Random class

Assignment: 10

Date: 30-08-2023

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Random Class:

Java Random class is used to generate a stream of pseudorandom numbers. This class has various methods to generate random numbers.

doubles()	Returns an unlimited stream of pseudorandom double values.
ints()	Returns an unlimited stream of pseudorandom int values.
longs()	Returns an unlimited stream of pseudorandom long values.
next()	Generates the next pseudorandom number.
nextBoolean()	Returns the next uniformly distributed pseudorandom boolean value from the random number generator's sequence
nextByte()	Generates random bytes and puts them into a specified byte array.
nextDouble()	Returns the next pseudorandom Double value between 0.0 and 1.0 from the random number generator's sequence
nextFloat()	Returns the next uniformly distributed pseudorandom Float value between 0.0 and 1.0 from this random number generator's sequence
nextGaussian()	Returns the next pseudorandom Gaussian double value with mean 0.0 and standard deviation 1.0 from this random number generator's sequence.
nextInt()	Returns a uniformly distributed pseudorandom int value generated from this random number generator's sequence
nextLong()	Returns the next uniformly distributed pseudorandom long value from the random number generator's sequence.
setSeed()	Sets the seed of this random number generator using a single long seed.

nextInt(), nextFloat(), nextLong(), nextDouble(), nextBoolean()

```java
public class Demo {
    public static void main(String[] args) {
        Random random=new Random();
        //random integer  value
        int a=1+random.nextInt(6);
        System.out.println("Random integer value = "+a);
        //random long  value
        long b=random.nextLong();
        System.out.println("Random long value = "+b);
        // random float  value
        float c=random.nextFloat(10);
        System.out.println("Random float value = "+c);
        // random double  value
        double d=random.nextDouble(100.0);
        System.out.println("Random double value = "+d);
        // random boolean value
        boolean e=random.nextBoolean();
        System.out.println("Random boolean value = "+e);
        }}
```

```
<terminated> Demo (18) [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe  (30-Aug-2023, 5:58:49 pm – 5:58:49
Random integer value = 4
Random long value = 477813116032626709
Random float value = 1.823709
Random double value = 73.75350637618074
Random boolean value = true
```

ints, longs, doubles

```java
import java.util.Random;
import java.util.stream.DoubleStream;
import java.util.stream.IntStream;
import java.util.stream.LongStream;

public class Demo {
    public static void main(String[] args) {
        Random random=new Random();
        //unlimited stream of pseudo random integer values.
        IntStream a=random.ints();
        System.out.println(a);
        //unlimited stream of pseudo random long values.
        LongStream b=random.longs();
        System.out.println(b);
        //unlimited stream of pseudo random double values.
        DoubleStream d=random.doubles();
        System.out.println(d);
        }}
```

```
<terminated> Demo (18) [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe  (30-Aug-2023, 6:08:02 pm – 6:08:03 pm
java.util.stream.IntPipeline$Head@24d46ca6
java.util.stream.LongPipeline$Head@5305068a
java.util.stream.DoublePipeline$Head@5caf905d
```

nextGaussian

*Demo.java

```java
package xyz;

import java.util.Random;
import java.util.stream.DoubleStream;
import java.util.stream.IntStream;
import java.util.stream.LongStream;

public class Demo {
    public static void main(String[] args) {
        Random random=new Random();
        //The nextGaussian() method of Random class returns the next pseudo random,
        //Gaussian(normally) distributed double value with mean 0.0 and standard
        //deviation 1.0 from the random number generator's sequence
        Double val1 = random.nextGaussian();
        System.out.println("Random Gaussian value : "+val1);
        double val2 = random.nextGaussian();
        System.out.println("Random Gaussian value : "+val2);
        }}
```

Console

```
<terminated> Demo (18) [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe  (30-Aug-2023, 6:10:32 pm – 6:10:32 pm) [pid
Random Gaussian value : 2.0704127801095296
Random Gaussian value : 0.03185003643718453
```

setSeed

Demo.java

```java
package xyz;

import java.util.Random;

public class Demo {
    public static void main(String[] args) {
        Random random=new Random();
        //This value changes every time
        System.out.println("Random Integer value : "+random.nextInt());
        // setting seed
        long seed =20;
        random.setSeed(seed);
        //value after setting seed  // this value does not change
        System.out.println("Random Integer value : "+random.nextInt());


        }}
```

Console

```
<terminated> Demo (18) [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe  (30-Aug-2023, 7:00:26 pm – 7:00:26 p
Random Integer value : -339760077
Random Integer value : -1150867590
```