Assignment 1

1. Create a program that declares and initializes all primitive data types in Java and prints their default and assigned values.

Ans:

Input:

```
class Primitive {

   byte a;
   short b;
   int c;
   long d;
   float e;
   double f;
   char g;
   boolean h;

   public static void main(String[] args) {

      Primitive obj = new Primitive();

      System.out.println("Default Values:");
      System.out.println("byte: " + obj.a);
      System.out.println("short: " + obj.b);
      System.out.println("int: " + obj.c);
      System.out.println("long: " + obj.d);
      System.out.println("float: " + obj.e);
      System.out.println("double: " + obj.f);
      System.out.println("char: [" + obj.g + "]");
```

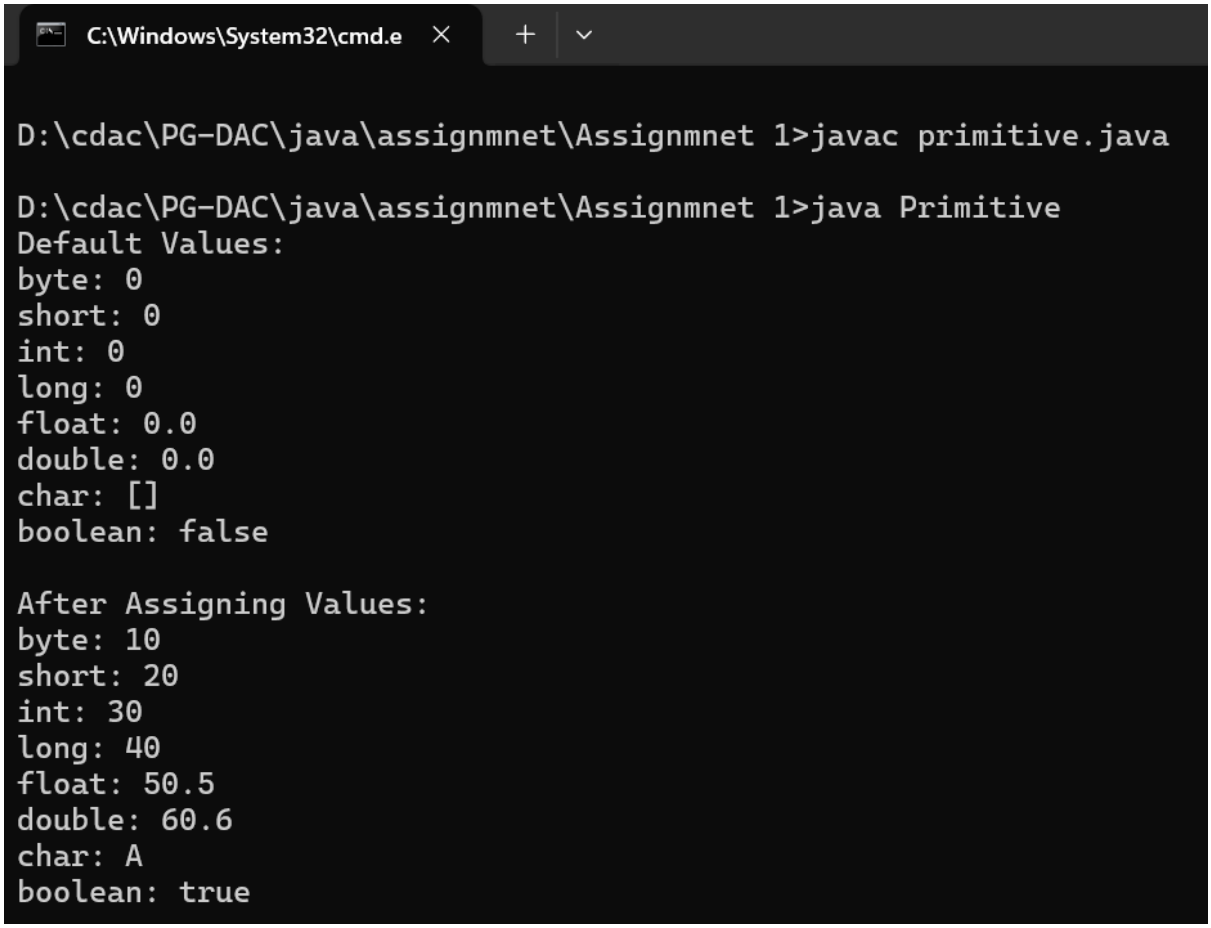
```
        System.out.println("boolean: " + obj.h);

        System.out.println("\nAfter Assigning Values:");

        byte a = 10;
        short b = 20;
        int c = 30;
        long d = 40L;
        float e = 50.5f;
        double f = 60.6;
        char g = 'A';
        boolean h = true;

        System.out.println("byte: " + a);
        System.out.println("short: " + b);
        System.out.println("int: " + c);
        System.out.println("long: " + d);
        System.out.println("float: " + e);
        System.out.println("double: " + f);
        System.out.println("char: " + g);
        System.out.println("boolean: " + h);
    }
}
```

Output:



2. Write a program to convert an int value to double automatically and display both values.

Ans:

Input:

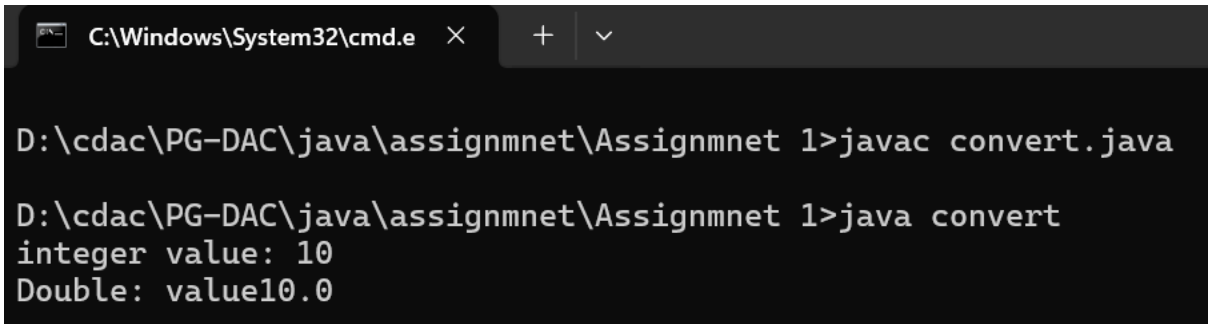
```
class convert{


   public static void main(String[] args) {
      int a = 10;
                  double b= a;


      System.out.println("integer value: " + a);
      System.out.println("Double: value" + b);
```

```
    }
}
```

Output:



3. Write a program to convert a double value to int using typecasting and explain the data loss.

Ans:

Input:

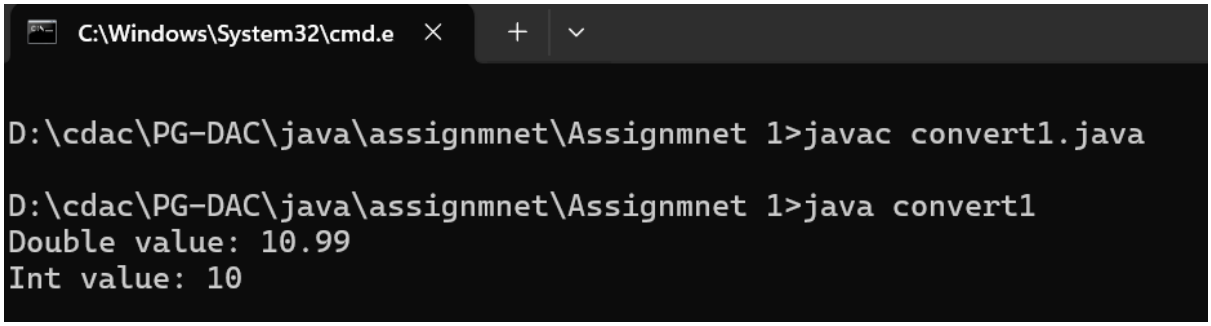
```
class convert1{


    public static void main(String[] args) {
        double a = 10.99;
        int b = (int) a;
        System.out.println("Double value: " + a);
        System.out.println("Int value: " + b);



    }
}
```

Output:



4. Write a program to calculate the average of three int numbers using typecasting to display the result in double.

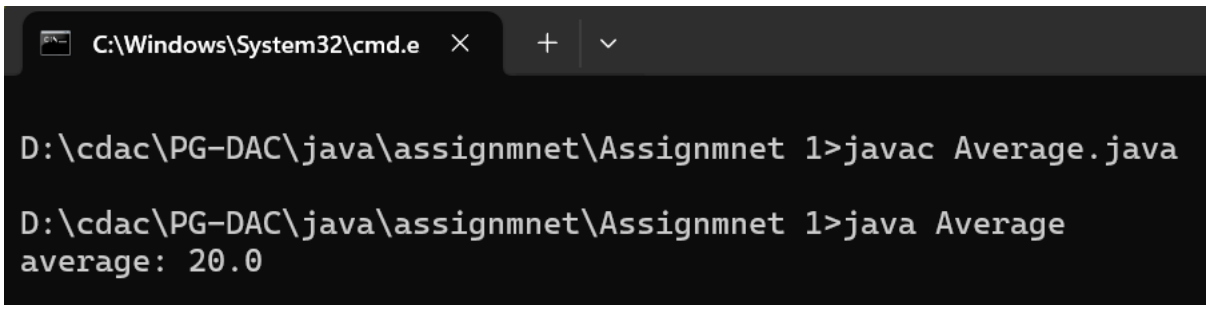
Ans:

Input:

```
class Average{


   public static void main(String[] args) {
      int a= 10;
                  int b= 20;
                  int c= 30;
                  double avg= ((double) a+b+c)/3;
      System.out.println("average: " + avg);
   }
}
```

Output:



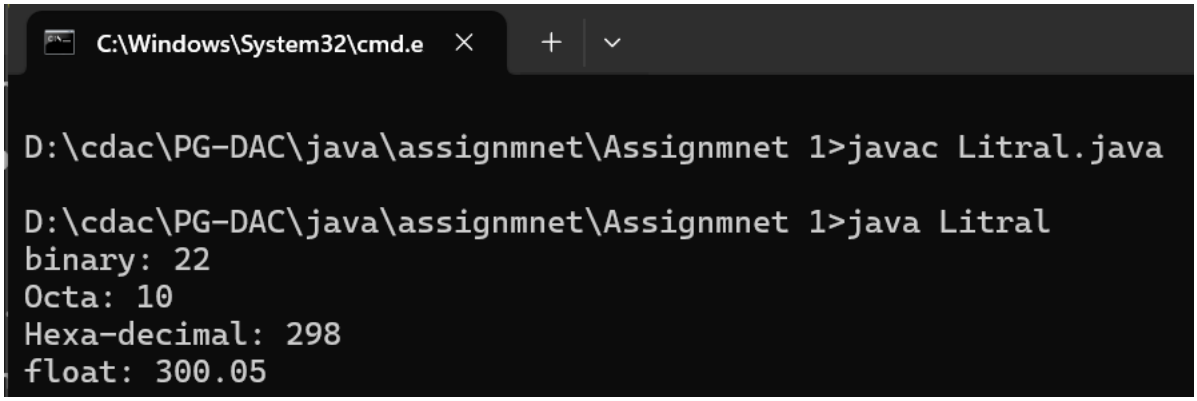
5. Write a program to demonstrate binary, octal, hexadecimal, and floating-point literals in Java.

Ans:

Input:

```
class Litral{
	public static void main(String args[]){
		int a= 0b10110;
		int b= 012;
		int c =0x12A;
		float f= 300.05f;
		System.out.println("binary: "+ a);
		System.out.println("Octa: "+ b);
		System.out.println("Hexa-decimal: "+c);
		System.out.println("float: "+f);
	}
}
```

Output:



6. Write a program to display character and string literals along with their ASCII values.

Ans:

Input:

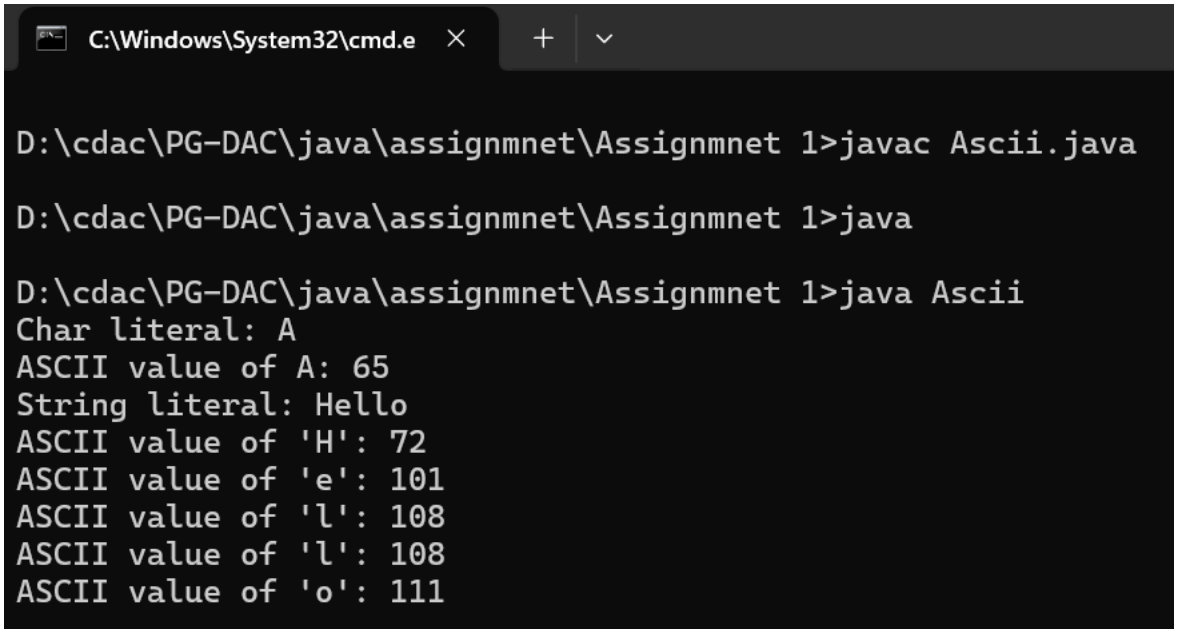
```
class Ascii{
   public static void main(String[] args) {
      char a = 'A';
      String b = "Hello";
      int asciiValue = a;
```

```
        System.out.println("Char literal: " + a);
        System.out.println("ASCII value of " +a+ ": " + asciiValue);
        System.out.println("String literal: " + b);

        for (char ch : b.toCharArray())
                    {
           System.out.println("ASCII value of '" + ch + "': " + (int) ch);
        }


    }
}
```

Output:



7. Write a program that uses boolean literals to control program flow in an if-else statement.

Ans:

Input:

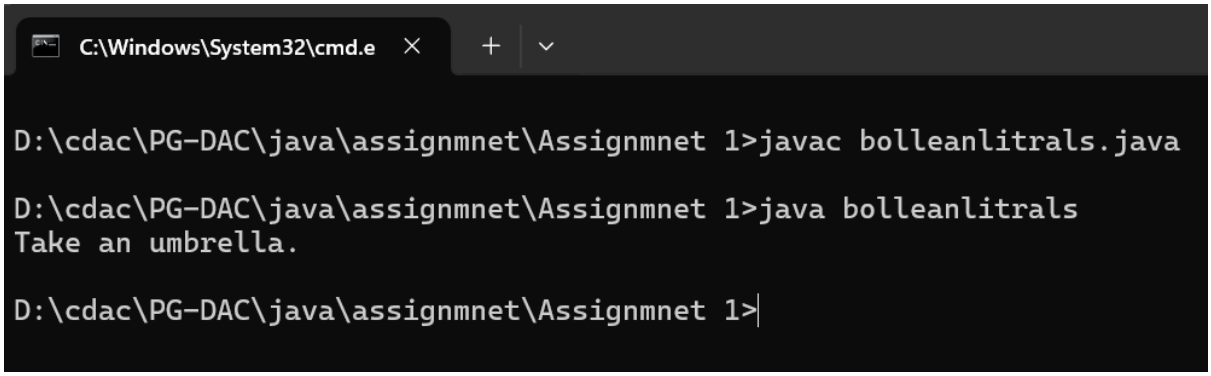
```
class bolleanlitrals{


    public static void main(String[] args) {
        boolean isRaining = true;


        if (isRaining)
                        {
            System.out.println("Take an umbrella.");
        }
                        else
                        {
            System.out.println("Its Sunny outside.No need for an umbrella.");
        }


    }
}
```

Output:



8. Write a program to perform addition, subtraction, multiplication, division, and modulus operations on two integer numbers and display the results.

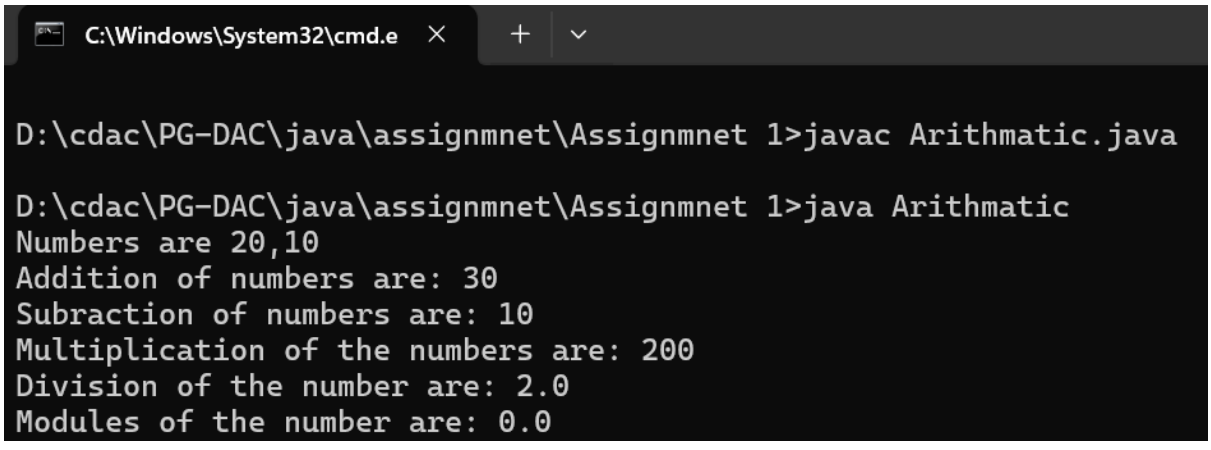
Ans:

Input:

```
class Arithmatic{
```

```
	public static void main(String args[]){
		boolean condition = true;
		int a= 20;
		int b= 10;
		int sum= a+b;
		int sub= a-b;
		int mult=a*b;
		double div= a/b;
		double mod= a%b;
		System.out.println("Numbers are "+a+ "," +b);
		System.out.println("Addition of numbers are: "+sum);
		System.out.println("Subraction of numbers are: "+sub);
		System.out.println("Multiplication of the numbers are: "+ mult);
		System.out.println("Division of the number are: "+div);
		System.out.println("Modules of the number are: "+mod);
	}
}
```

Output:



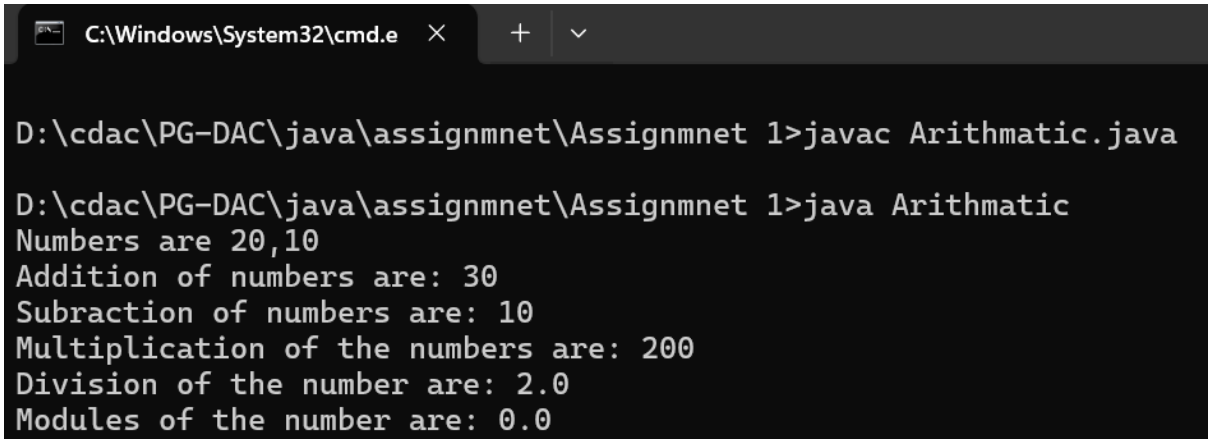
9. Write a program to perform addition, subtraction, multiplication, division, and modulus operations on two integer numbers and display the results.

Ans:

Input:

```
class Arithmatic{
	public static void main(String args[]){
		boolean condition = true;
		int a= 20;
		int b= 10;
		int sum= a+b;
		int sub= a-b;
		int mult=a*b;
		double div= a/b;
		double mod= a%b;
		System.out.println("Numbers are "+a+ "," +b);
		System.out.println("Addition of numbers are: "+sum);
		System.out.println("Subraction of numbers are: "+sub);
		System.out.println("Multiplication of the numbers are: "+ mult);
		System.out.println("Division of the number are: "+div);
		System.out.println("Modules of the number are: "+mod);
	}
}
```

Output:



10. Write a program to compare two integers using all relational operators (==, !=, >, <, >=, <=) and display the results.

Ans:

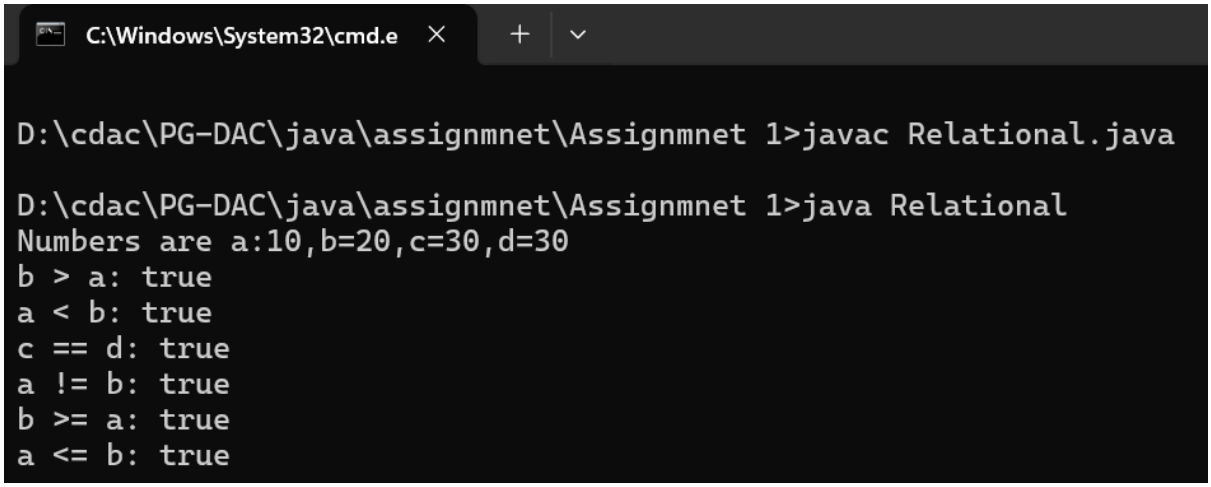
Input:

```
class Relational{
	public static void main(String args[]){
		int a=10;
		int b=20;
		int c=30;
		int d=30;

		boolean GT = b > a;
	boolean LT = a < b;
	boolean ET = c == d;
	boolean NET = a != b;
	boolean GOE = b >= a;
	boolean LOE = a <= b;

		System.out.println("Numbers are a:"+a+ ",b=" +b+ ",c=" +c+ ",d=" +d);
		System.out.println("b > a: "+GT);
		System.out.println("a < b: "+LT);
		System.out.println("c == d: "+ ET);
		System.out.println("a != b: "+NET);
		System.out.println("b >= a: "+GOE);
		System.out.println("a <= b: "+LOE);
	}
}
```

Output:



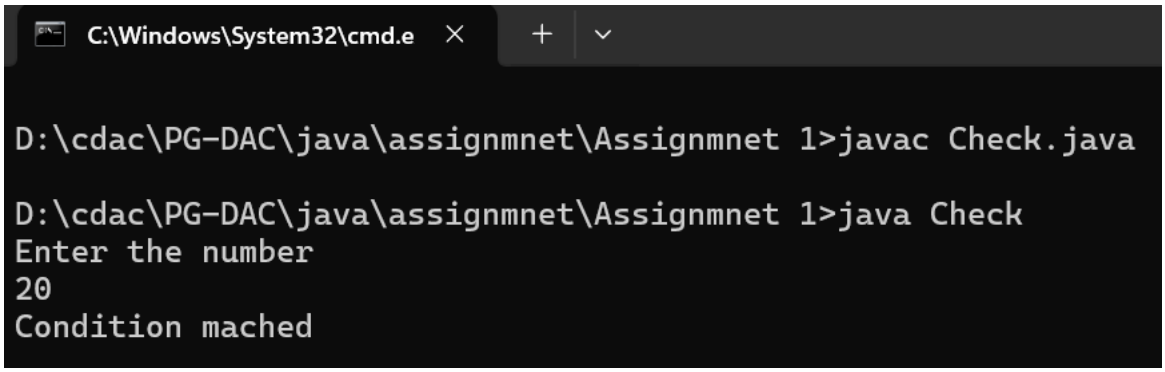
11. Write a program to check if a number is positive and even using logical operators (&&, ||, !).

Ans:

Input:

```
import java.util.Scanner;
class Check{
	public static void main(String args[]){
		Scanner input =new Scanner(System.in);
		System.out.println("Enter the number");
		int num= input.nextInt();
		if(num>=0 && (num%2)==0)
		{
			System.out.println("Condition mached");
		}
		else
		{
			System.out.println("Condition not mached");
		}
	}
}
```

Output:



12. Write a program to demonstrate the use of assignment operators (=, +=, -=, *=, /=, %=) on two integers.

Ans:

Input:

```
import java.util.Scanner;
class AssignmentOperators {
   public static void main(String[] args) {
                    Scanner input = new Scanner(System.in);
                    System.out.println("Enter two number");
      int num1 = input.nextInt();
                    int num2 = input.nextInt();
      System.out.println("Initial value of num1: " + num1);
      System.out.println("Initial value of num2: " + num2);

      num1 += num2;
      System.out.println("After "+ num1+ " += "+num2+" : " + num1);

      num1 -= num2;
      System.out.println("After "+ num1 +" -= "+num2+" : " + num1);

      num1 *= num2;
```

```
        System.out.println("After "+ num1+ "*= " +num2+" : " + num1);


        num1 /= num2;
        System.out.println("After "+ num1+ " /= "+num2+" : " + num1);


        num1 %= num2;
        System.out.println("After "+num1+ " %= " +num2+" : " + num1);
    }
}
```

Output: