

java program to find factorial of a given number using recursion

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Here we will write programs to find out the factorial of a number using recursion.

Program 1:

Program will prompt user for the input number. Once user provide the input, the program will calculate the factorial for the provided input number.

```
/**
 * @author: BeginnersBook.com
 * @description: User would enter the 10 elements
 * and the program will store them into an array and
 * will display the sum of them.
 */
import java.util.Scanner;
class FactorialDemo{
    public static void main(String args[]){
        //Scanner object for capturing the user input
        Scanner scanner = new Scanner(System.in);
        System.out.println("Enter the number:");
        //Stored the entered value in variable
        int num = scanner.nextInt();
        //Called the user defined function fact
        int factorial = fact(num);
        System.out.println("Factorial of entered number is: "+factorial);
    }
    static int fact(int n)
    {
        int output;
        if(n==1){
            return 1;
        }
        //Recursion: Function calling itself!!
        output = fact(n-1)* n;
        return output;
    }
}
```

Output:

```
Enter the number:
5
Factorial of entered number is: 120
```

Program 2:

If you do not want user intervention and simply want to specify the number in program itself then refer this example.

```
class FactorialDemo2{
```

```
public static void main(String args[]){
    int factorial = fact(4);
    System.out.println("Factorial of 4 is: "+factorial);
}
static int fact(int n)
{
    int output;
    if(n==1){
        return 1;
    }
    //Recursion: Function calling itself!!
    output = fact(n-1)* n;
    return output;
}
}
```

Output:

```
Factorial of 4 is: 24
```