

## 1. Write a java program to calculate electricity bill

### CODE:

```
import java.util.Scanner;

public class Main
{
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);

        int units = sc.nextInt();

        double amount;

        if((units>=100)&&(units<=200))
        {
            amount = units*2;
        }

        else if((units>=201)&&(units<=500))
        {
            amount = units*3;
        }

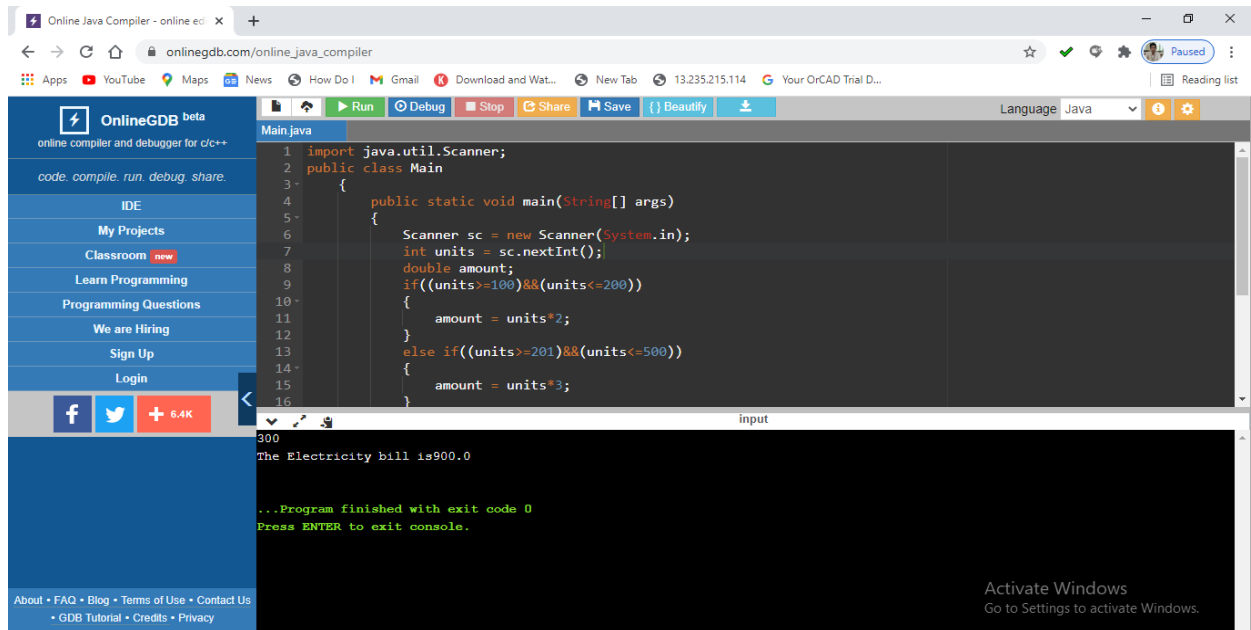
        else if(units>=501)
        {
            amount = units*4.5;
        }

        else
        {
            amount = 0;
        }

        System.out.println("The Electricity bill is" +(amount));
    }
}
```

```
}  
  
}
```

## OUTPUT:



The screenshot displays the OnlineGDB web interface. The left sidebar contains navigation links: IDE, My Projects, Classroom (marked 'new'), Learn Programming, Programming Questions, We are Hiring, Sign Up, and Login. Below these are social media icons for Facebook and Twitter, and a '+ 6.4K' button. The main editor area shows a Java file named 'Main.java' with the following code:

```
1 import java.util.Scanner;  
2 public class Main  
3 {  
4     public static void main(String[] args)  
5     {  
6         Scanner sc = new Scanner(System.in);  
7         int units = sc.nextInt();  
8         double amount;  
9         if((units>=100)&&(units<=200))  
10        {  
11            amount = units*2;  
12        }  
13        else if((units>=201)&&(units<=500))  
14        {  
15            amount = units*3;  
16        }  
17    }  
18 }
```

The output console at the bottom shows the program's execution. It starts with '300' entered as input, followed by the output 'The Electricity bill is900.0'. The console also displays '...Program finished with exit code 0' and 'Press ENTER to exit console.'.

## 2. Write a java program to print 3X3 Matrix multiplication

### CODE:

```
public class Main{

    public static void main(String args[]){

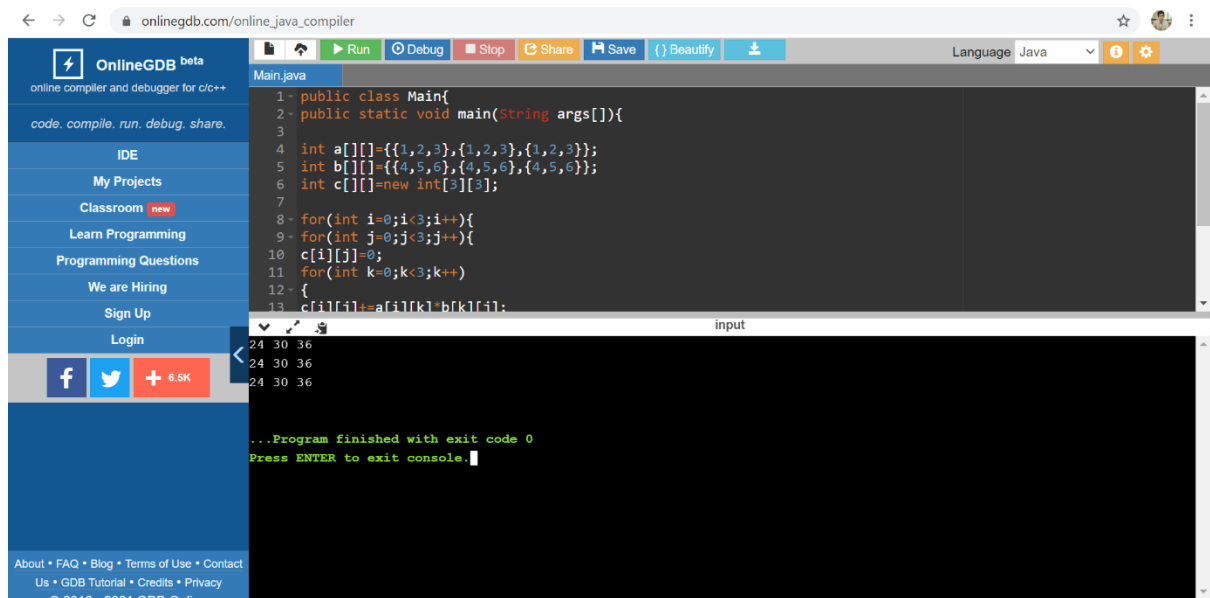
        int a[][]={{1,2,3},{1,2,3},{1,2,3}};

        int b[][]={{4,5,6},{4,5,6},{4,5,6}};

        int c[][]=new int[3][3];

        for(int i=0;i<3;i++){
            for(int j=0;j<3;j++){
                c[i][j]=0;
                for(int k=0;k<3;k++){
                    {
                        c[i][j]+=a[i][k]*b[k][j];
                    }
                }
                System.out.print(c[i][j]+" ");
            }
            System.out.println();
        }
    }
}
```

## OUTPUT:



The screenshot displays the OnlineGDB web interface. The left sidebar contains navigation links: IDE, My Projects, Classroom (new), Learn Programming, Programming Questions, We are Hiring, Sign Up, and Login. The main editor area shows a Java file named 'Main.java' with the following code:

```
1- public class Main{
2- public static void main(String args[]){
3
4 int a[][]={{1,2,3},{1,2,3},{1,2,3}};
5 int b[][]={{4,5,6},{4,5,6},{4,5,6}};
6 int c[][]=new int[3][3];
7
8 for(int i=0;i<3;i++){
9 for(int j=0;j<3;j++){
10 c[i][j]=0;
11 for(int k=0;k<3;k++){
12 {
13 c[i][j]+=a[i][k]*b[k][j];
14 }
15 }
16 }
17 }
```

The output console at the bottom shows the execution results:

```
24 30 36
24 30 36
24 30 36

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

### 3. Write a java program to calculate factorial of given numbers

#### CODE:

```
import java.util.Scanner;

class factorial{

    int fact(int n)

    {

        for (int i=n-1; i>0; i--)

        {

            n=n*i;

        }

        return n;

    }

}

public class Main{

    public static void main (String[]args){

        System.out.println("enter the number");

        Scanner sc=new Scanner(System.in);

        int n = sc.nextInt();

        factorial f1=new factorial();

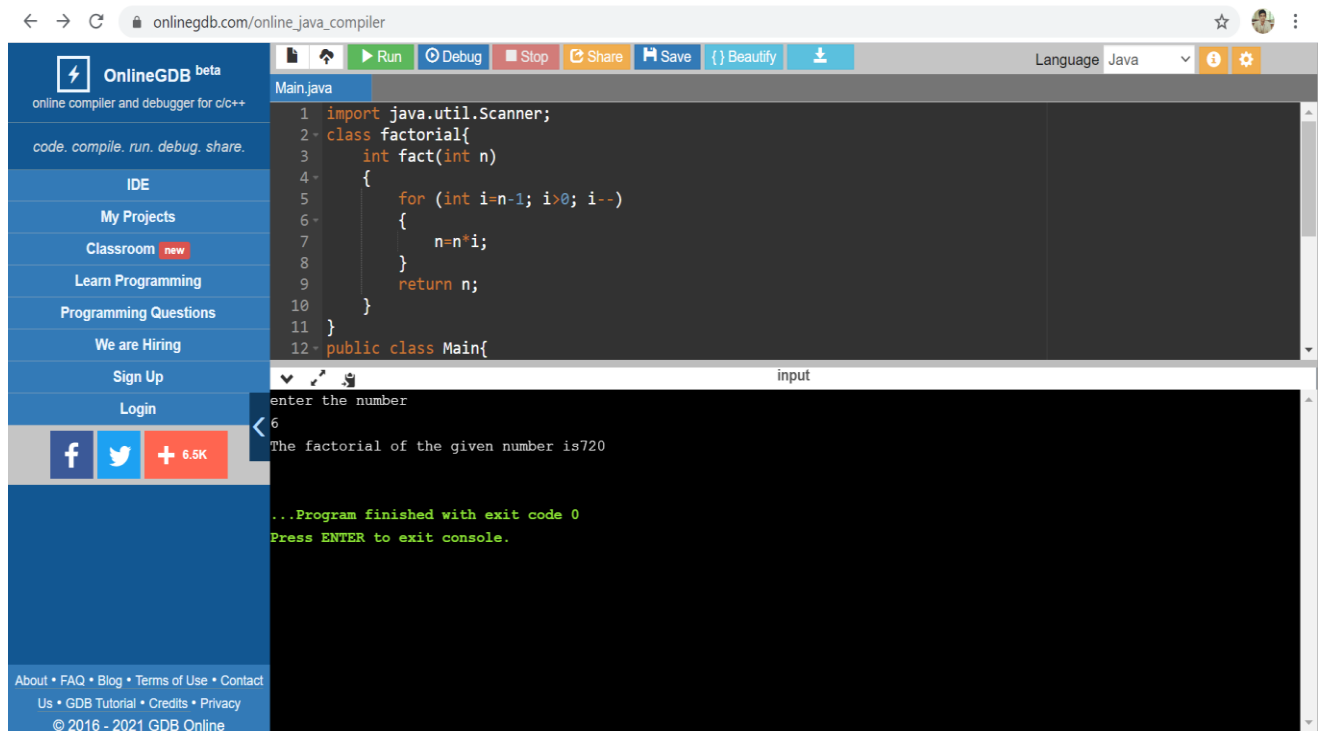
        int res=f1.fact(n);

        System.out.println("The factorial of the given number is" + (res));

    }

}
```

## OUTPUT:



The screenshot displays the OnlineGDB web interface. The browser's address bar shows the URL `onlinegdb.com/online_java_compiler`. The interface includes a top navigation bar with buttons for Run, Debug, Stop, Share, Save, and Beautify. A left sidebar contains links to IDE, My Projects, Classroom, Learn Programming, Programming Questions, We are Hiring, Sign Up, and Login. The main editor area shows a Java file named `Main.java` with the following code:

```
1 import java.util.Scanner;
2 class factorial{
3     int fact(int n)
4     {
5         for (int i=n-1; i>0; i--)
6         {
7             n=n*i;
8         }
9         return n;
10    }
11 }
12 public class Main{
```

Below the code editor is a console window labeled "input" showing the program's execution:

```
enter the number
6
The factorial of the given number is720

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

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#### 4. Write a java program to print Fibonacci series

##### CODE:

```
class Main{

static int n1=0,n2=1,n3=0;

static void printFibonacci(int count){

    if(count>0){

        n3 = n1 + n2;

        n1 = n2;

        n2 = n3;

        System.out.print(" "+n3);

        printFibonacci(count-1);

    }

}

public static void main(String args[]){

int count=20;

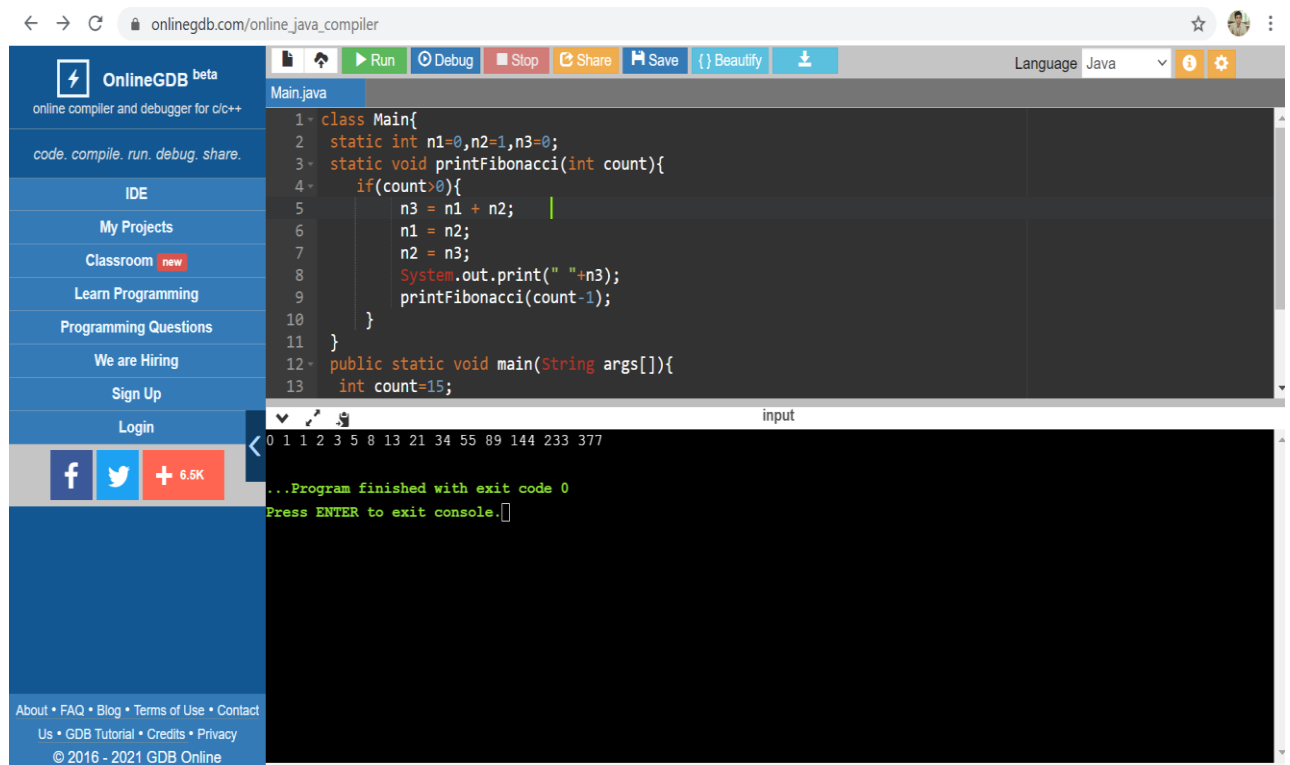
System.out.print(n1+" "+n2);//printing 0 and 1

printFibonacci(count-2);//n-2 because 2 numbers are already printed

}

}
```

## OUTPUT:



The screenshot displays the OnlineGDB web interface. The browser address bar shows the URL `onlinegdb.com/online_java_compiler`. The interface includes a sidebar on the left with navigation links: IDE, My Projects, Classroom (marked as new), Learn Programming, Programming Questions, We are Hiring, Sign Up, and Login. Below these are social media icons for Facebook and Twitter, and a '+ 6.5K' badge. The main area features a toolbar with buttons for Run, Debug, Stop, Share, Save, Beautify, and Download. The language is set to Java. The code editor shows a Java program named `Main.java` that calculates the 15th Fibonacci number. The output console displays the sequence of Fibonacci numbers from 0 to 15, followed by the message '...Program finished with exit code 0' and a prompt to press ENTER to exit the console.

```
1 class Main{
2     static int n1=0,n2=1,n3=0;
3     static void printFibonacci(int count){
4         if(count>0){
5             n3 = n1 + n2;
6             n1 = n2;
7             n2 = n3;
8             System.out.print(" "+n3);
9             printFibonacci(count-1);
10        }
11    }
12    public static void main(String args[]){
13        int count=15;
```

input

0 1 1 2 3 5 8 13 21 34 55 89 144 233 377

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

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### 5. Write a java program finding the prime numbers between 1 to n.

#### CODE:

```
import java.util.Scanner;

class Main
{
    public static void main(String arg[])
    {

        System.out.println("Enter a number ");

        Scanner sc=new Scanner(System.in);

        int n=sc.nextInt();

        primeCal(n);

    }

    static void primeCal(int num)
    {

        int count=0;

        for(int i=1;i<=num;i++)
        {

            if(num%i==0)

            {

                count++;

            }

        }

        if(count==2)

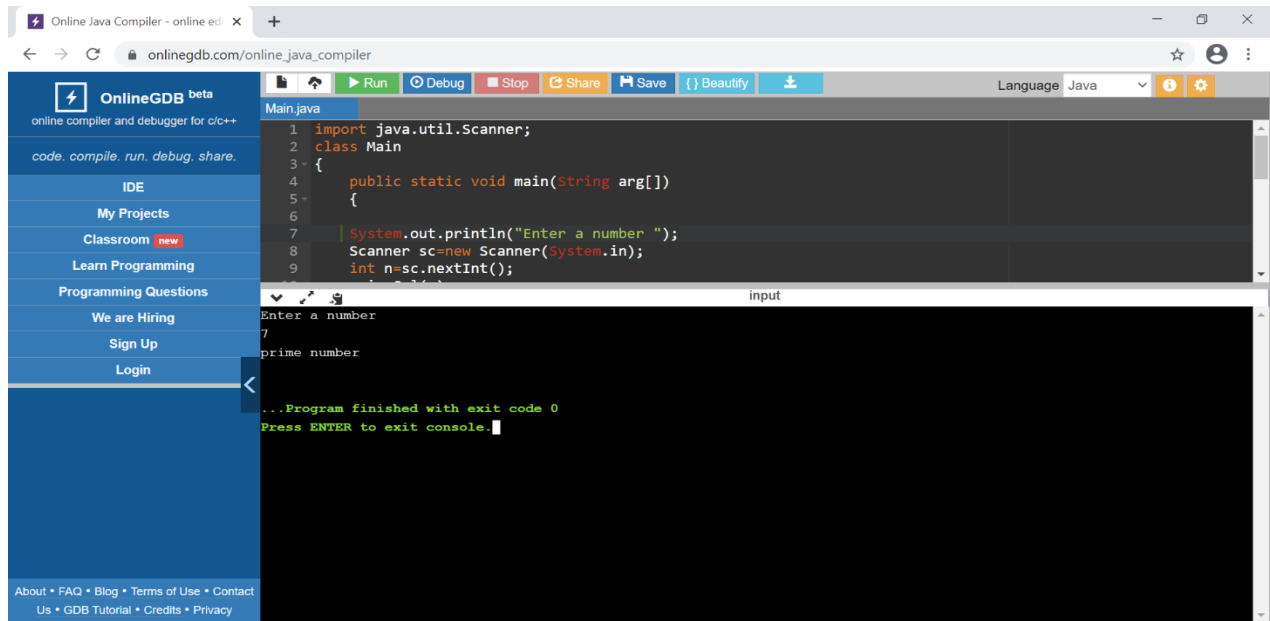
            System.out.println("prime number ");

        else
```

```
        System.out.println("Not a prime number ");
    }
}
```

## OUTPUT:

### CASE 1: [when given number is a prime number]



The screenshot shows the OnlineGDB interface. The code editor contains a Java program that prompts the user to enter a number. The input field shows the number 7. The output console shows the message "prime number" and "...Program finished with exit code 0".

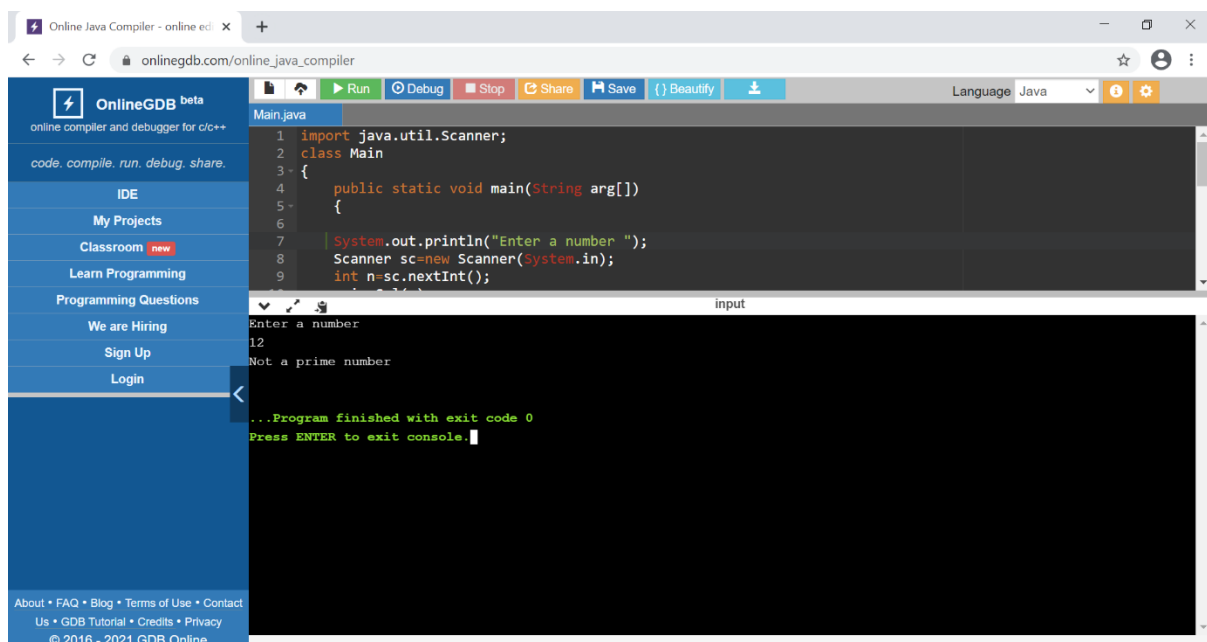
```
1 import java.util.Scanner;
2 class Main
3 {
4     public static void main(String arg[])
5     {
6         System.out.println("Enter a number ");
7         Scanner sc=new Scanner(System.in);
8         int n=sc.nextInt();
9     }
}
```

input

Enter a number  
7  
prime number

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

### CASE 2: [when given number is not a prime number]



The screenshot shows the OnlineGDB interface. The code editor contains the same Java program as in Case 1. The input field shows the number 12. The output console shows the message "Not a prime number" and "...Program finished with exit code 0".

```
1 import java.util.Scanner;
2 class Main
3 {
4     public static void main(String arg[])
5     {
6         System.out.println("Enter a number ");
7         Scanner sc=new Scanner(System.in);
8         int n=sc.nextInt();
9     }
}
```

input

Enter a number  
12  
Not a prime number

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

**6. Write a java program to count number of digits, alphabets, special character in a given string**

**CODE:**

```
import java.util.Scanner;

public class Main {

    private static Scanner sc;

    public static void main(String[] args) {

        String aldisp_str;

        int i, alph, digi, spl;

        i = alph = digi = spl = 0;

        char ch;

        sc= new Scanner(System.in);

        System.out.print("\nPlease Enter Alpha Numeric Special String = ");

        aldisp_str = sc.nextLine();

        while(i < aldisp_str.length())

        {

            ch = aldisp_str.charAt(i);

            if(ch >= 'a' && ch <= 'z' || ch >= 'A' && ch <= 'Z' ) {

                alph++;

            }

            else if(ch >= '0' && ch <= '9') {

                digi++;

            }

            else {
```

```

        spl++;

    }

    i++;

}

System.out.println("\nNumber of Alphabet Characters = " + alph);

System.out.println("Number of Digit Characters    = " + digi);

System.out.println("Number of Special Characters = " + spl);

}

}

```

## OUTPUT:

The screenshot shows the OnlineGDB web interface. The code editor contains the following Java code:

```

1 import java.util.Scanner;
2 public class Main {
3     private static Scanner sc;
4     public static void main(String[] args) {
5         String aldisp_str;
6         int i, alph, digi, spl;
7         i = alph = digi = spl = 0;
8         char ch;
9
10        // ... (code continues)

```

The input field contains the string: `MS**12CMM%19`.

The output console shows the following results:

```

Please Enter Alpha Numeric Special String = MS**12CMM%19

Number of Alphabet Characters = 5
Number of Digit Characters    = 4
Number of Special Characters = 4

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

```

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## 7. Develop a stack and queue operations using class and object.

### CODE:

```
import java.util.*;

class Main

{

static class Queue

{

    static Stack<Integer> s1 = new Stack<Integer>();

    static Stack<Integer> s2 = new Stack<Integer>();

    static void enqueue(int x)

    {

        while (!s1.isEmpty())

        {

            s2.push(s1.pop());

            //s1.pop();

        }

        s1.push(x);

        while (!s2.isEmpty())

        {

            s1.push(s2.pop());

            //s2.pop();

        }

    }

}
```

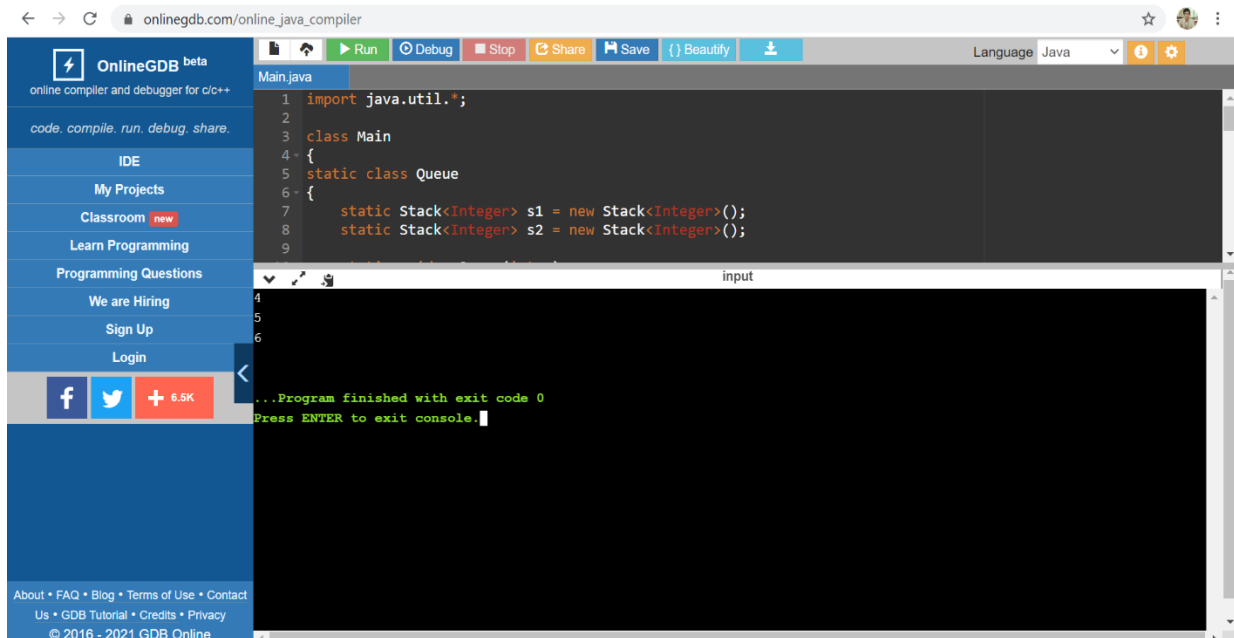
```
static int deQueue()
{
    if (s1.isEmpty())
    {
        System.out.println("Q is Empty");
        System.exit(0);
    }

    int x = s1.peek();
    s1.pop();
    return x;
}
};
```

```
public static void main(String[] args)
{
    Queue q = new Queue();
    q.enqueue(4);
    q.enqueue(5);
    q.enqueue(6);

    System.out.println(q.dequeue());
    System.out.println(q.dequeue());
    System.out.println(q.dequeue());
}
}
```

## OUTPUT:



The screenshot displays the OnlineGDB web interface. The browser's address bar shows the URL `onlinegdb.com/online_java_compiler`. The interface includes a sidebar on the left with navigation links such as "IDE", "My Projects", "Classroom", "Learn Programming", "Programming Questions", "We are Hiring", "Sign Up", and "Login". The main area is divided into two sections: a code editor and an output console. The code editor, titled "Main.java", contains the following Java code:

```
1 import java.util.*;
2
3 class Main
4 {
5     static class Queue
6     {
7         static Stack<Integer> s1 = new Stack<Integer>();
8         static Stack<Integer> s2 = new Stack<Integer>();
9     }
10 }
```

The output console, titled "input", shows the result of the program execution:

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

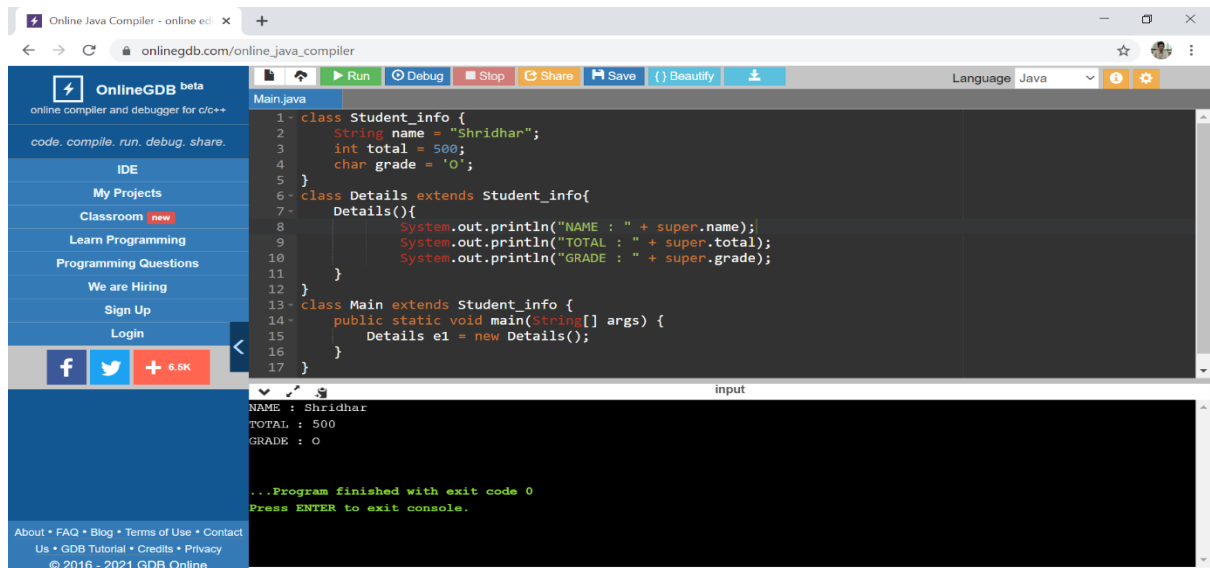
**8. Write java program to calculate and display Student Grades, total and percentage of five subject using inheritance, super keyword and constructor.**

**CODE:**

```
class Student_info {  
    String name = "Shridhar";  
    int total = 500;  
    char grade = 'O';  
}  
  
class Details extends Student_info{  
    Details(){  
        System.out.println("NAME : " + super.name);  
        System.out.println("TOTAL : " + super.total);  
        System.out.println("GRADE : " + super.grade);  
    }  
}  
  
class Main extends Student_info {  
    public static void main(String[] args) {  
        Details e1 = new Details();  
    }  
}
```



## OUTPUT:



The screenshot displays the OnlineGDB web interface. The top navigation bar includes links for 'Run', 'Debug', 'Stop', 'Share', 'Save', 'Beautify', and 'Language' (set to Java). The left sidebar contains a menu with options like 'IDE', 'My Projects', 'Classroom', 'Learn Programming', 'Programming Questions', 'We are Hiring', 'Sign Up', and 'Login'. The main editor area shows a Java file named 'Main.java' with the following code:

```
1 class Student_info {
2     String name = "Shridhar";
3     int total = 500;
4     char grade = 'O';
5 }
6 class Details extends Student_info{
7     Details(){
8         System.out.println("NAME : " + super.name);
9         System.out.println("TOTAL : " + super.total);
10        System.out.println("GRADE : " + super.grade);
11    }
12 }
13 class Main extends Student_info {
14     public static void main(String[] args) {
15         Details e1 = new Details();
16     }
17 }
```

Below the code editor, the output console shows the program's execution results:

```
NAME : Shridhar
TOTAL : 500
GRADE : O

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

The footer of the page contains links for 'About', 'FAQ', 'Blog', 'Terms of Use', 'Contact Us', 'GDB Tutorial', 'Credits', 'Privacy', and a copyright notice for 2016-2021 GDB Online.

## 9. Write a java program to print area of rectangle, triangle and circle using polymorphism

### CODE:

```
import java.util.*;

abstract class Shape {
    int length, breadth, radius;

    Scanner input = new Scanner(System.in);

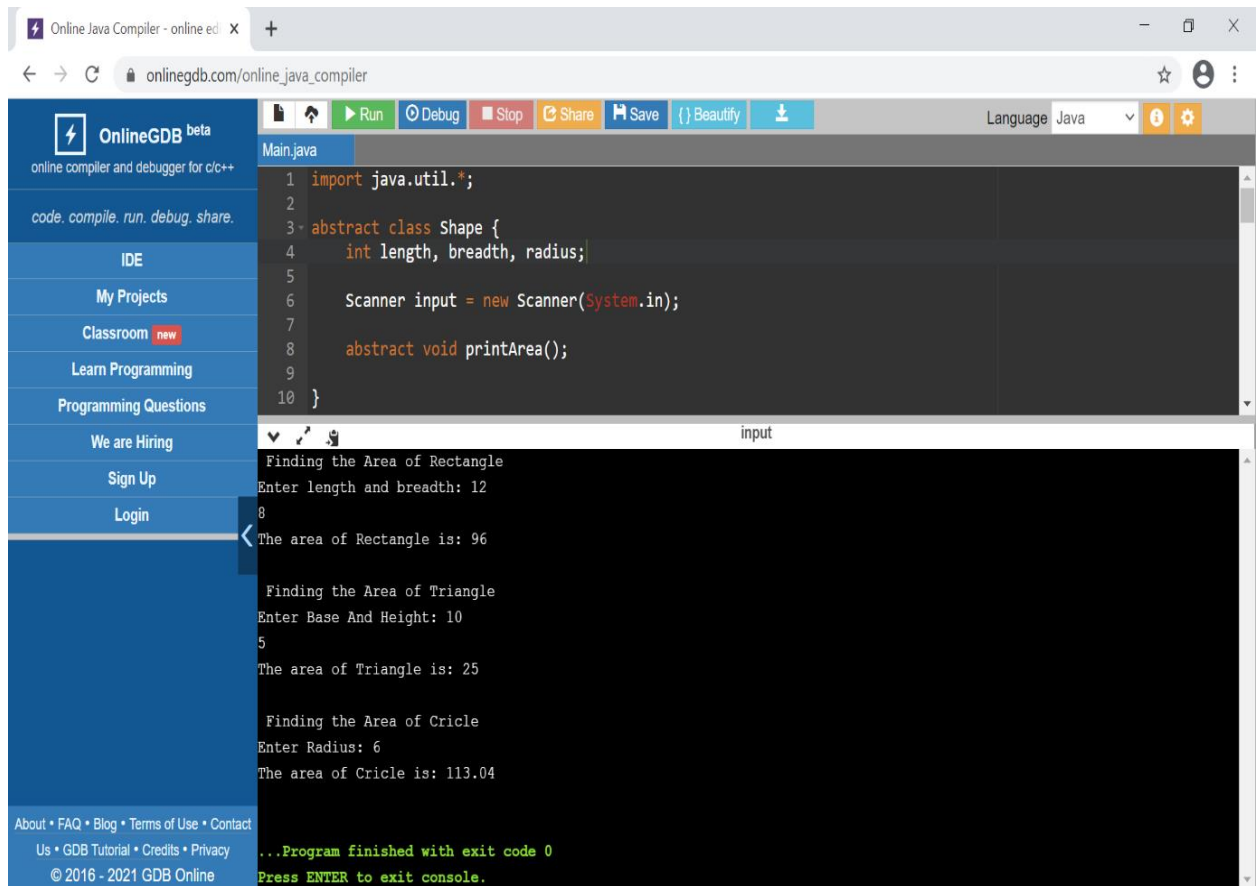
    abstract void printArea();
}

class Rectangle extends Shape {
    void printArea() {
        System.out.println(" Finding the Area of Rectangle");
        System.out.print("Enter length and breadth: ");
        length = input.nextInt();
        breadth = input.nextInt();
        System.out.println("The area of Rectangle is: " + length * breadth);
    }
}

class Triangle extends Shape {
    void printArea() {
        System.out.println("\n Finding the Area of Triangle");
        System.out.print("Enter Base And Height: ");
        length = input.nextInt();
        breadth = input.nextInt();
        System.out.println("The area of Triangle is: " + (length * breadth) / 2);
    }
}
```

```
    }  
}  
  
class Cricle extends Shape {  
    void printArea() {  
        System.out.println("\n Finding the Area of Cricle");  
        System.out.print("Enter Radius: ");  
        radius = input.nextInt();  
        System.out.println("The area of Cricle is: " + 3.14f * radius * radius);  
    }  
}  
  
public class Main{  
    public static void main(String[] args) {  
        Rectangle rec = new Rectangle();  
        rec.printArea();  
        Triangle tri = new Triangle();  
        tri.printArea();  
        Cricle cri = new Cricle();  
        cri.printArea();  
    }  
}
```

## OUTPUT:



The screenshot displays the OnlineGDB web IDE interface. On the left is a blue sidebar with navigation links: IDE, My Projects, Classroom (marked 'new'), Learn Programming, Programming Questions, We are Hiring, Sign Up, and Login. The main editor area shows a Java file named 'Main.java' with the following code:

```
1 import java.util.*;  
2  
3 abstract class Shape {  
4     int length, breadth, radius;  
5  
6     Scanner input = new Scanner(System.in);  
7  
8     abstract void printArea();  
9  
10 }
```

Below the code editor is a console window titled 'input' showing the program's execution output:

```
Finding the Area of Rectangle  
Enter length and breadth: 12  
8  
The area of Rectangle is: 96  
  
Finding the Area of Triangle  
Enter Base And Height: 10  
5  
The area of Triangle is: 25  
  
Finding the Area of Cricle  
Enter Radius: 6  
The area of Cricle is: 113.04  
  
...Program finished with exit code 0  
Press ENTER to exit console.
```

The footer of the IDE contains links for About, FAQ, Blog, Terms of Use, and Contact, along with copyright information: © 2016 - 2021 GDB Online.

**10. Write a java program to calculate factorial of given number and print Fibonacci series using interface**

**CODE:**

```
import java.util.Scanner;

interface fact {

    public void factorial();

}

interface fibo {

    public void fib();

}

class Interface implements fact, fibo {

    int i, temp, a = 0, b = 1, fa, n;

    Interface() {

        System.out.println("Enter a number");

        Scanner s = new Scanner(System.in);

        n = s.nextInt();

        s.close();

    }

    public void factorial() {

        System.out.print("Fibonacci : ");

        System.out.print("1 ");

        for (i = 0; i < n - 1; i++) {

            temp = a + b;

            System.out.print(temp + " ");
```

```
        a = b;

        b = temp;

    }

}

public void fib() {

    int fa = 1;

    for (int i = n; i >= 1; i--)

        fa = fa * i;

    System.out.println("\nFactorial of the number : " + fa);

}

}

public class Main {

    public static void main(String args[]) {

        Interface i = new Interface();

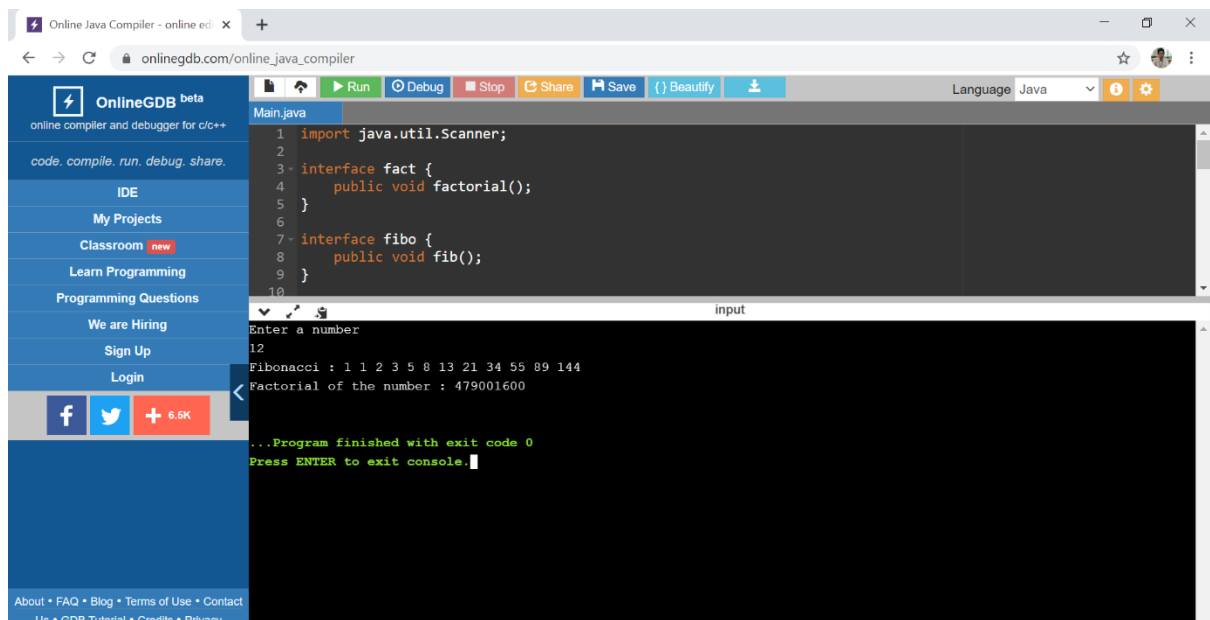
        i.factorial();

        i.fib();

    }

}
```

## OUTPUT:



The screenshot displays the OnlineGDB web interface. The left sidebar contains navigation links: IDE, My Projects, Classroom (marked 'new'), Learn Programming, Programming Questions, We are Hiring, Sign Up, and Login. Below these are social media icons for Facebook and Twitter, and a '+ 6.8K' button. The main editor area shows a Java file named 'Main.java' with the following code:

```
1 import java.util.Scanner;  
2  
3 interface fact {  
4     public void factorial();  
5 }  
6  
7 interface fibo {  
8     public void fib();  
9 }  
10
```

The output console at the bottom shows the program's execution:

```
Enter a number  
12  
Fibonacci : 1 1 2 3 5 8 13 21 34 55 89 144  
Factorial of the number : 479001600  
  
...Program finished with exit code 0  
Press ENTER to exit console.
```