

Experiment no – 02(a)

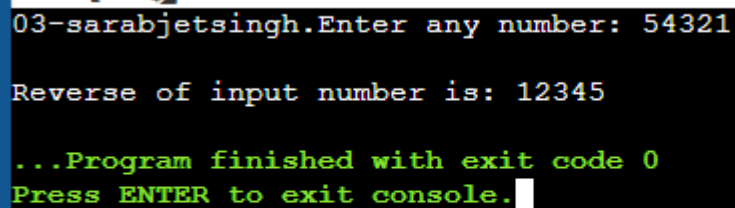
Aim: Write a program using while loop to reverse the digits of a number.

Code:

```
#include <stdio.h>

int main()
{
    printf("03-sarabjetsingh.");
    int num, rnum = 0, rem;
    printf("Enter any number: ");
    scanf("%d", &num);
    while (num != 0) {
        rem = num % 10;
        rnum = rnum * 10 + rem;
        num = num / 10;
    }
    printf("\nReverse of input number is: %d", rnum);
    return 0;
}
```

OUTPUT

A screenshot of a Windows command prompt window. The title bar shows standard Windows icons. The console output is as follows:
03-sarabjetsingh.Enter any number: 54321

Reverse of input number is: 12345

...Program finished with exit code 0
Press ENTER to exit console.
The text is displayed in a monospaced font, with the first line in white and the subsequent lines in green.

Experiment no – 02(b)

Aim : Write a program to calculate the factorial of a given number.

Code :

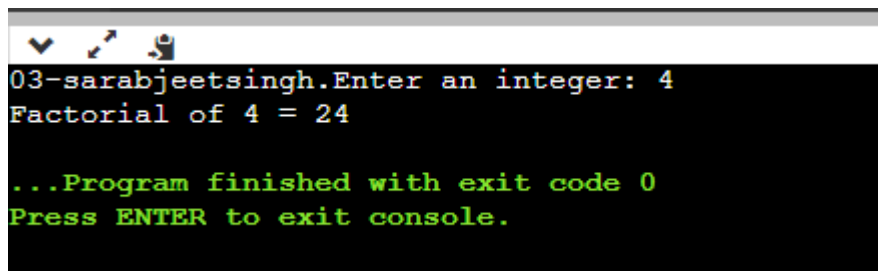
```
#include <stdio.h>

int main() {
    {
        printf("03-sarabjeetsingh");}
    int n, i;
    unsigned long long fact = 1;
    printf("Enter an integer: ");
    scanf("%d", &n);

    // shows error if the user enters a negative integer
    if (n < 0)
        printf("Error! Factorial of a negative number doesn't exist.");
    else {
        for (i = 1; i <= n; ++i) {
            fact *= i;
        }
        printf("Factorial of %d = %llu", n, fact);
    }

    return 0;
}
```

Output :-



```
03-sarabjeetsingh.Enter an integer: 4
Factorial of 4 = 24

...Program finished with exit code 0
Press ENTER to exit console.
```

Experiment no – 02(c)

Aim:- Write a program to find the roots of quadratic equation.

Code :

```
#include<stdio.h>

#include<math.h>

int main()

{
    printf("03-sarabjeetsingh");

    float a,b,c,x1,x2,determinant,realpart,imaginaryPart;

    printf('Enter coefficients a,b and c:');

    scanf("%f%f%f",&a,&b,&c);

    determinant=b*b - 4*a*c;

    if (determinant>0)
    {

        x1=(-b + sqrt(determinant))/(2*a);

        x2=(-b - sqrt(determinant))/(2*a);

        printf("Roots are real and different.");

        printf("\n x1=%.3f",x1);

        printf("\n x2=%.3f",x2);

    }

    else if (determinant==0)

    {

        printf("Roots are real and same.");

        x1=(-b+sqrt(determinant))/(2*a);

        printf("\n x1=%.ef",x1);

        printf("\nx2=%.3f",x2);

    }

    else

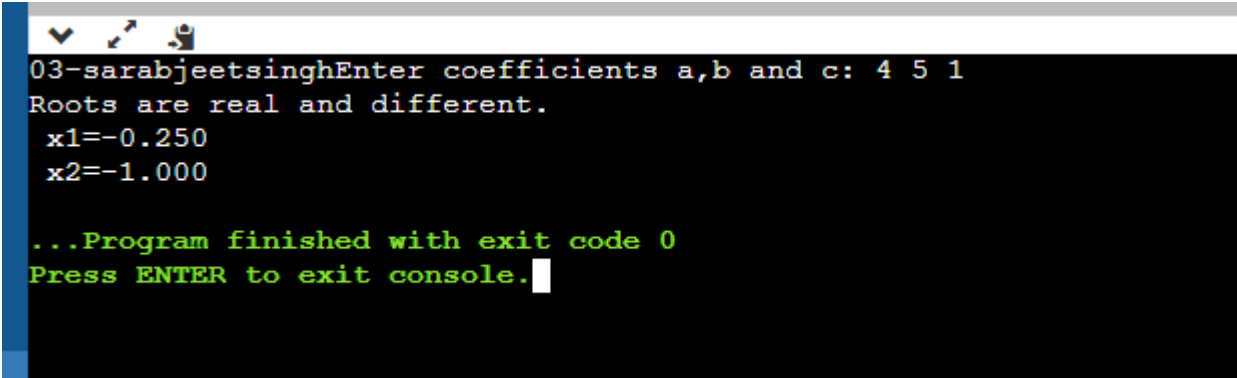
    {

        realpart=-b/(2*a);

        imaginaryPart=sqrt(determinant)/(2*a);
```

```
printf("\n Roots are complex and differtent.");  
printf("\n x1=%.3f+%.fi",realpart,imaginaryPart);  
printf("\nx2 = %.3f-%.3fi",realpart,imaginaryPart);  
}  
return 0;
```

Output :-



A screenshot of a terminal window with a black background and green text. The window title is '03-sarabjeetsingh'. The output shows the user entering coefficients '4 5 1', followed by the program's output: 'Roots are real and different.', 'x1=-0.250', and 'x2=-1.000'. The program then finishes with 'exit code 0' and prompts the user to 'Press ENTER to exit console.'.

```
03-sarabjeetsinghEnter coefficients a,b and c: 4 5 1  
Roots are real and different.  
x1=-0.250  
x2=-1.000  
  
...Program finished with exit code 0  
Press ENTER to exit console.
```

Experiment no – 02(d)

Aim :- Write a program to print the Fibonacci series.

Code :-

```
#include <stdio.h>

int main() {
printf("03-sarabjeetsingh");

int i, n;

// initialize first and second terms
int t1 = 0, t2 = 1;

// initialize the next term (3rd term)
int nextTerm = t1 + t2;

// get no. of terms from user
printf("Enter the number of terms: ");
scanf("%d", &n);

// print the first two terms t1 and t2
printf("Fibonacci Series: %d, %d, ", t1, t2);

// print 3rd to nth terms
for (i = 3; i <= n; ++i) {
printf("%d, ", nextTerm);
t1 = t2;
t2 = nextTerm;
nextTerm = t1 + t2;
}

return 0;
}
```

Output :-



```
03-sarabjeetsinghEnter the number of terms: 5  
Fibonacci Series: 0, 1, 1, 2, 3,
```

```
...Program finished with exit code 0  
Press ENTER to exit console.
```