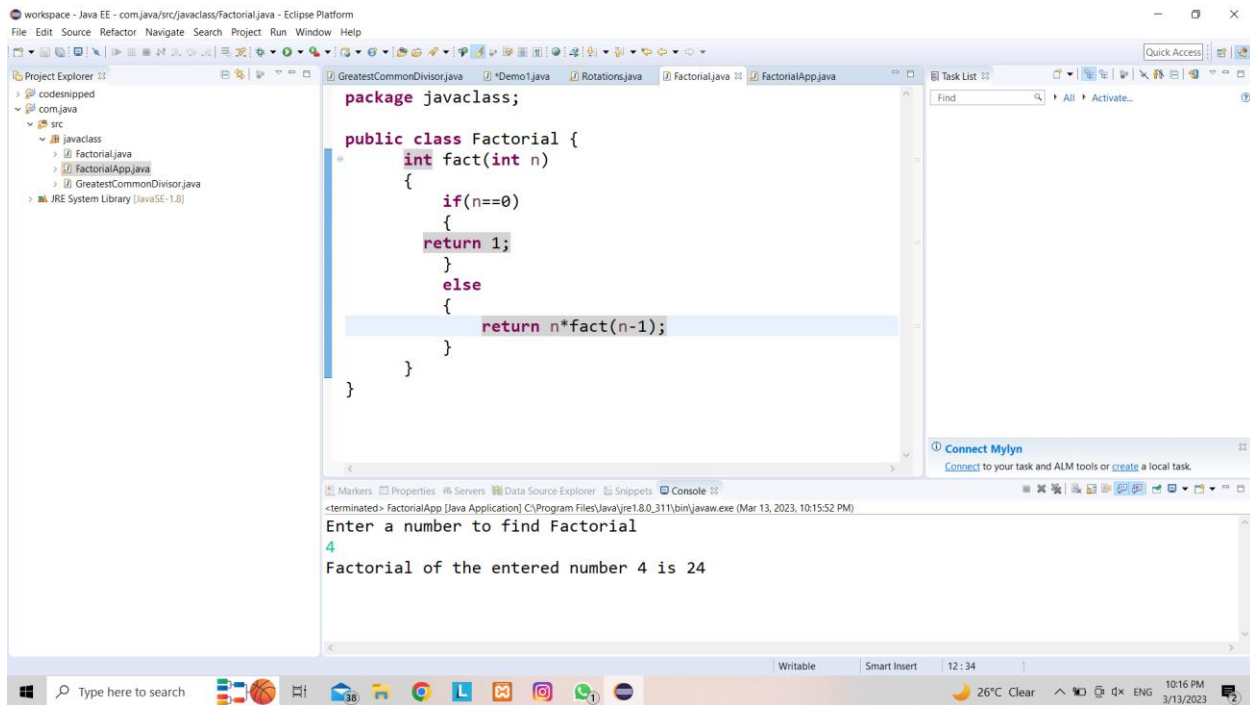


RECURSION

1. Finding Factorial of a number using recursion.



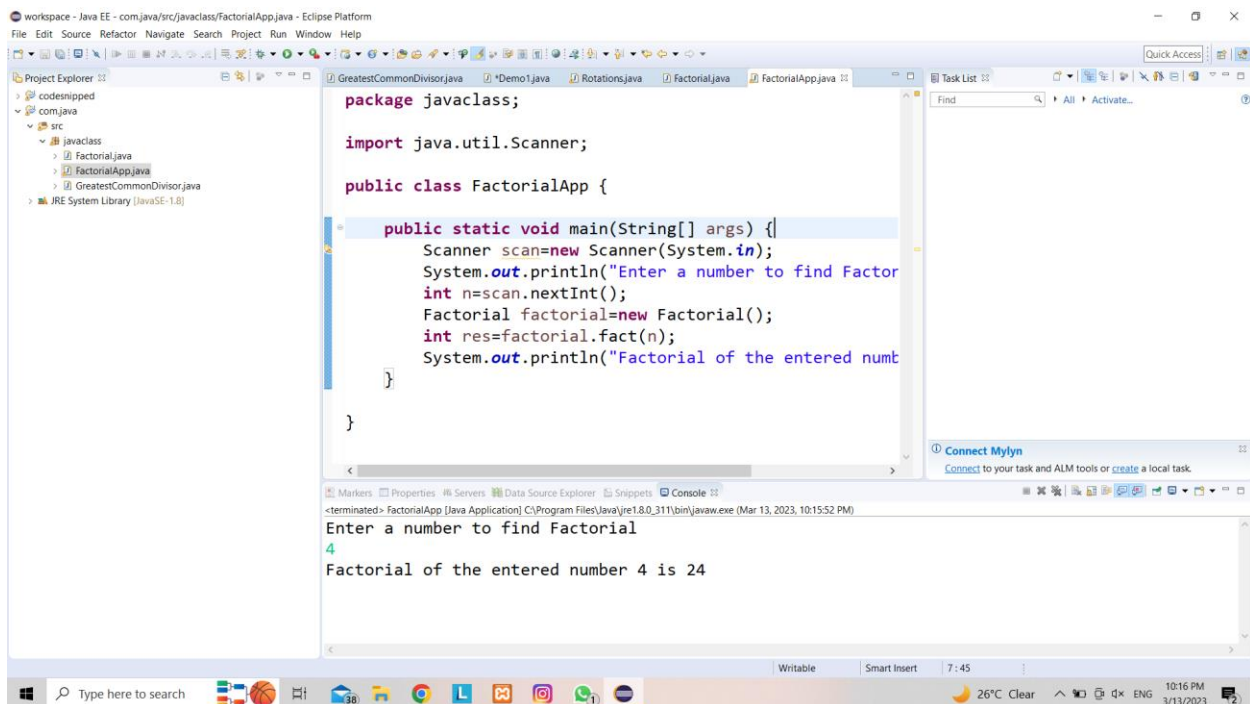
The screenshot shows the Eclipse IDE with the `Factorial.java` file open. The code defines a `Factorial` class with a recursive `fact` method. The console output shows the program execution with the input 4 and the output 24.

```
package javaclass;

public class Factorial {
    int fact(int n)
    {
        if(n==0)
        {
            return 1;
        }
        else
        {
            return n*fact(n-1);
        }
    }
}
```

Console Output:

```
<terminated> FactorialApp [Java Application] C:\Program Files\Java\jre1.8.0_311\bin\javaw.exe (Mar 13, 2023, 10:15:52 PM)
Enter a number to find Factorial
4
Factorial of the entered number 4 is 24
```



The screenshot shows the Eclipse IDE with the `FactorialApp.java` file open. The code defines a `FactorialApp` class with a `main` method that uses the `Factorial` class to calculate the factorial of a user input. The console output shows the program execution with the input 4 and the output 24.

```
package javaclass;

import java.util.Scanner;

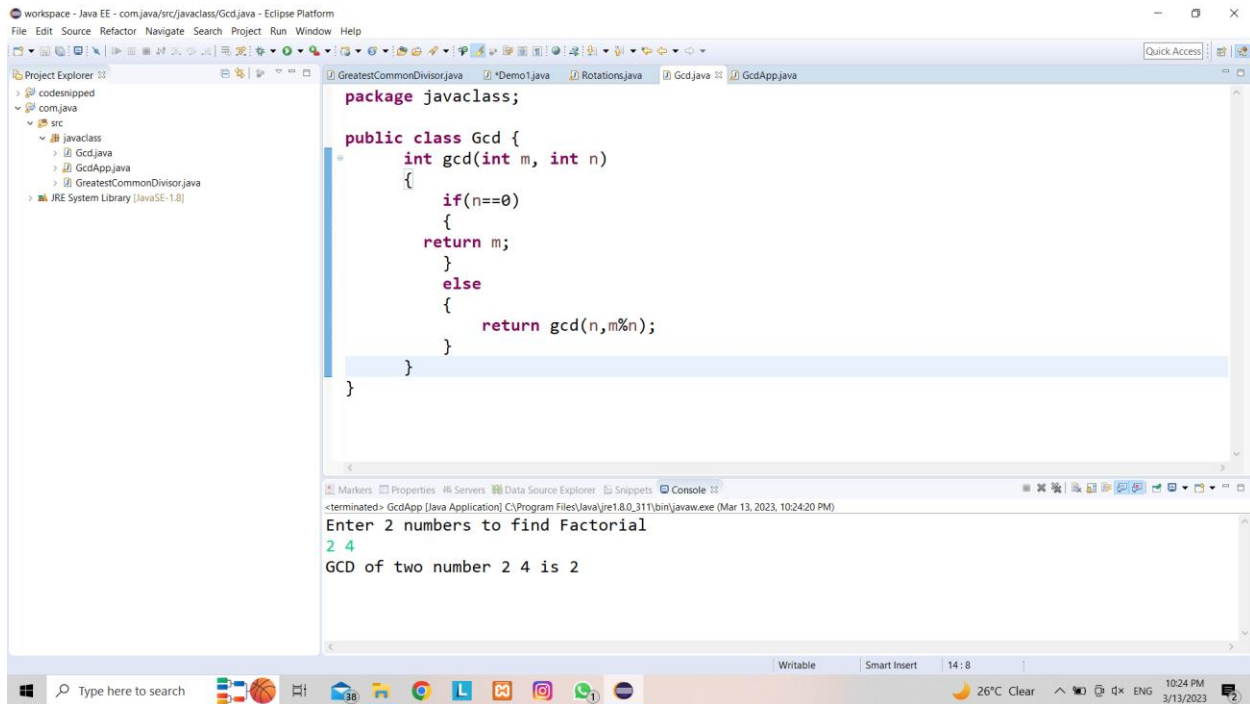
public class FactorialApp {

    public static void main(String[] args) {
        Scanner scan=new Scanner(System.in);
        System.out.println("Enter a number to find Factorial");
        int n=scan.nextInt();
        Factorial factorial=new Factorial();
        int res=factorial.fact(n);
        System.out.println("Factorial of the entered number is "+res);
    }
}
```

Console Output:

```
<terminated> FactorialApp [Java Application] C:\Program Files\Java\jre1.8.0_311\bin\javaw.exe (Mar 13, 2023, 10:15:52 PM)
Enter a number to find Factorial
4
Factorial of the entered number 4 is 24
```

2. Finding GCD of two numbers using recursion.



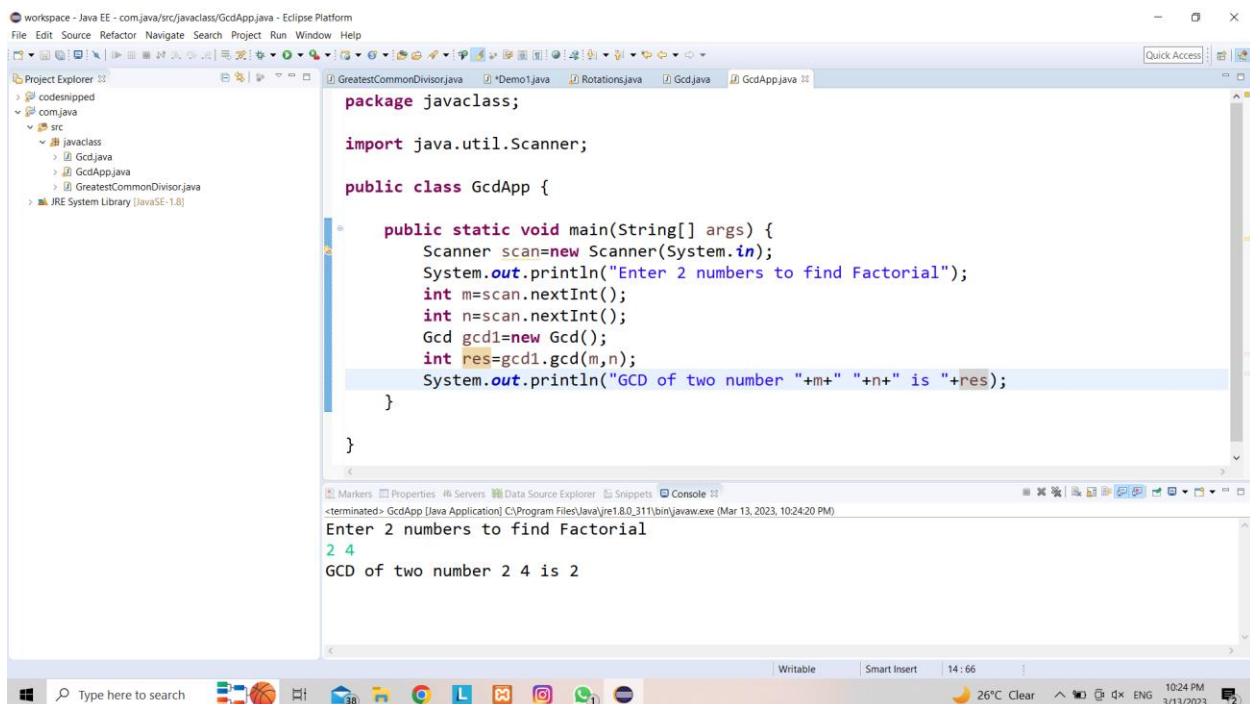
The screenshot shows the Eclipse IDE with the `Gcd.java` file open. The code defines a recursive method `gcd` to find the Greatest Common Divisor of two numbers. The console output shows the program execution with inputs 2 and 4, resulting in a GCD of 2.

```
package javaclass;

public class Gcd {
    int gcd(int m, int n)
    {
        if(n==0)
        {
            return m;
        }
        else
        {
            return gcd(n,m%n);
        }
    }
}
```

Console Output:

```
<terminated> GcdApp [Java Application] C:\Program Files\Java\jre1.8.0_311\bin\javaw.exe (Mar 13, 2023, 10:24:20 PM)
Enter 2 numbers to find Factorial
2 4
GCD of two number 2 4 is 2
```



The screenshot shows the Eclipse IDE with the `GcdApp.java` file open. The code defines a `main` method that uses a `Scanner` to take user input and calls the `gcd` method from the `Gcd` class. The console output shows the program execution with inputs 2 and 4, resulting in a GCD of 2.

```
package javaclass;

import java.util.Scanner;

public class GcdApp {

    public static void main(String[] args) {
        Scanner scan=new Scanner(System.in);
        System.out.println("Enter 2 numbers to find Factorial");
        int m=scan.nextInt();
        int n=scan.nextInt();
        Gcd gcd1=new Gcd();
        int res=gcd1.gcd(m,n);
        System.out.println("GCD of two number "+m+" "+n+" is "+res);
    }
}
```

Console Output:

```
<terminated> GcdApp [Java Application] C:\Program Files\Java\jre1.8.0_311\bin\javaw.exe (Mar 13, 2023, 10:24:20 PM)
Enter 2 numbers to find Factorial
2 4
GCD of two number 2 4 is 2
```