Date:30-08-2023 **Research Work** Name: Y. Rajanivas

Email id: rajanivas9573@gmail.com

1.usage of POW()

pow() is used to calculate a number raise to the power of some other number. This function accepts two parameters and returns the value of first parameter raised to the second parameter. There are some special cases as listed below:

- If the second parameter is positive or negative zero then the result will be 1.0.
- If the second parameter is 1.0 then the result will be same as that of the first parameter.
- If the second parameter is NaN then the result will also be NaN.
- The function java.lang.Math.pow() always returns a double datatype.

Syntax

public static double pow(double a, double b)

Parameter:

a : this parameter is the base

b : this parameter is the exponent.

Return :

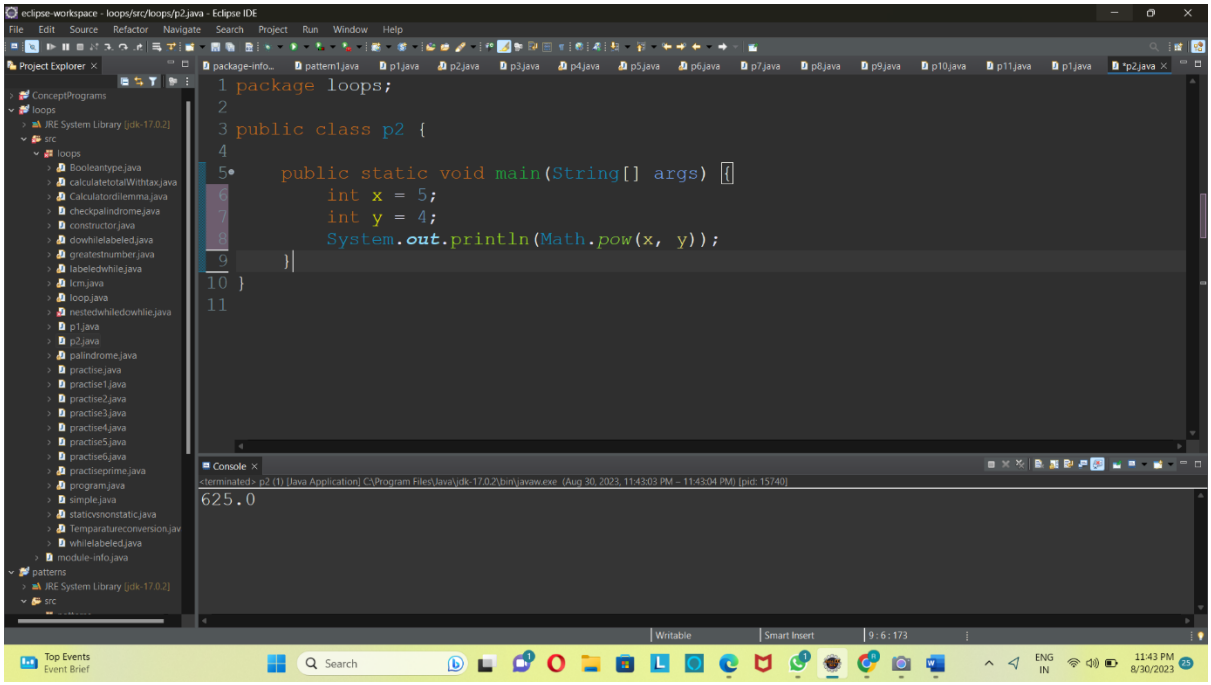
This method returns ab.

Programing:

```
package loops;

public class p2 {

    public static void main(String[] args)
{
        int x = 5;
```

```
        int y = 4;
        System.out.println(Math.pow(x,
y));
    }
}
```

Output:

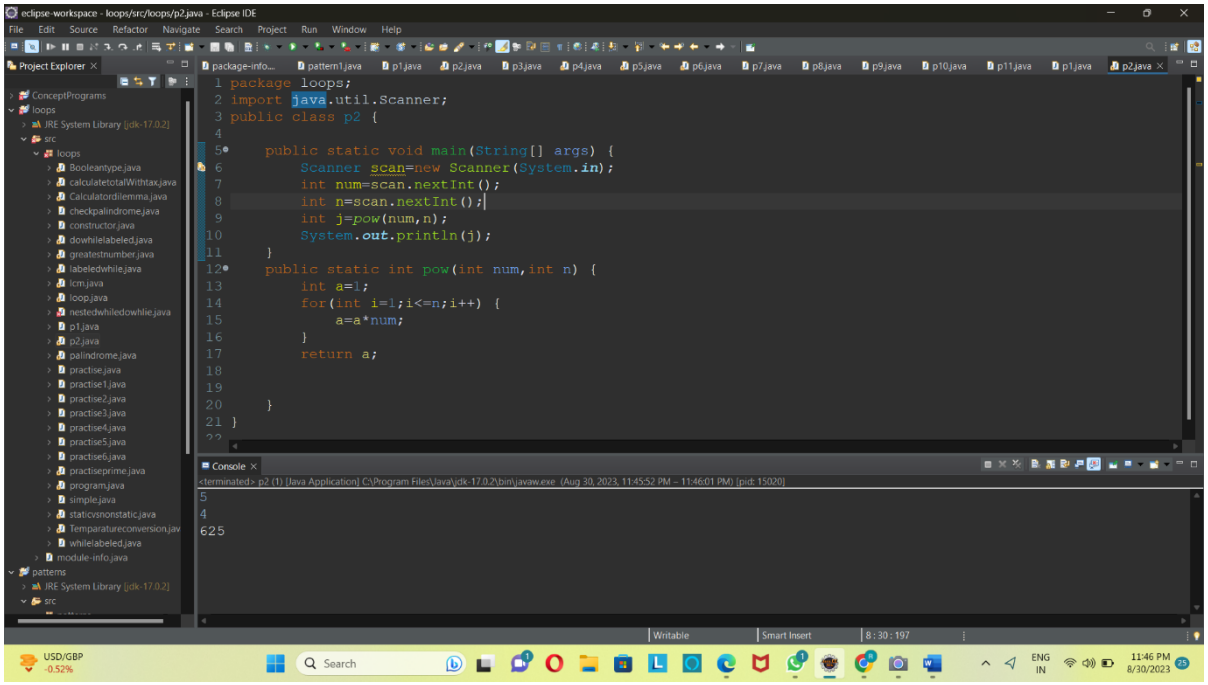


Example2:

```
package loops;
import java.util.Scanner;
public class p2 {

    public static void main(String[] args) {
        Scanner scan=new Scanner(System.in);
        int num=scan.nextInt();
        int n=scan.nextInt();
        int j=pow(num,n);
        System.out.println(j);
    }
    public static int pow(int num,int n) {
        int a=1;
        for(int i=1;i<=n;i++) {
            a=a*num;
        }
```

```
        return a;



    }
}
```

Output:



2.Usage of random():

random() method returns a pseudorandom double type number greater than or equal to 0.0 and less than 1.0. When this method is first called, it creates a single new pseudorandom-number generator, exactly as if by the expression new java.util.Random.

Declaration of Java Math random():

public static double random()

Return Type

This method returns a pseudorandom double greater than or equal to 0.0 and less than 1.0.

Java Math random() Method with Examples

Example 1:To show the working of Math.random() method.

```
Import.java.lang.math;
package loops;
import java.util.Scanner;
public class p2 {

    public static void main(String[] args) {
        double rand = Math.random();
        System.out.println("Random Number:" + rand);



    }
}
```

Output:

```
Random Number:0.2461271838356478
```

3. Random class in Java

Random class is used to generate pseudo-random numbers in java. An instance of this class is thread-safe. The instance of this class is however cryptographically insecure. This class provides various method calls to generate different random data types such as float, double, int.

Constructors:

Random(): Creates a new random number generator

Random(long seed): Creates a new random number generator using a single long seed

Declaration:

public class Random

extends Object

implements Serializable

Methods:

java.util.Random.doubles(): Returns an effectively unlimited stream of pseudo random double values, each between zero (inclusive) and one (exclusive)

Syntax:

public DoubleStream doubles()

Returns:

a stream of pseudorandom double values

2. **java.util.Random.ints():** Returns an effectively unlimited stream of pseudo random int values

Syntax:

public IntStream ints()

Returns:

a stream of pseudorandom int values

Example:

```
package loops;
import java.util.Random;

public class p2 {

    public static void main(String[] args) {

                // Create a Random object
                Random random = new Random();

                // Generate and print a random
integer between 1 and 10 (inclusive)
                int minRange = 1;
                int maxRange = 10;
                int randomNumber =
random.nextInt(maxRange - minRange + 1) + minRange;
                System.out.println("Random Number: "
+ randomNumber);
```

Output:

```
Random Number: 10
```