

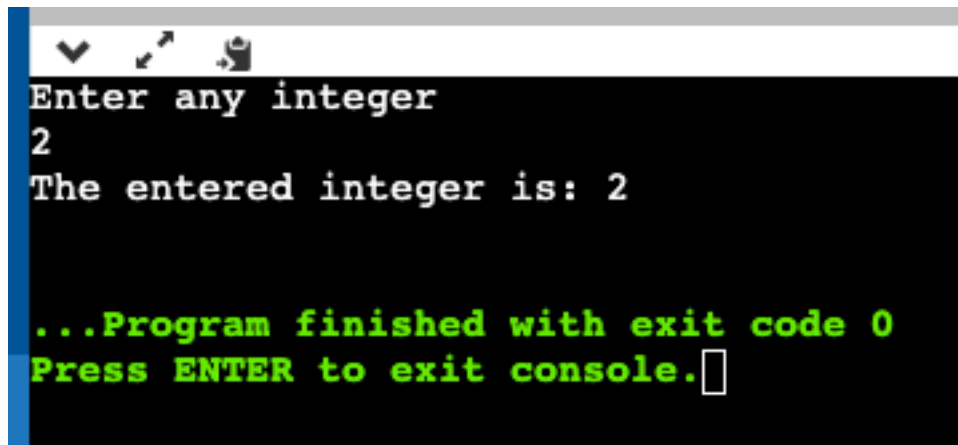
JAVA PROGRAMMING LAB

PROGRAM 1-20

1. To print an integer entered by the user:-

```
import java.util.Scanner;
```

```
public class Main{  
    public static void main(String args[]){  
  
        System.out.println("Enter any integer");  
        Scanner sc=new Scanner(System.in);  
        int a=sc.nextInt();  
        System.out.println("The entered integer is: "+a);  
    }  
}
```

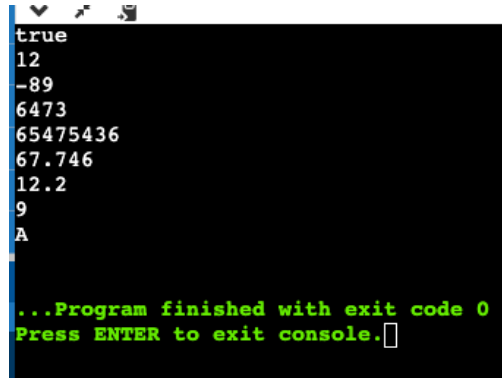
A screenshot of a Java IDE's console window. The window has a title bar with standard OS icons. The console output is as follows: "Enter any integer" followed by the user input "2" on the next line. Then, "The entered integer is: 2" is printed. At the bottom, a green message states "...Program finished with exit code 0" and "Press ENTER to exit console." with a cursor icon at the end of the line.

```
Enter any integer  
2  
The entered integer is: 2  
  
...Program finished with exit code 0  
Press ENTER to exit console.
```

2. Write a program to demonstrate the usage of primitive data types—Boolean, char, byte, short, Int, long, float and double:-

```
public class Main{  
    public static void main(String args[]){  
  
        boolean a=true;  
        System.out.println(a);  
        byte b=12;  
        System.out.println(b);  
        short c=-89;  
        System.out.println(c);  
        int d=6473;  
        System.out.println(d);  
        long e=65475436;  
        System.out.println(e);  
        double f=67.746;  
        System.out.println(f);  
        float g=12.2f;  
        System.out.println(g);  
        char h='9';  
        System.out.println(h);  
        char i=65;  
        System.out.println(i);  
  
    }
```

}



```
true
12
-89
6473
65475436
67.746
12.2
9
A

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

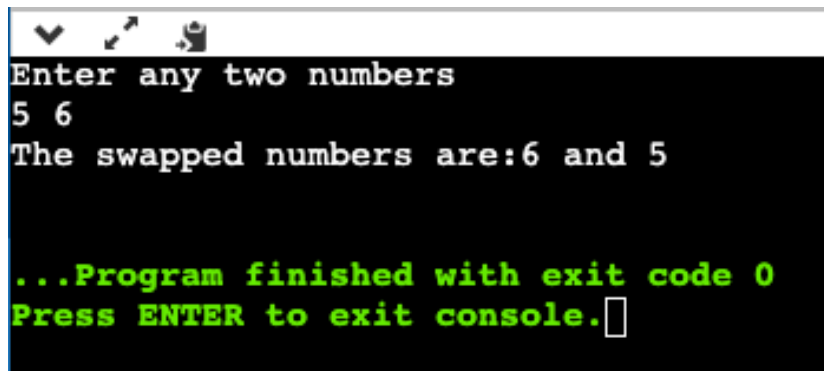
3. *numbers variable:-*

*Swapping two
using temporary*

```
import java.util.Scanner;
public class Main{
    public static void main(String args[]){

        System.out.println("Enter any two numbers");
        Scanner sc=new Scanner(System.in);
        int a=sc.nextInt();
        int b=sc.nextInt();
        int c;
        c=a;
        a=b;
        b=c;
        System.out.println("The swapped numbers are:"+a+"
        "+ "and" + " "+b);
    }
}
```

}

A screenshot of a Java console application window. The window has a title bar with standard OS icons. The console text is as follows:
Enter any two numbers
5 6
The swapped numbers are:6 and 5

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

4.Check whether a number is even or odd using if..else statement:-

```
import java.util.Scanner;
```

```
public class Main{  
    public static void main(String args[]){  
        System.out.println("Enter any number: ");  
        Scanner s=new Scanner(System.in);  
        int a=s.nextInt();  
        if(a%2==0){  
            System.out.println("The number is even.");  
        }  
        else{  
            System.out.println("The number is odd");  
        }  
    }  
}
```

```
Enter any number:
45
The number is odd

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

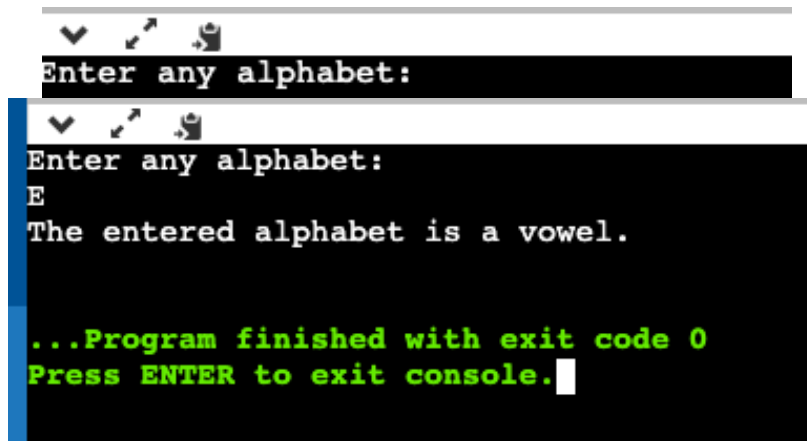
...Program finished with exit code 0
Press ENTER to exit console.
```

5. Check whether an alphabet is a vowel or a consonant using if...else statement:-

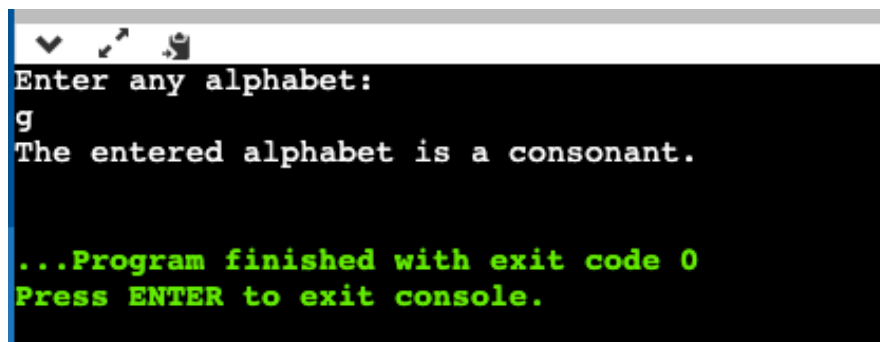
```
import java.util.Scanner;
```

```
public class Main{
    public static void main(String args[]){
        System.out.println("Enter any alphabet: ");
        Scanner sc=new Scanner(System.in);
        char a=sc.next().charAt(0);
        if(a=='a' || a=='e' || a=='i' || a=='o' || a=='u'){
            System.out.println("The entered alphabet is a vowel.");
        }
        else if(a=='A' || a=='E' || a=='I' || a=='O' || a=='U'){
            System.out.println("The entered alphabet is a vowel.");
        }
    }
}
```

```
}  
else{  
    System.out.println("The entered alphabet is a  
consonant.");  
}  
}
```



```
Enter any alphabet:  
E  
The entered alphabet is a vowel.  
  
...Program finished with exit code 0  
Press ENTER to exit console.
```

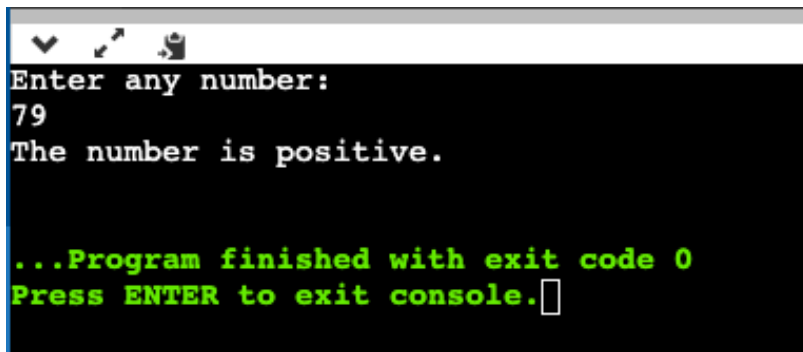


```
Enter any alphabet:  
g  
The entered alphabet is a consonant.  
  
...Program finished with exit code 0  
Press ENTER to exit console.
```

6. Check if a number is positive or negative using if..else.

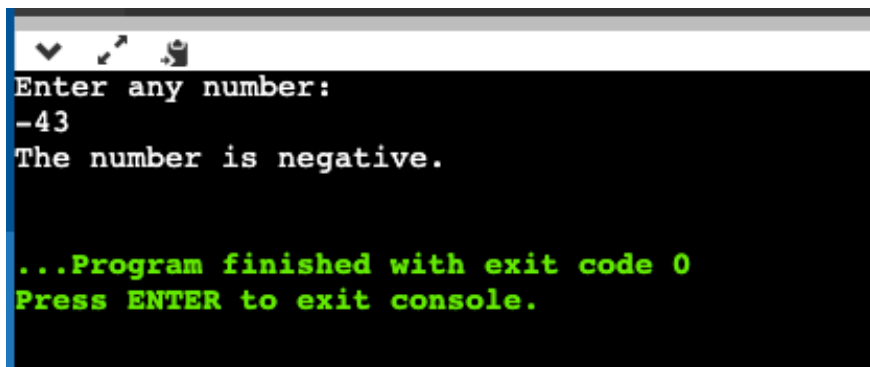
```
import java.util.Scanner;  
  
public class Main{  
    public static void main(String args[]){
```

```
System.out.println("Enter any number: ");
Scanner ob1=new Scanner(System.in);
int a=ob1.nextInt();
if(a>0){
    System.out.println("The number is positive.");
}else if(a<0){
    System.out.println("The number is negative.");
}
else{
    System.out.println("Zero");
}
}
```



```
Enter any number:
79
The number is positive.

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



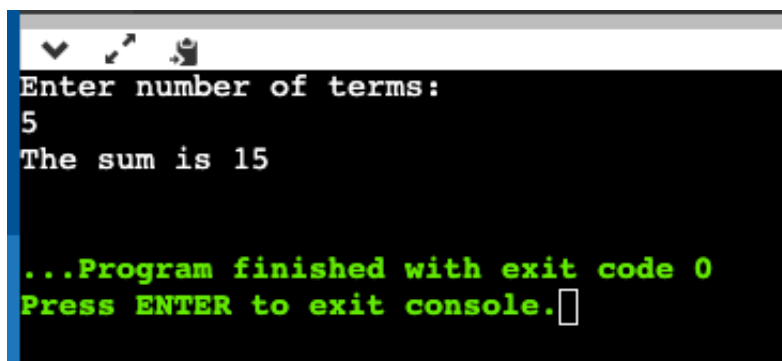
```
Enter any number:
-43
The number is negative.

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

7. Sum of natural numbers using for loop:-

```
import java.util.Scanner;

public class Main{
    public static void main(String args[]){
        System.out.println("Enter number of terms: ");
        Scanner sc=new Scanner(System.in);
        int n=sc.nextInt();
        int sum=0;
        for(int i=0;i<=n;i++){
            sum+=i;
        }
        System.out.println("The sum is "+sum);
    }
}
```



```
Enter number of terms:
5
The sum is 15

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

8. Find factorial of a number using for loop:-

```
import java.util.Scanner;

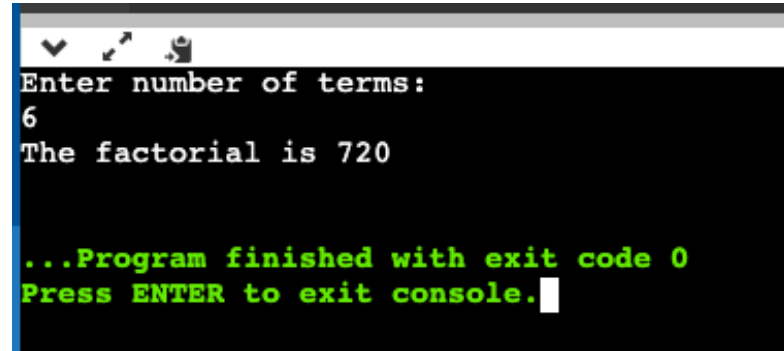
public class Main{
    public static void main(String args[]){
        System.out.println("Enter number of terms: ");
        Scanner sc=new Scanner(System.in);
        int n=sc.nextInt();
```



```

    int fact=1;
    for(int i=1;i<=n;i++){
        fact*=i;
    }
    System.out.println("The factorial is "+fact);
}
}

```



```

Enter number of terms:
6
The factorial is 720

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

```

9. *Generate multiplication table using for loop:-*

```

import java.util.Scanner;

public class Main{
    public static void main(String args[]){
        System.out.println("Enter the number whose table you
want to print:");
        Scanner sc=new Scanner(System.in);
        int n=sc.nextInt();
        for(int i=1;i<=10;i++){

            System.out.println(n+" "+"*"+" " +i+" "+"=" +n*i);
        }
    }
}

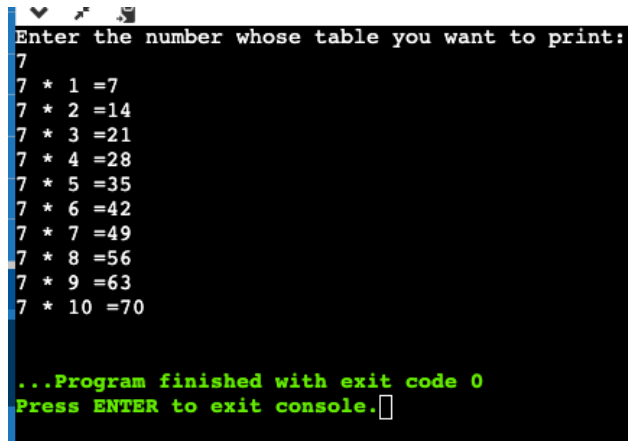
```

```
}  
}
```

10. Display uppercased using for

```
import  
java.util.Scanner;
```

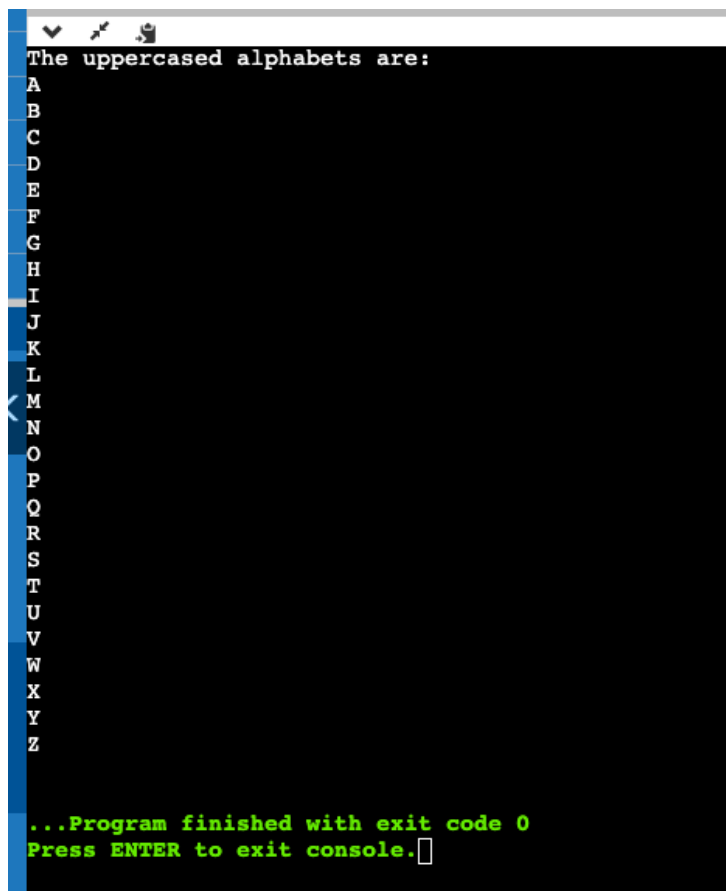
```
public class Main{  
    public static void main(String args[]){  
        System.out.println("The uppercased alphabets are:");  
        for(char i='A';i<='Z';i++){  
  
            System.out.println(i);  
        }  
    }  
}
```



```
Enter the number whose table you want to print:  
7  
7 * 1 =7  
7 * 2 =14  
7 * 3 =21  
7 * 4 =28  
7 * 5 =35  
7 * 6 =42  
7 * 7 =49  
7 * 8 =56  
7 * 9 =63  
7 * 10 =70  
  
...Program finished with exit code 0  
Press ENTER to exit console.
```

**alphabet
loop:-**

```
}  
}
```



```
The uppercased alphabets are:  
A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P  
Q  
R  
S  
T  
U  
V  
W  
X  
Y  
Z  
  
...Program finished with exit code 0  
Press ENTER to exit console.
```

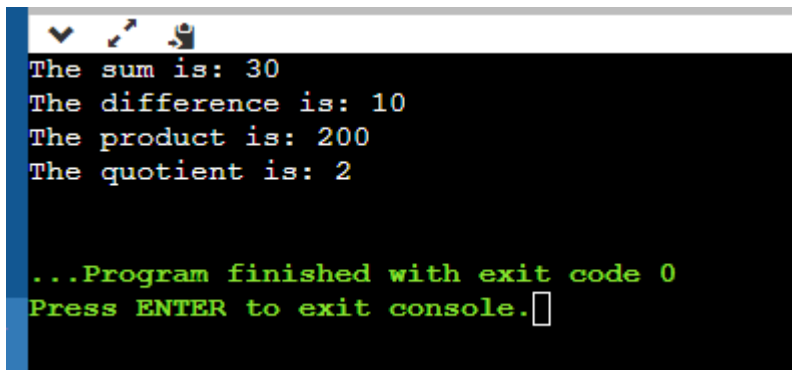
Calculator:-

```
public class Calculator{  
    private int a;  
    private int b;  
    Calculator(int i,int j){  
        this.a=i;  
        this.b=j;  
    }  
    public int add(){  
        return (a+b);  
    }  
    public int subtract(){  
        return(a-b);  
    }  
}
```

```

    }
    public int mult(){
        return(a*b);
    }
    public int div(){
        return (a/b);
    }
    public static void main(String args[]){
        Calculator c=new Calculator(20,10);
        System.out.println("The sum is: "+ c.add());
        System.out.println("The difference is: "+c.subtract());
        System.out.println("The product is: "+c.mult());
        System.out.println("The quotient is: "+c.div());
    }
}

```



```

The sum is: 30
The difference is: 10
The product is: 200
The quotient is: 2

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

```

11. Find GCD of two numbers using for loop and if statement:-

```

import java.util.Scanner;

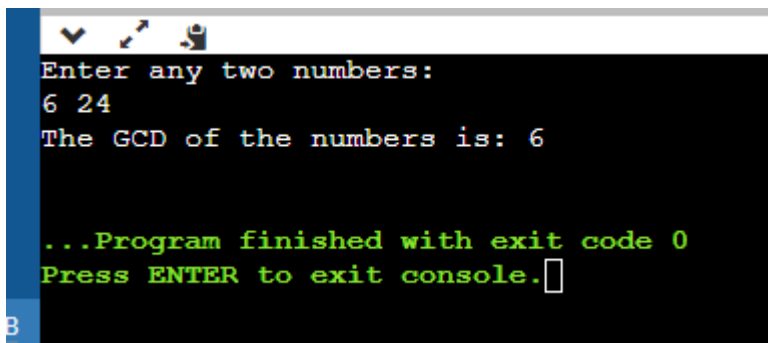
public class A{
    public static void main(String args[]){
        System.out.println("Enter any two numbers: ");
    }
}

```

```

Scanner sc=new Scanner(System.in);
int a=sc.nextInt();
int b=sc.nextInt();
int gcd=1;
for(int i=1;i<=a&& i<=b;i++){
    if(a%i==0&&b%i==0){
        gcd=i;
    }
}
System.out.println("The GCD of the numbers is: "+ gcd);
}
}

```



```

Enter any two numbers:
6 24
The GCD of the numbers is: 6

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

```

12. Program to find the reverse of a number:-

```

import java.util.Scanner;

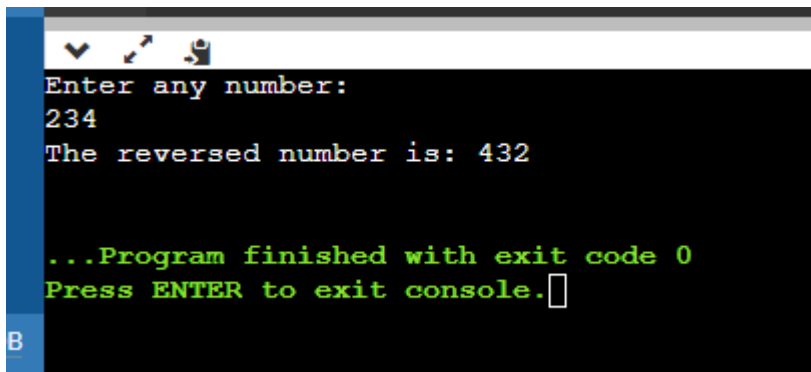
public class A{
    public static void main(String args[]){
        System.out.println("Enter any number: ");
        Scanner sc=new Scanner(System.in);
        int n=sc.nextInt();
        int rev=0;
        while(n>0){
            int a=n%10;
            n=n/10;

```

```

        rev=(rev*10)+a;
    }
    System.out.println("The reversed number is: "+rev);
}
}

```



The screenshot shows a console window with the following text:

```

Enter any number:
234
The reversed number is: 432

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

```

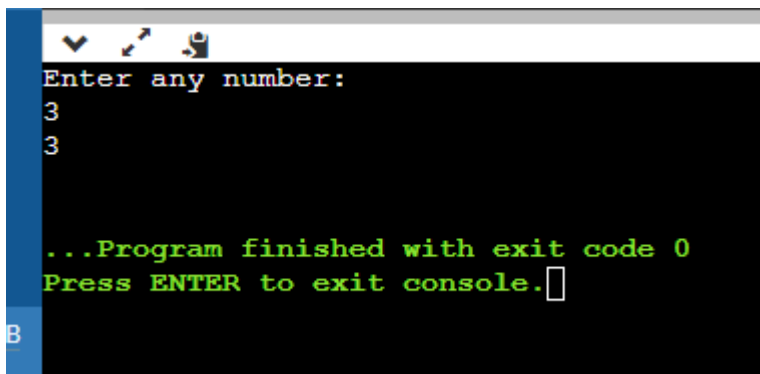
18. Demonstrate the use of Scanner class for taking input/output from user:-

```

import java.util.Scanner;

public class A{
    public static void main(String args[]){
        System.out.println("Enter any number: ");
        Scanner sc=new Scanner(System.in);
        int n=sc.nextInt();
        System.out.println(n);
    }
}

```

A screenshot of a Java IDE's console window. The window has a dark background with light-colored text. At the top, there are three small icons: a checkmark, a magnifying glass, and a person. The text in the console reads: "Enter any number:", followed by the user input "3" on the next line, and another "3" on the line below. Then, it says "...Program finished with exit code 0" and "Press ENTER to exit console." with a cursor. A small blue tab with the letter "B" is visible on the left side of the console window.

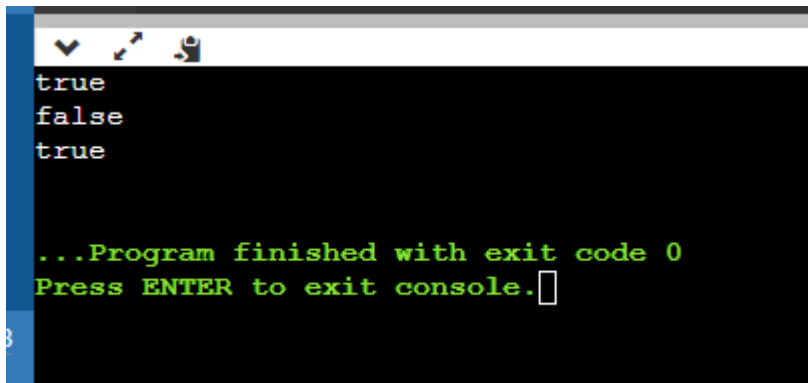
```
Enter any number:
3
3

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

19. *Light program:-*

```
import java.util.Scanner;
```

```
public class Light{
    boolean isOn;
    void switchOn(){
        isOn=true;
        System.out.println(isOn);
    }
    void switchOff(){
        isOn=false;
        System.out.println(isOn);
    }
    public static void main(String args[]){
        Light led=new Light();
        Light halogen=new Light();
        led.switchOn();
        halogen.switchOff();
        System.out.println(led.isOn);
    }
}
```



```
true
false
true

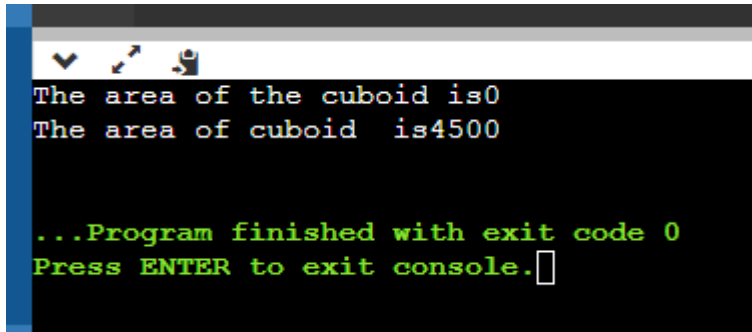
...Program finished with exit code 0
Press ENTER to exit console.
```

20. Box Program:-

```
public class Box{
    private int height;
    private int length;
    private int breadth;
    Box(){
        height=0;
        length=0;
        breadth=0;
    }
    Box(int height, int length, int breadth){
        this.height=height;
        this.length=length;
        this.breadth=breadth;
    }
    public int Volume(){
        return(length*breadth*height);
    }
    public static void main(String args[]){
        Box cuboid1=new Box();
        System.out.println("The area of the cuboid is" +
cuboid1.Volume());
        Box cuboid2=new Box(10,15,30);
```



```
        System.out.println("The area of cuboid is"+
cuboid2.Volume());
    }
}
```

A screenshot of a Java IDE's console window. The window has a dark background with a light blue title bar. The output text is as follows:

```
The area of the cuboid is0
The area of cuboid  is4500

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