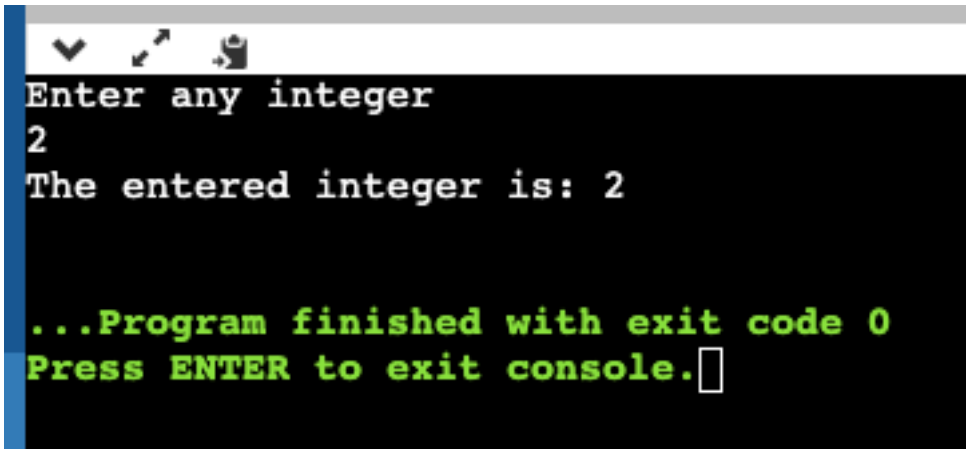
JAVA PROGRAMMING LAB PROGRAM 1-20

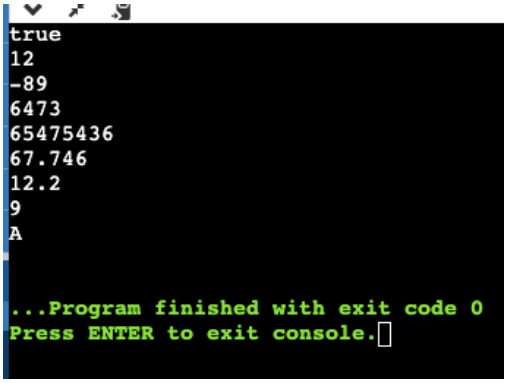
1. To print an integer entered by the user:-

```
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);
    }
}
```



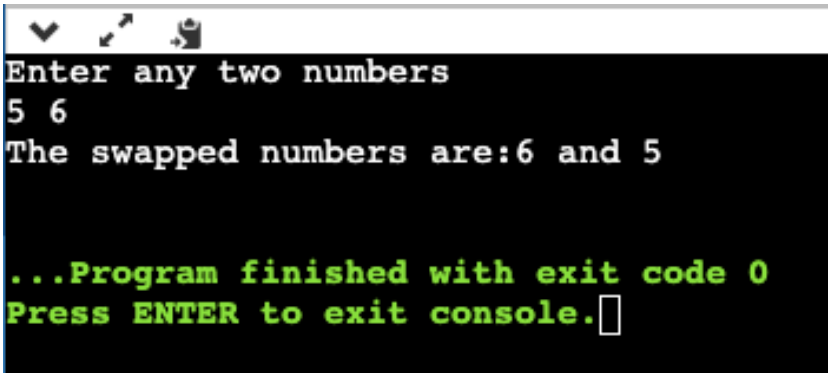
2. Write a program to demonstrate the usage of primitive data types—Boolean, char, byte, short, Int, long, float and double:-

```
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);

    }
}
```



3. Swapping two numbers using temporary variable:-

```
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);
    }
}
```



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

```
import java.util.Scanner;

public class Main{
```

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


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

```
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.");
    }
```

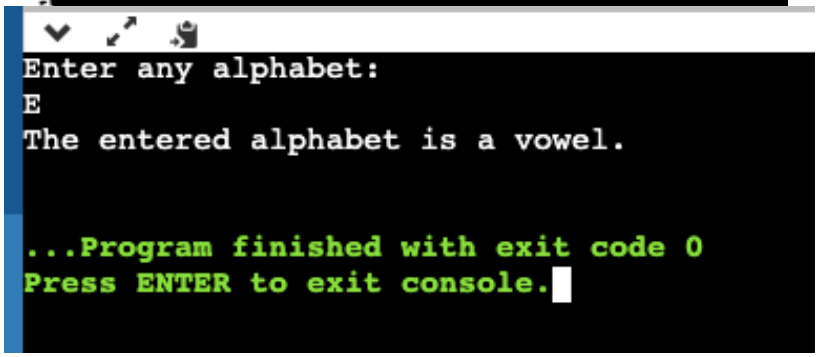
```
Enter any number:
56
The number is even.


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

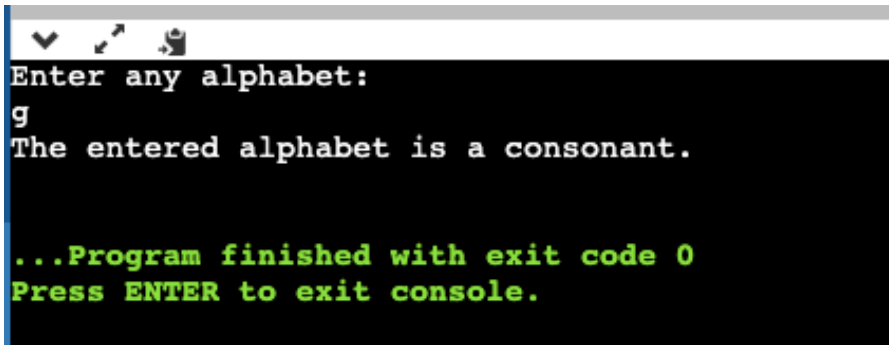
```
    else{
        System.out.println("The number is odd");
    }
  }
}
```

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[]){
```

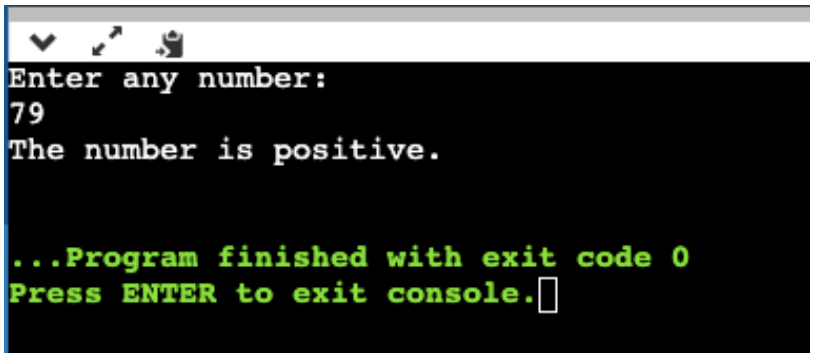
```
        System.out.println("Enter any alphabet: ");
        Scanner sc=new Scanner(System.in);
        char a=sc.next().charAt(0);
        if(a=='a'||a=='e'||a=='i'||a=='o'||a=='u'){
            System.out.println("The entered alphabet is a vowel.");
        }
        else if(a=='A'||a=='E'||a=='I'||a=='O'||a=='U'){
            System.out.println("The entered alphabet is a vowel.");
        }
        else{
            System.out.println("The entered alphabet is a
consonant.");
    }
}
```

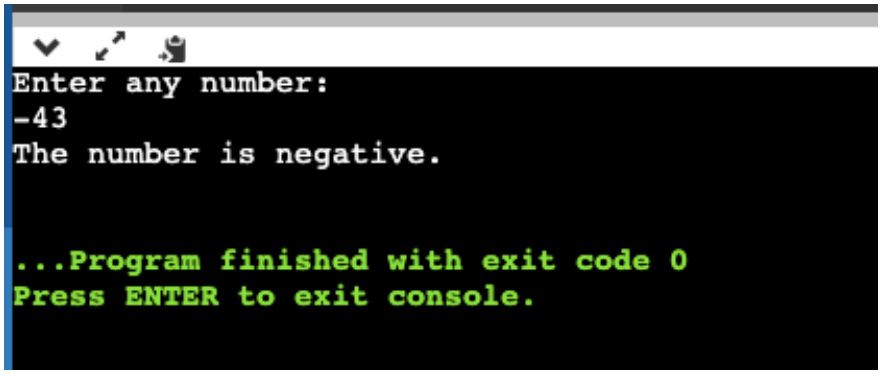




6. Check if a number is positive or negative using if..else.

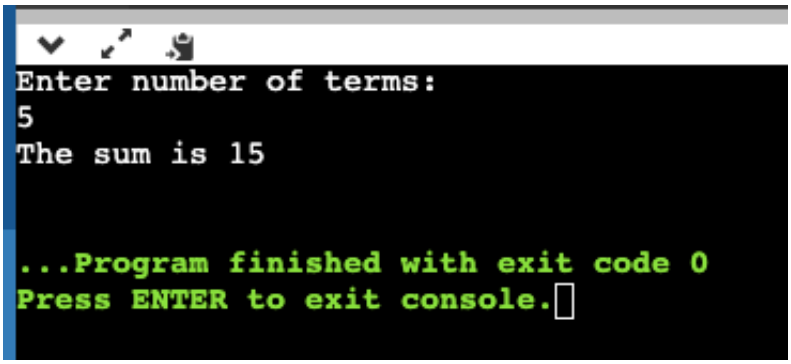
```
import java.util.Scanner;

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");
        }
    }
}
```





7. Sum of natural numbers using for loop:-

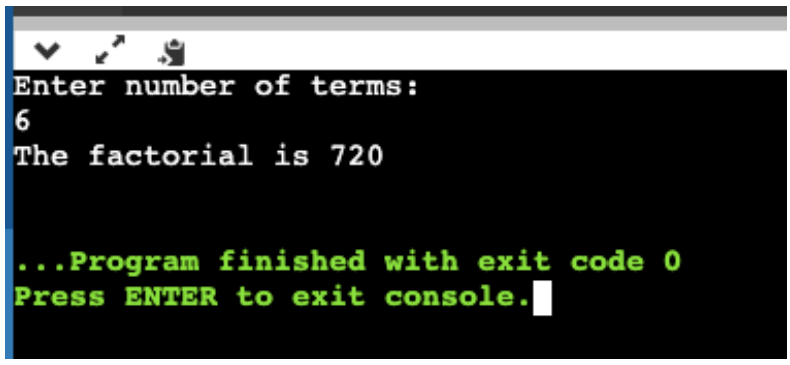
```
import java.util.Scanner;

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);
    }
}
```



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

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

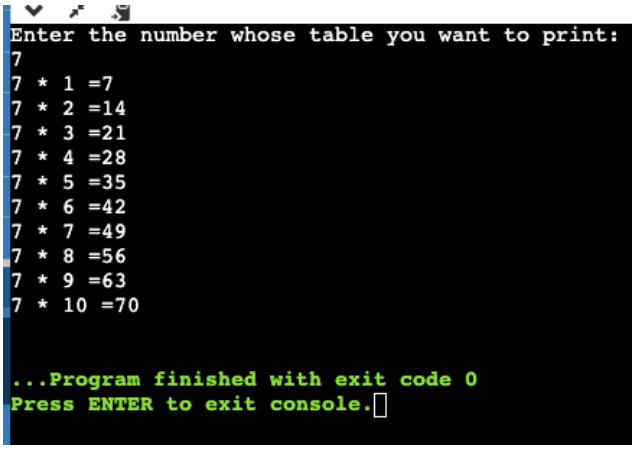
```
public class Main{
    public static void main(String args[]){
        System.out.println("Enter number of terms: ");
        Scanner sc=new Scanner(System.in);
        int n=sc.nextInt();
        int fact=1;
        for(int i=1;i<=n;i++){
            fact*=i;
        }
        System.out.println("The factorial is "+fact);
    }
}
```



9. Generate multiplication table using for loop:-

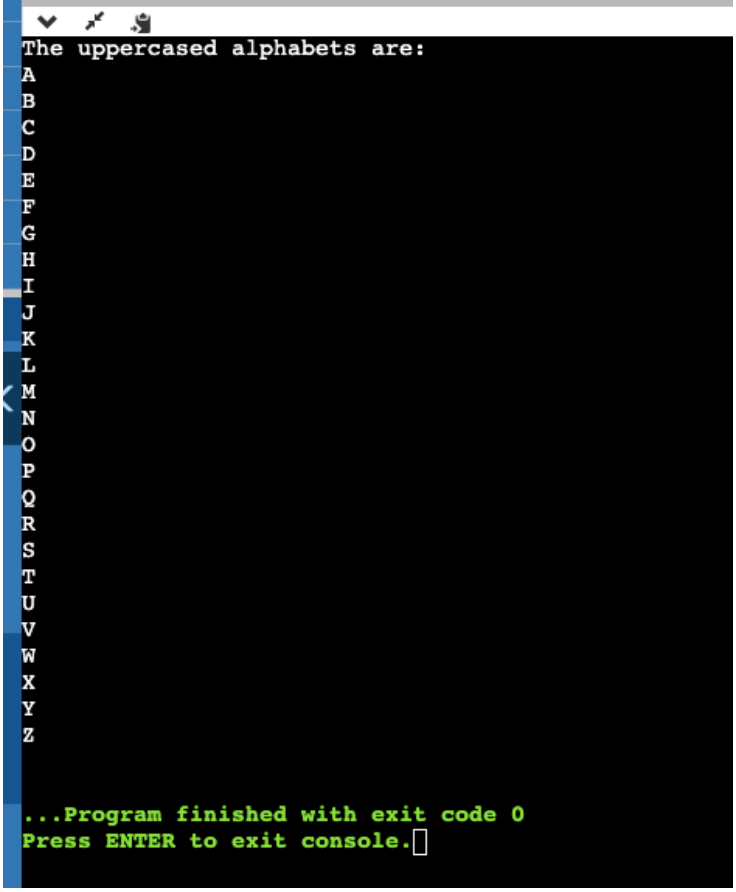
```
import java.util.Scanner;

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 alphabet using for loop:-

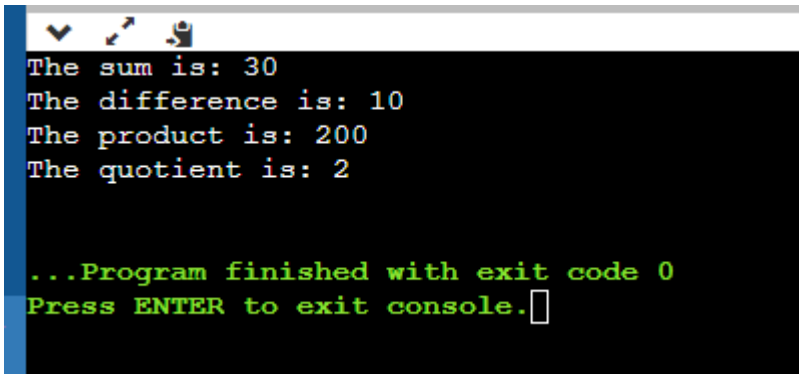
```
import java.util.Scanner;

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);
        }
    }
}
```



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);
    }
```

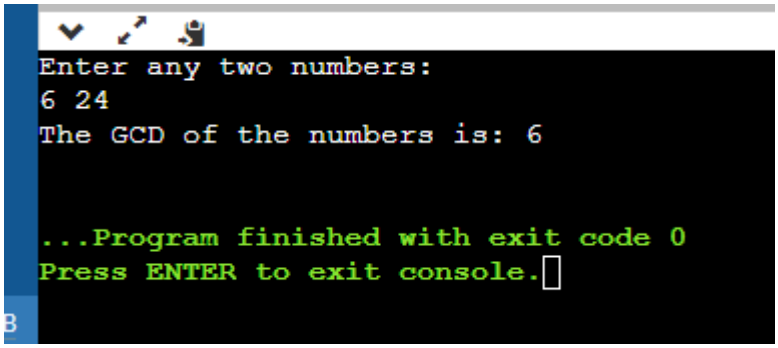
```
    public static void main(String args[]){
        Calculator c=new Calculator(20,10);
        System.out.println("The sum is: "+ c.add());
        System.out.println("The difference is: "+c.subtract());
        System.out.println("The product is: "+c.mult());
        System.out.println("The quotient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



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

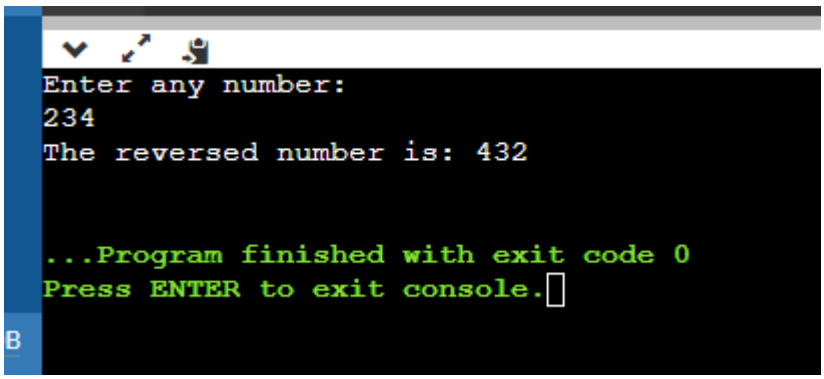
```
import java.util.Scanner;

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);
    }
}
```



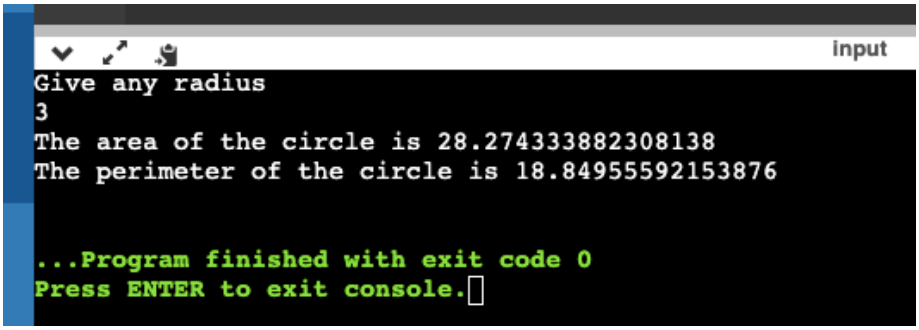
12. Program to find the reverse of a number:-

```
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);
    }
}
```



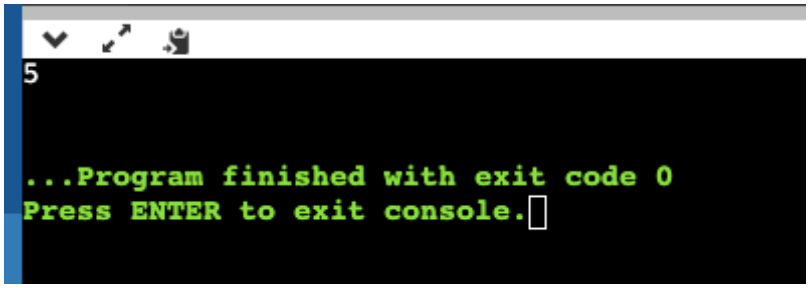
13. Demonstrate creating a class and instance(object):-

```
import java.util.Scanner;

public class Circle{

    public static void main(String args[]){
        System.out.println("Give any radius");
        Scanner ob1=new Scanner(System.in);
        int r=ob1.nextInt();

        double area=Math.PI*r*r;
        double perimeter=2*Math.PI*r;

        System.out.println("The area of the circle is "+area);
        System.out.println("The perimeter of the circle is
"+perimeter);
    }
}
```



14.Demonstrate using Instance/Class variable by creating a simple public class:-

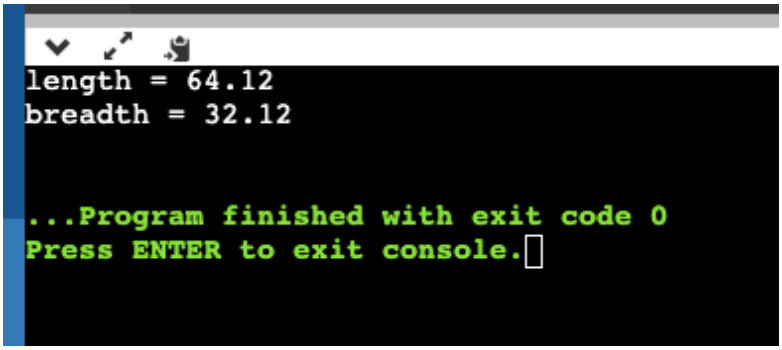
```
public class A{
    int a;
    static int b;
    public static void fun1(){
        b=3;
    }
    public static void main(String args[]){
        A a=new A();
        a.fun1();
        System.out.println(5);

    }
}
```



15.Demonstrate the java class using getter setter method for accessing private data members:-

```
public class A{
    private double length;
    private double breadth;

    public void setter(double l,double b){
        length=l;
```

```
        breadth=b;
    }
    public void getter(){
        System.out.println("length = "+length);
        System.out.println("breadth = "+breadth);
    }
    public static void main(String args[]){
        A rect1=new A();
        rect1.setter(64.12,32.12);
        rect1.getter();
    }
}
```



16. Demonstrate the use of static variable:-

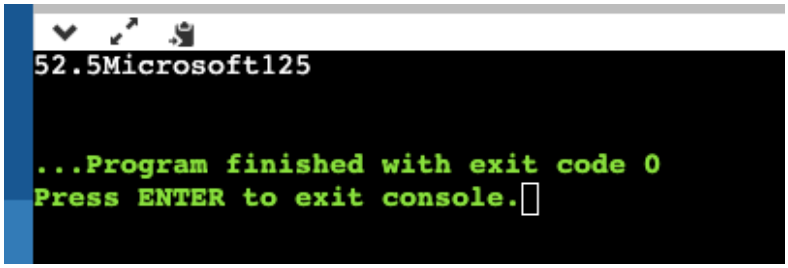
```
public class Swap{
    static int a;
    static int b;

    public static void set(int i,int j){
        a=i;
        b=j;
    }
    public static void Swap(){
        int c=0;
        c=a;
        a=b;
        b=c;
```

```
    }

    public static void main(String args[]){
        Swap.set(3,4);
        Swap.Swap();
        System.out.println("a= "+a);
        System.out.println("b= "+b);
    }
}
```

17. Demonstrate the use of static method:-

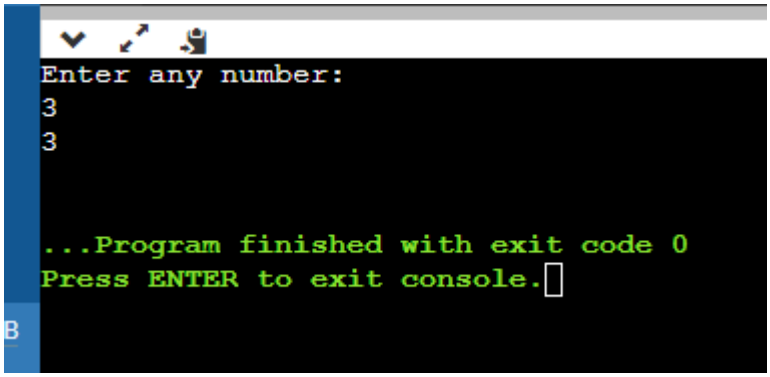
```
public class Software{

    static double sw_price;
    static String sw_name;
    static int sw_Lic;

    public static void set(double i,String j,int k){
        sw_price=i;
        sw_name=j;
        sw_Lic=k;
    }
    public static void get(){
        System.out.println(sw_price+sw_name+sw_Lic);
    }

    public static void main(String args[]){
```

```
        Software.set(52.5,"Microsoft",125);
        Software.get();
    }
}
```



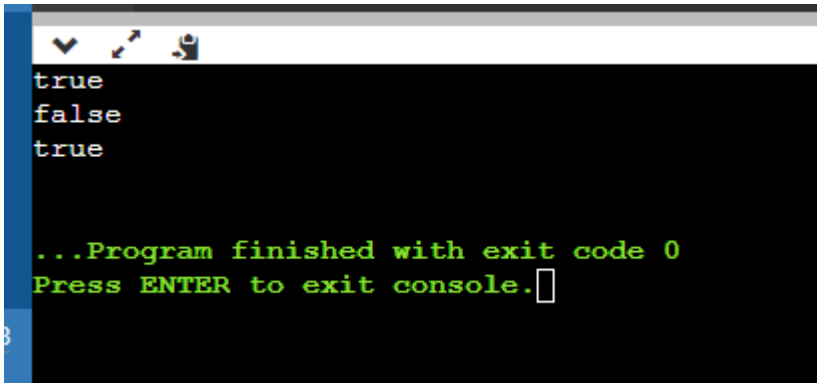
18. Demonstrate the use of Scanner class for taking input/output from user:-

```
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);
    }
}
```



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);
    }
}
```



20. Box Program:-

```
public class Box{
    private static int length;
    private static int breadth;
    private static int height;

   public static void set(int i,int j, int k){
        length=i;
        breadth=j;
        height=k;
    }
    public static void get(){
        System.out.println("Length= "+length);
        System.out.println("Breadth= "+breadth);
        System.out.println("Height= "+height);
    }
    public static void main(String args[]){
        Box b1=new Box();
        b1.set(45,56,78);
        b1.get();
    }
}
```