

JAVA.MATH.BIGINTEGER.PROBABLEPRIME METHOD

http://www.tutorialspoint.com/java/math/biginteger_probableprime.htm

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Description

The **java.math.BigInteger.probablePrime**(*int* bitLength, *Random* rnd) returns a positive BigInteger that is probably prime, with the specified bitLength. The probability that a BigInteger returned by this method is composite does not exceed 2^{-100} .

Declaration

Following is the declaration for **java.math.BigInteger.probablePrime** method

```
public static BigInteger probablePrime(int bitLength, Random rnd)
```

Parameters

- **bitLength** - bitLength of the returned BigInteger
- **rnd** - source of random bits used to select candidates to be tested for primality

Return Value

This method returns a BigInteger of bitLength bits that is probably prime.

Exception

- **ArithmeticException** - if bitLength < 2

Example

The following example shows the usage of math.BigInteger.probablePrime method

```
package com.tutorialspoint;

import java.math.*;
import java.util.*;

public class BigIntegerDemo {

    public static void main(String[] args) {

        // create a BigInteger object
        BigInteger bi;

        // create and assign value to bitLength
        int bitLength = 3;

        // create a random object
        Random rnd = new Random();

        // assign probablePrime result to bi using bitLength and rnd
        // static method is called using class name
        bi = BigInteger.probablePrime(bitLength, rnd);

        String str = "ProbablePrime of bitlength " + bitLength + " is " + bi;

        // print bi value
        System.out.println( str );
    }
}
```

Let us compile and run the above program, this will produce the following result:

ProbablePrime of bitlength 3 is 5

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