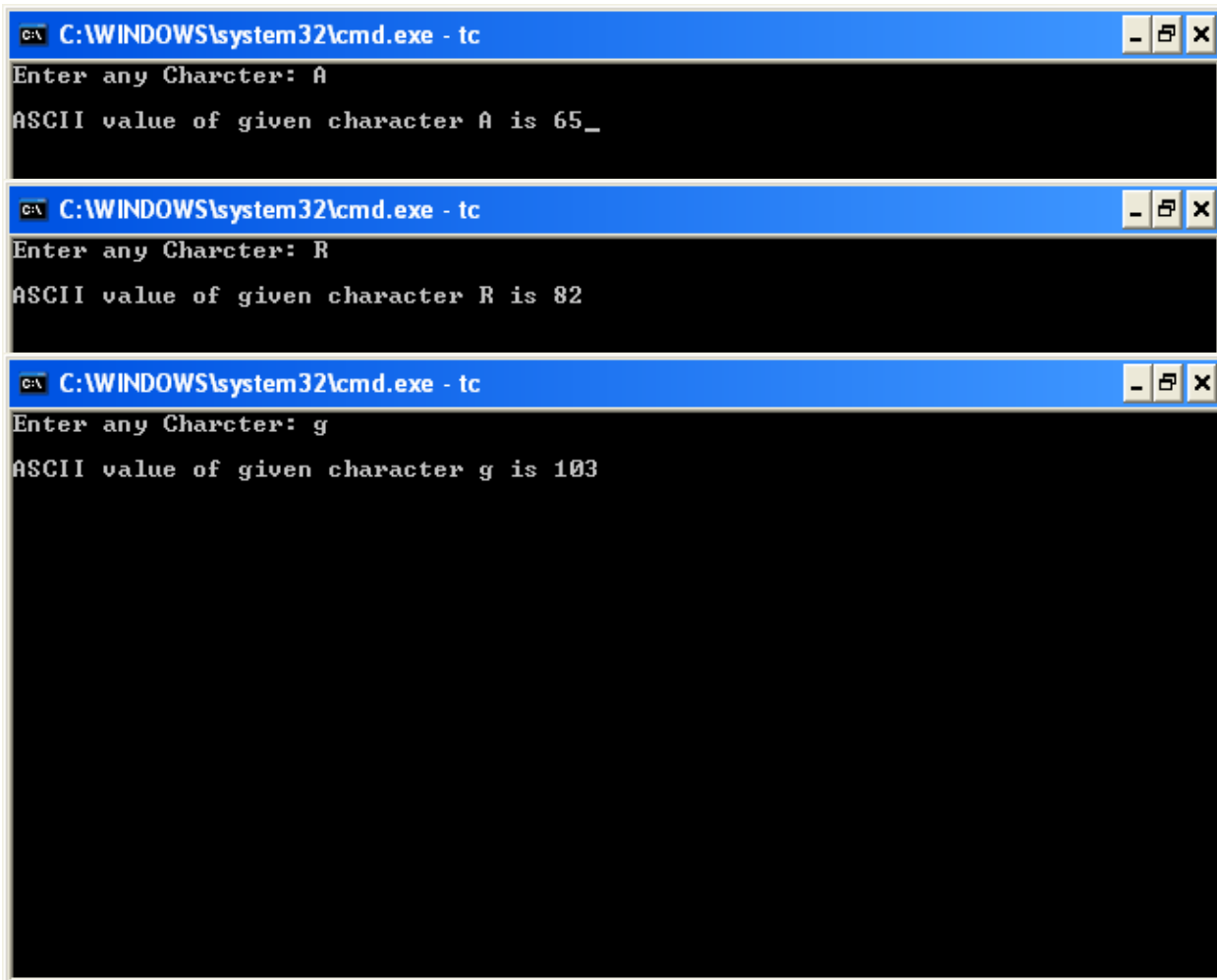
8. Write a C program to print ASCII value of given character.

```
#include<stdio.h>
#include<conio.h>
void main()
{
    char ch;
    clrscr();

    printf("Enter any Character: ");
    scanf("%c",&ch);

    printf("\nASCII value of given character %c is %d",ch,ch);

    getch();
}
```





9. Write a C program to find roots of a quadratic equation.

```
#include<stdio.h>
#include<conio.h>
#include<math.h>
void main()
{
    float a,b,c, root1,root2,temp, real, imag;
    clrscr();

    printf("Enter any a, b and c values: ");
    scanf("%f%f%f",&a,&b,&c);

    temp = (b*b) - (4*a*c);
    if(temp>0)
    {
        printf("\nRoots are real:\n");
        root1 = (-b + sqrt(temp))/(2*a);
        root2 = (-b - sqrt(temp))/(2*a);

        printf("\nRoot1 = %.2f",root1);
        printf("\nRoot2 = %.2f",root2);
    }
    else{
        if(temp == 0)
        {
            printf("\nRoots are real:\n");
            root1 = root2 = -b/(2*a);

            printf("\nRoot1 = %.2f",root1);
            printf("\nRoot2 = %.2f",root2);
        }
        else
        {
            real = -b / (2*a);
            imag = sqrt(-temp) / (2*a);
            printf("\nRoots are imaginary:\n");
            printf("Root1 = %.2f + %.2fi",real,imag);
            printf("\nRoot2 = %.2f - %.2fi",real,imag);
        }
    }

    getch();
}
```



```
C:\WINDOWS\system32\cmd.exe - tc
Enter any a, b and c values: 1 4 0
Roots are real:
Root1 = 0.00
Root2 = -4.00_

C:\WINDOWS\system32\cmd.exe - tc
Enter any a, b and c values: 1 2 3
Roots are imaginary:
Root1 = -1.00 + 1.41i
Root2 = -1.00 - 1.41i
```



10. Write a C program to find Area and Circumference of a Circle.

```
#include<stdio.h>
#include<conio.h>

#define PI 3.14

void main()
{
    float radius,area,circumference;
    clrscr();

    printf("Enter the radius of circle: ");
    scanf("%f",&radius);

    area = PI*(radius*radius);
    circumference = 2 * PI * radius;

    printf("\nArea = %.2f",area);
    printf("\nCircumference = %.2f",circumference);

    getch();
}
```

The image shows two screenshots of a Windows command prompt window. The first screenshot shows the program being run with a radius of 1, resulting in an area of 3.14 and a circumference of 6.28. The second screenshot shows the program being run with a radius of 5, resulting in an area of 78.50 and a circumference of 31.40. Both screenshots show the program's output and the user's input for the radius.

```
C:\WINDOWS\system32\cmd.exe - tc
Enter the radius of circle: 1
Area = 3.14
Circumference = 6.28

C:\WINDOWS\system32\cmd.exe - tc
Enter the radius of circle: 5
Area = 78.50
Circumference = 31.40
```



11. Write a C program to find Area of a Triangle.

```
#include<stdio.h>
#include<conio.h>

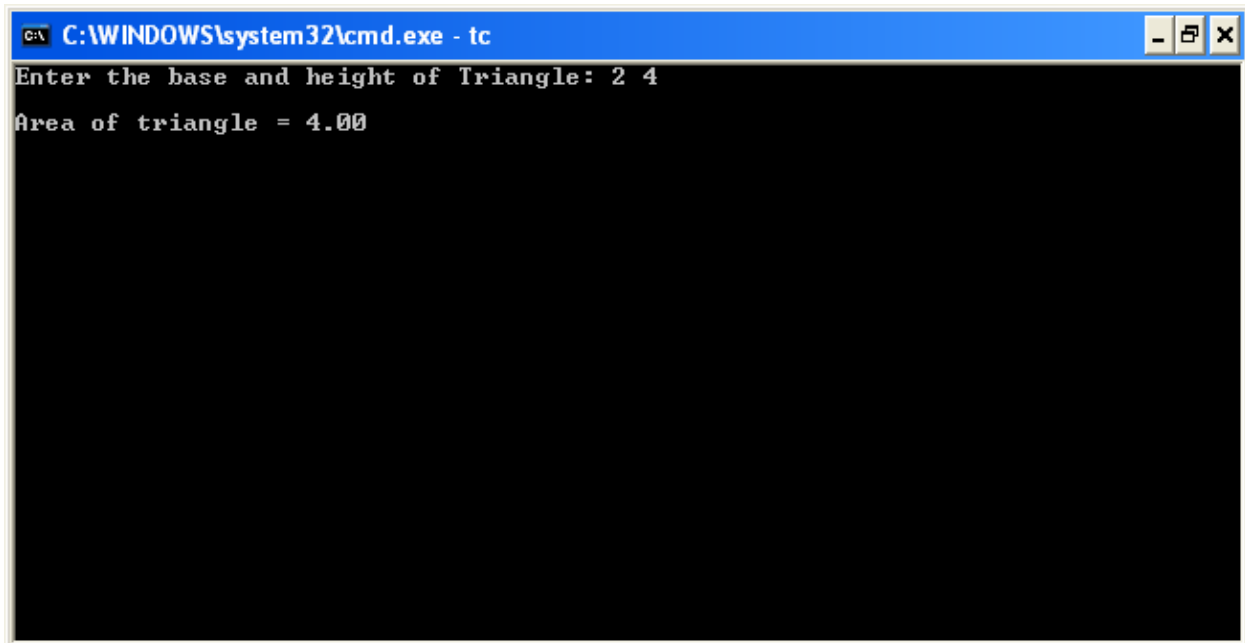
void main()
{
    float base,height,area;
    clrscr();

    printf("Enter the base and height of Triangle: ");
    scanf("%f%f",&base,&height);

    area = (0.5) * base * height;

    printf("\nArea of triangle = %.2f",area);

    getch();
}
```





12. Write a C program to find Factorial of a given integer number.

```
#include<stdio.h>
#include<conio.h>

void main()
{
    int num, fact=1, i;
    clrscr();

    printf("Enter any number: ");
    scanf("%d", &num);

    for(i = num; i >= 1; i--)
    {
        fact = fact * i;
    }

    printf("\nFactorial of %d is %d", num, fact);

    getch();
}
```

The image shows two screenshots of a Windows command prompt window. The first screenshot shows the program being executed with the input '5', resulting in the output 'Factorial of 5 is 120_'. The second screenshot shows the program being executed with the input '3', resulting in the output 'Factorial of 3 is 6'. Both screenshots show the prompt 'Enter any number: ' followed by the user's input and the program's output.

```
C:\WINDOWS\system32\cmd.exe - tc
Enter any number: 5
Factorial of 5 is 120_

C:\WINDOWS\system32\cmd.exe - tc
Enter any number: 3
Factorial of 3 is 6
```



13. Write a C program to test whether given number is PRIME or NOT.

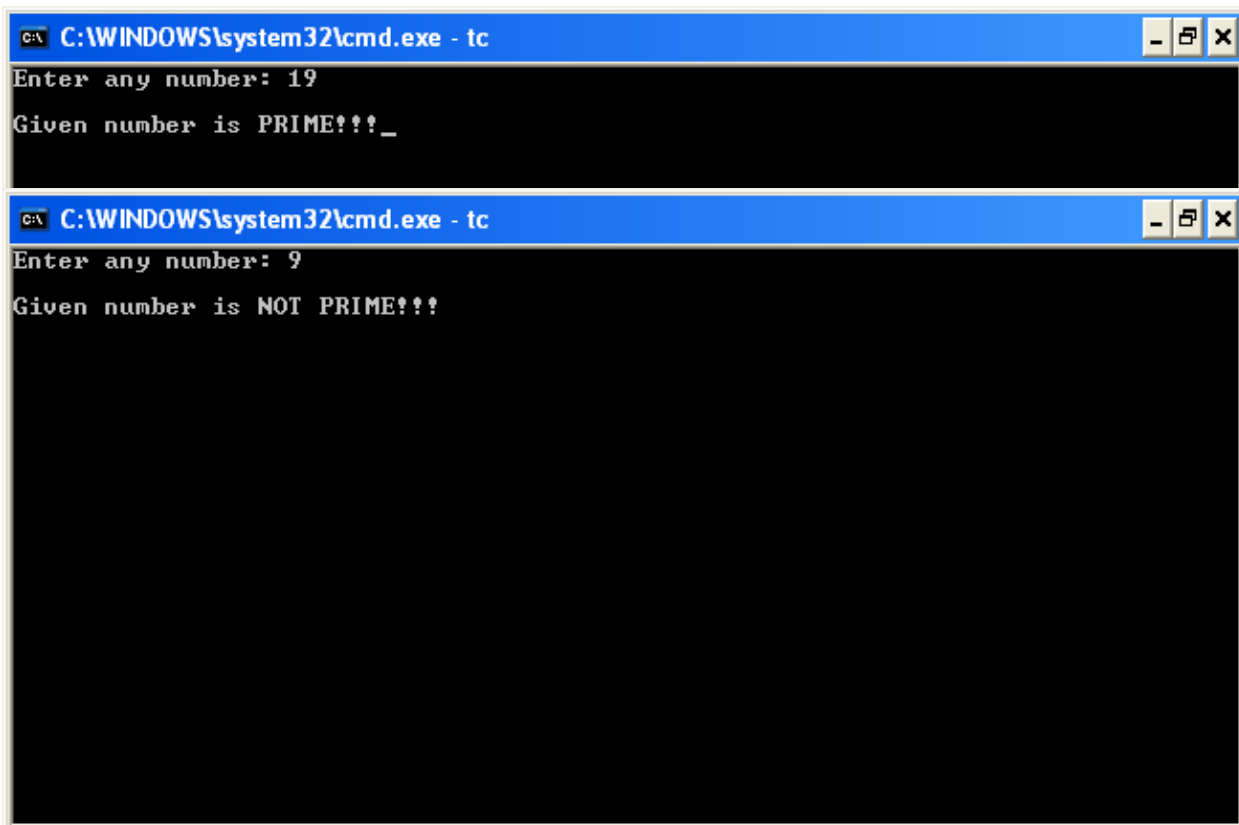
```
#include<stdio.h>
#include<conio.h>

void main()
{
    int num,count=0,i;
    clrscr();

    printf("Enter any number: ");
    scanf("%d",&num);

    for(i = 2; i < num; i++)
    {
        if(num%i == 0)
            count++;
    }
    if(count == 0)
        printf("\nGiven number is PRIME!!!");
    else
        printf("\nGiven number is NOT PRIME!!!");

    getch();
}
```





14. Write a C program to print all PRIME numbers up to 'n'.

```
#include<stdio.h>
#include<conio.h>

void main()
{
    int num,count,i,value;
    clrscr();

    printf("Enter any number: ");
    scanf("%d",&num);

    printf("\nAll PRIME numbers from 1 to %d are\n\n",num);
    value = 1;
    while(value<=num){
        count = 0;
        for(i = 2; i < value; i++){
            if(value%i == 0)
                count++;
        }
        if(count == 0)
            printf("%d\t",value);
        value++;
    }
    getch();
}
```

A screenshot of a Windows command prompt window titled "C:\WINDOWS\system32\cmd.exe - tc". The window shows the output of a C program. The user has entered "20" when prompted "Enter any number:". The program outputs "All PRIME numbers from 1 to 20 are" followed by a list of prime numbers: 1, 2, 3, 5, 7, 11, 13, 17, and 19, each separated by a tab character. The window has standard Windows window controls (minimize, maximize, close) in the top right corner.

```
C:\WINDOWS\system32\cmd.exe - tc
Enter any number: 20
All PRIME numbers from 1 to 20 are
1      2      3      5      7      11     13     17     19
```



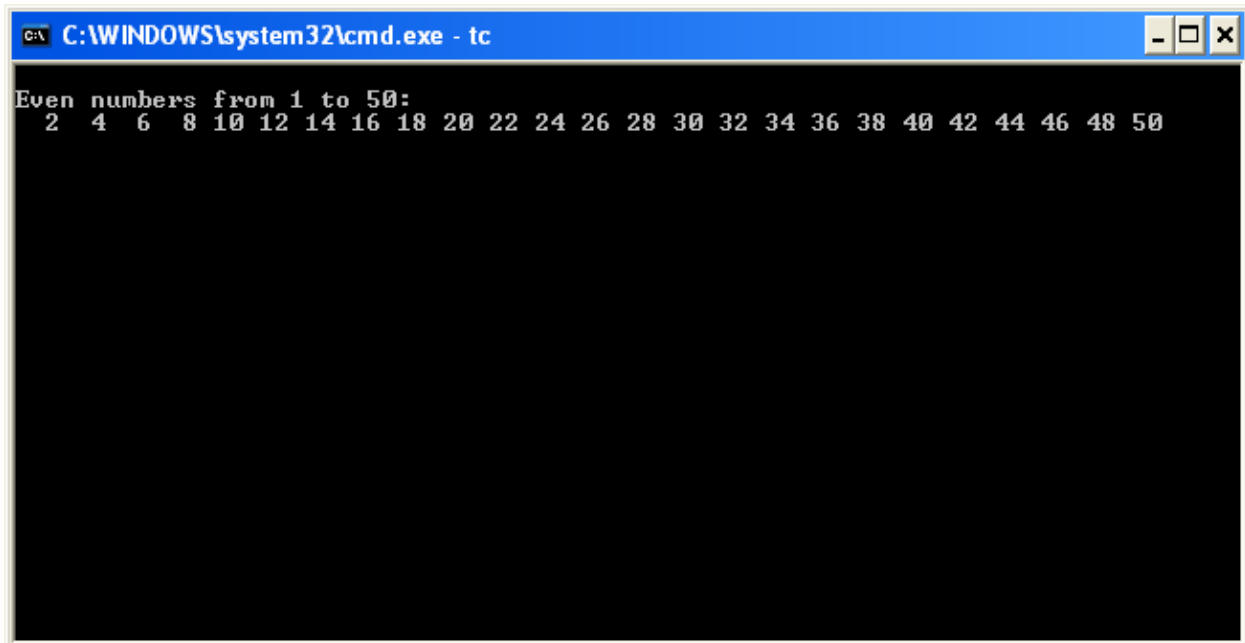
15. Write a C program to print all EVEN numbers from 1 to 50.

```
#include<stdio.h>
#include<conio.h>

void main()
{
    int count = 1;
    clrscr();

    printf("\nEven numbers from 1 to 50:\n");
    while(count<=50)
    {
        if(count%2 == 0)
            printf("%3d",count);
        count++;
    }

    getch();
}
```





16. Write a C program to print Fibonacci series of first 'n' elements.

```
#include<stdio.h>
#include<conio.h>

void main()
{
    int a=0,b=1,c,n,count = 3;
    clrscr();

    printf("Enter the number of elements to be display: ");
    scanf("%d",&n);

    printf("\nFibonacci series of first %d elements:\n",n);
    printf("\n%d\t%d",a,b);
    while(count<=n)
    {
        c = a + b;
        printf("\t%d",c);
        a = b;
        b = c;
        count++;
    }

    getch();
}
```

A screenshot of a Windows command prompt window titled "C:\WINDOWS\system32\cmd.exe - tc". The window shows the execution of a C program. The user enters "10" for the number of elements. The program outputs the Fibonacci series: "Fibonacci series of first 10 elements:" followed by the numbers 0, 1, 1, 2, 3, 5, 8, 13, 21, and 34, each separated by a tab character. The window has standard Windows window controls (minimize, maximize, close) in the top right corner.

```
C:\WINDOWS\system32\cmd.exe - tc
Enter the number of elements to be display: 10
Fibonacci series of first 10 elements:
0      1      1      2      3      5      8      13     21     34
```



17. Write a C program to print REVERSE of given integer number.

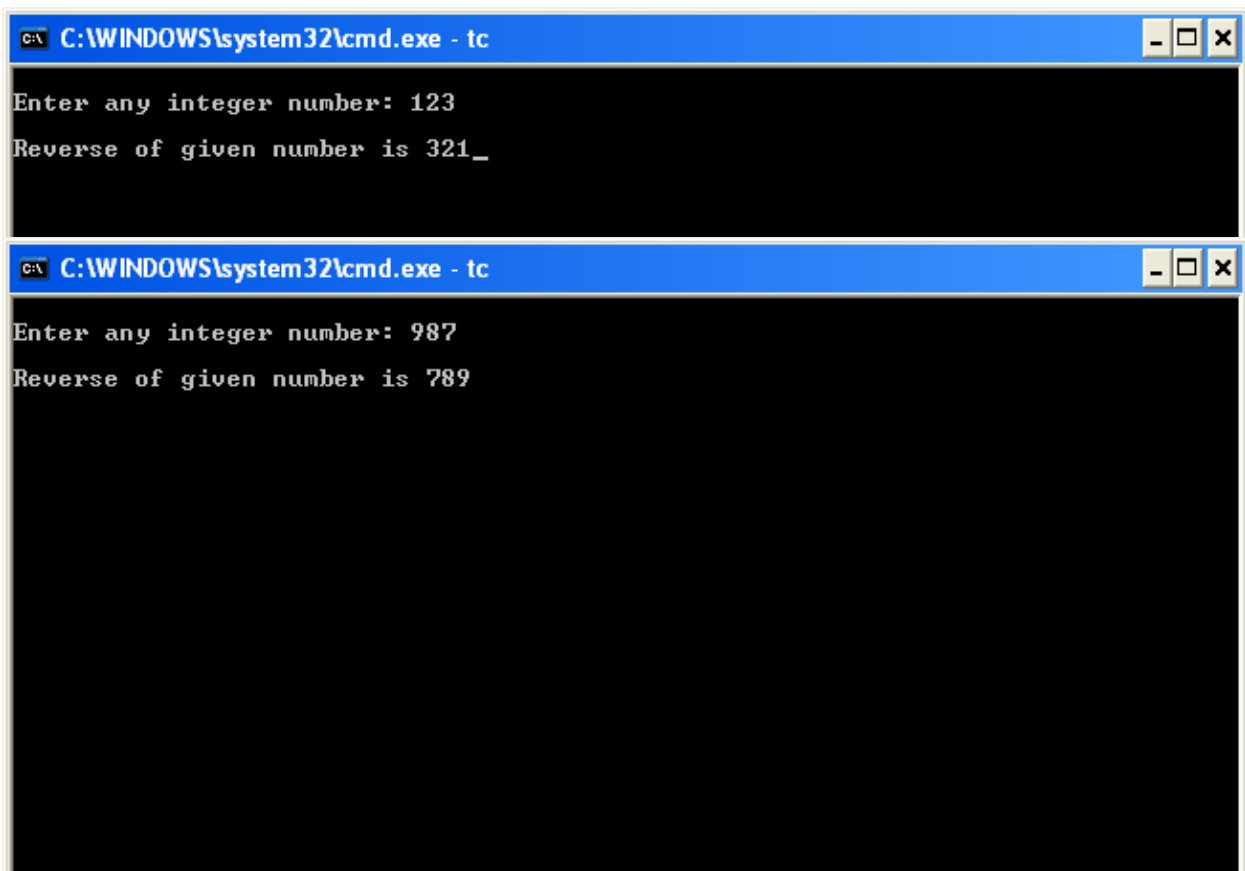
```
#include<stdio.h>
#include<conio.h>

void main()
{
    int num,reverse=0,remainder;
    clrscr();

    printf("\nEnter any integer number: ");
    scanf("%d",&num);

    while(num>0)
    {
        remainder = num % 10;
        reverse = reverse * 10 + remainder;
        num = num / 10;
    }
    printf("\nReverse of given number is %d",reverse);

    getch();
}
```





18. Write a C program to test whether given number is POLINDROME or NOT.

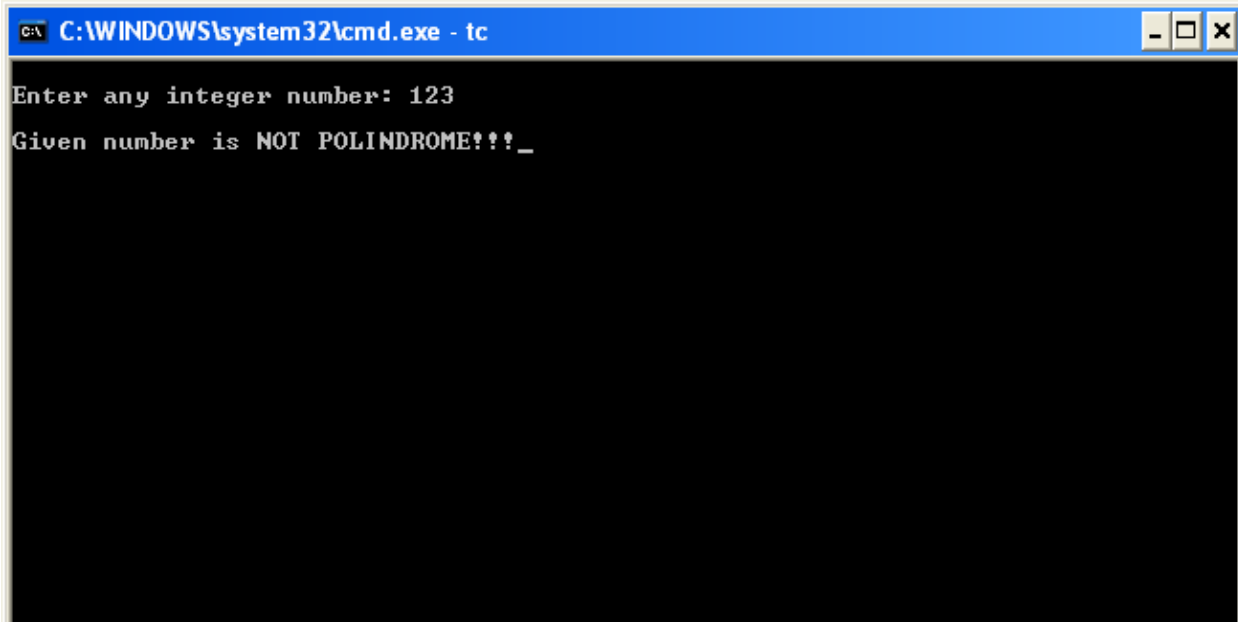
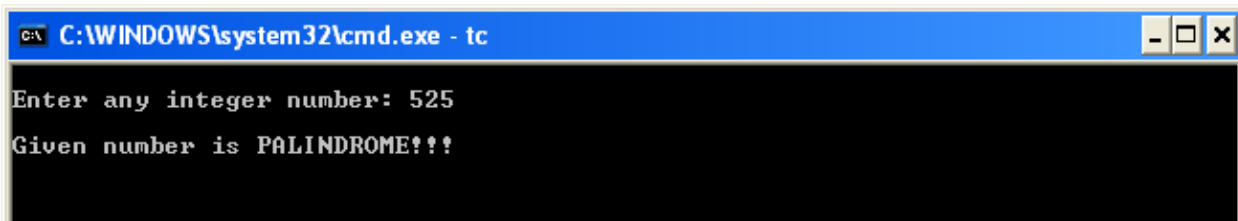
```
#include<stdio.h>
#include<conio.h>

void main()
{
    int num,reverse=0,remainder,temp;
    clrscr();

    printf("\nEnter any integer number: ");
    scanf("%d",&num);
    temp = num;

    while(num>0)
    {
        remainder = num % 10;
        reverse = reverse * 10 + remainder;
        num = num / 10;
    }
    if(temp == reverse)
        printf("\nGiven number is PALINDROME!!!");
    else
        printf("\nGiven number is NOT POLINDROME!!!");

    getch();
}
```





19. Write a C program to test whether given number is ARMSTRONG number or NOT.

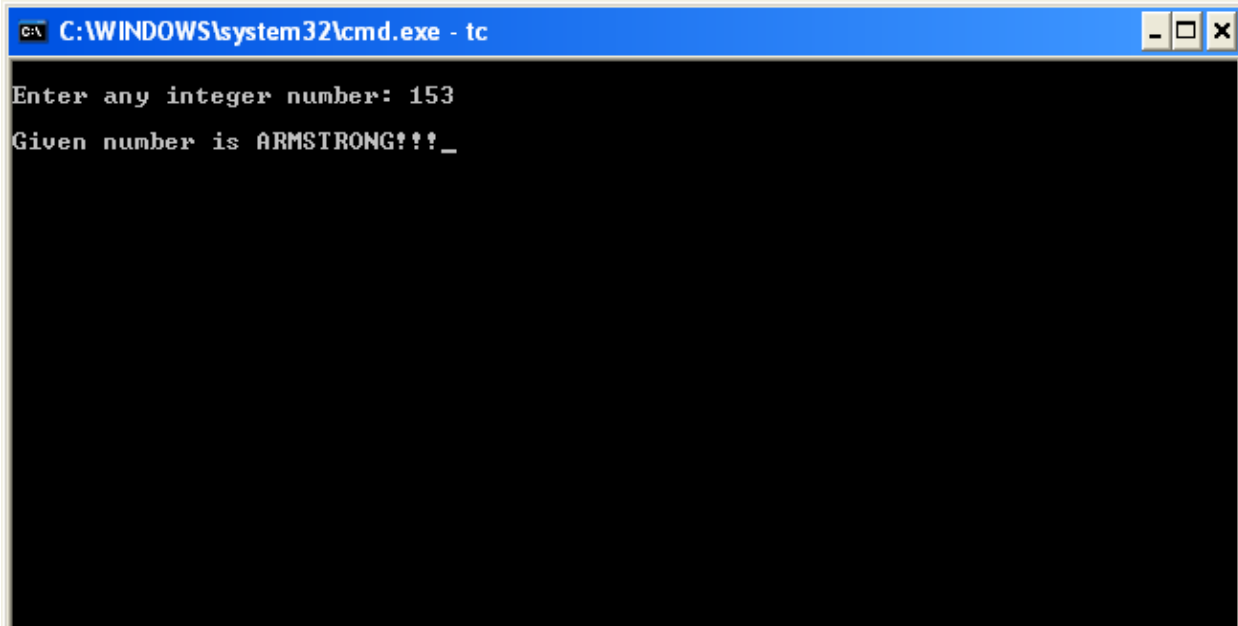
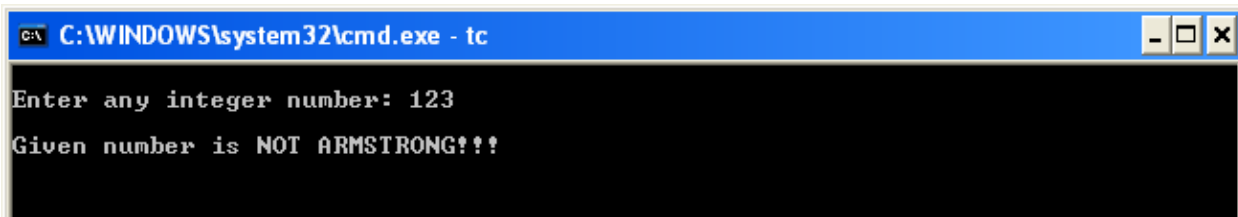
```
#include<stdio.h>
#include<conio.h>
#include<math.h>

void main()
{
    int num,sum=0,remainder,temp;
    clrscr();

    printf("\nEnter any integer number: ");
    scanf("%d",&num);
    temp = num;

    while(num>0){
        remainder = num % 10;
        sum = sum + pow(remainder,3);
        num = num / 10;
    }
    if(temp == sum)
        printf("\nGiven number is ARMSTRONG!!!");
    else
        printf("\nGiven number is NOT ARMSTRONG!!!");

    getch();
}
```





20. Write a C program to perform Addition of two numbers using functions.

```
#include<stdio.h>
#include<conio.h>

void main()
{
    int num1,num2,result;
    int addition(int,int);
    clrscr();

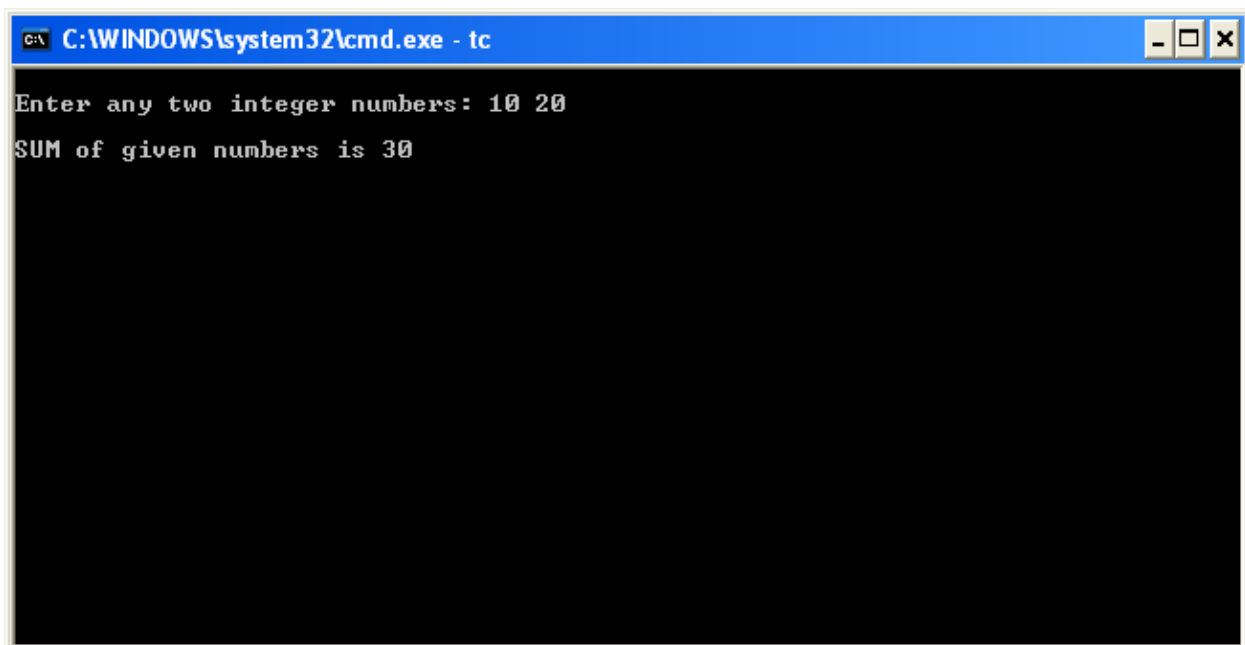
    printf("\nEnter any two integer numbers: ");
    scanf("%d%d",&num1,&num2);

    result = addition(num1,num2);

    printf("\nSUM of given numbers is %d",result);

    getch();
}

int addition(int a, int b)
{
    return(a+b);
}
```





21. Write a C program to perform all Arithmetic operations using functions.

```

#include<stdio.h>
#include<conio.h>
void main()
{
    int num1,num2,result;
    int addition(int,int);
    int subtraction(int,int);
    int multiplication(int,int);
    int division(int,int);
    int modulo(int,int);
    clrscr();

    printf("\nEnter any two integer numbers: ");
    scanf("%d%d",&num1,&num2);

    printf("\n%d + %d = %d",num1,num2,addition(num1,num2));
    printf("\n%d - %d = %d",num1,num2,subtraction(num1,num2));
    printf("\n%d * %d = %d",num1,num2,multiplication(num1,num2));
    printf("\n%d / %d = %d (float value is type casted!)",num1,num2,division(num1,num2));
    printf("\n%d %% %d = %d",num1,num2,modulo(num1,num2));
    getch();
}

int addition(int a, int b){
    return(a+b);
}
int subtraction(int a, int b){
    return(a-b);
}
int multiplication(int a, int b){
    return(a*b);
}
int division(int a, int b){
    if(b == 0){
        printf("\nDivision is not possible!!!");
        return;
    }
    else
        return(a/b);
}
int modulo(int a, int b){
    return(a%b);
}

```



```
C:\> C:\WINDOWS\system32\cmd.exe - tc
Enter any two integer numbers: 5 2
5 + 2 = 7
5 - 2 = 3
5 * 2 = 10
5 / 2 = 2 (float value is type casted!)
5 % 2 = 1
```



22. Write a C program to find SUM of individual digits of given integer number.

```
#include<stdio.h>
#include<conio.h>

void main()
{
    int num,sum=0,remainder;
    clrscr();

    printf("\nEnter any integer number: ");
    scanf("%d",&num);

    while(num>0)
    {
        remainder = num % 10;
        sum = sum + remainder;
        num = num / 10;
    }
    printf("\nSUM of individual digits of given number is %d",sum);

    getch();
}
```

The image shows two screenshots of a Windows command prompt window. The title bar for both windows is "C:\WINDOWS\system32\cmd.exe - tc". The first screenshot shows the program being executed with the input "123", resulting in the output "SUM of individual digits of given number is 6_". The second screenshot shows the program being executed with the input "143", resulting in the output "SUM of individual digits of given number is 8_".

```
C:\WINDOWS\system32\cmd.exe - tc
Enter any integer number: 123
SUM of individual digits of given number is 6_

C:\WINDOWS\system32\cmd.exe - tc
Enter any integer number: 143
SUM of individual digits of given number is 8_
```




23. Write a C program to perform all Arithmetic operations using 'switch' statement.

```
#include<stdio.h>
#include<conio.h>

void main()
{
    int num1,num2;
    char choice;
    clrscr();

    printf("\nEnter any two integer numbers: ");
    scanf("%d%d",&num1,&num2);

    printf("\nEnter operation symbol (+,-,*,/,%): ");
    choice = getch();

    switch(choice)
    {
        case '+': printf("\nd + d = d",num1,num2,num1+num2); break;
        case '-': printf("\nd - d = d",num1,num2,num1-num2); break;
        case '*': printf("\nd * d = d",num1,num2,num1*num2); break;
        case '/': if(num2==0)
                    printf("\nDivision not posible!!!");
                else
                    printf("\nd / d = d",num1, num2, num1/num2);
                break;
        case '%': printf("\nd %% d = d",num1,num2,num1%num2); break;
        default: printf("\nWrong input!!!");
    }
    getch();
}
```

```
C:\WINDOWS\system32\cmd.exe - tc
Enter any two integer numbers: 10 20
Enter operation symbol (+,-,*,/,%):
10 * 20 = 200_
```

```
C:\WINDOWS\system32\cmd.exe - tc
Enter any two integer numbers: 5 2
Enter operation symbol (+,-,*,/,%):
5 + 2 = 7
```

```
C:\WINDOWS\system32\cmd.exe - tc
Enter any two integer numbers: 8 5
Enter operation symbol (+,-,*,/,%):
8 % 5 = 3
```



Write a C program to find GCD or HCF of given two integer numbers.

```
#include<stdio.h>
#include<conio.h>

void main()
{
    int num1,num2,temp=1,gcd;
    clrscr();

    printf("\nEnter any two integer numbers: ");
    scanf("%d%d",&num1,&num2);

    while(temp <= num1 || temp <= num2)
    {
        if(num1%temp == 0 && num2%temp == 0)
            gcd = temp;
        temp++;
    }
    printf("\nGCD of %d and %d is %d",num1,num2,gcd);

    getch();
}
```

The image shows two screenshots of a Windows command prompt window. The top window shows the program being executed with input '9 27' and output 'GCD of 9 and 27 is 9'. The bottom window shows the program being executed with input '14 35' and output 'GCD of 14 and 35 is 7'. Both windows have a blue title bar with the text 'C:\WINDOWS\system32\cmd.exe - tc' and standard window control buttons (minimize, maximize, close).

```
C:\WINDOWS\system32\cmd.exe - tc
Enter any two integer numbers: 9 27
GCD of 9 and 27 is 9

C:\WINDOWS\system32\cmd.exe - tc
Enter any two integer numbers: 14 35
GCD of 14 and 35 is 7
```



24. Write a C program to calculate the following.

$$\text{Sum} = 1 - x^2/2! + x^4/4! - x^6/6! + x^8/8! - x^{10}/10!$$

```
#include<stdio.h>
#include<conio.h>
#include<math.h>

void main()
{
    int x,i=0,n=0;
    float sum=0;
    long fact(int);
    clrscr();

    printf("\nEnter the value of 'x': ");
    scanf("%d",&x);

    while(i<=10)
    {
        sum = sum+(pow(-1,n)*pow(x,i)/fact(i));
        i=i+2;
        n++;
    }
    printf("\nSUM = %ld",sum);

    getch();
}

long fact(int a)
{
    long f=1;
    while(a!=0){
        f = f*a;
        a--;
    }
    return f;
}
```

```
C:\WINDOWS\system32\cmd.exe - tc
Enter the value of 'x': 2
SUM = -2147483648
```



25. Write a C program to calculate the following.

$$s = ut + \frac{1}{2} at^2$$

```
#include<stdio.h>
#include<conio.h>
#include<math.h>

void main()
{
    float u,t,s,a;
    clrscr();

    printf("\nEnter the initial speed: ");
    scanf("%f",&u);
    printf("\nEnter the time taken: ");
    scanf("%f",&t);
    printf("\nEnter the acceleration: ");
    scanf("%f",&a);

    s = (u*t) + (0.5)*a*pow(t,2);
    printf("\nResult = %.2f",s);

    getch();
}
```

A screenshot of a Windows command prompt window titled "C:\WINDOWS\system32\cmd.exe - tc". The window has a blue title bar and standard window controls (minimize, maximize, close). The command prompt shows the following text:

```
Enter the initial speed: 2
Enter the time taken: 5
Enter the acceleration: 6
Result = 85.00_
```