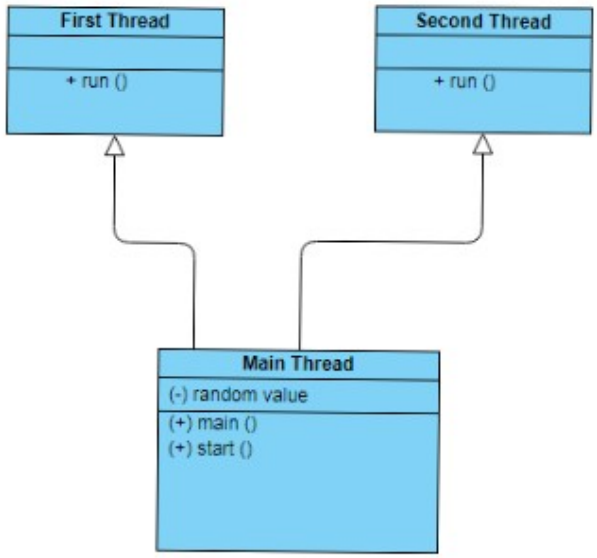
EX.NO: 08	MULTI THREADED APPLICATION
DATE: 16-09-19	

AIM: To develop a java program for implementing multithread application.

REQUIREMENTS:
Develop a java program that implements a multithread application that has 3 threads.First generates a random integer for every 1 second and if the value is even,second thread computes the square of the number and prints.If the value is odd,the third thread will print the value of cube of the number.

ALGORITHM:
STEP 1: Declare a package called multithread.
STEP 2: Declare a class name of FirstThread,SecondThread which extends from Thread.
STEP 3: Declare a object in the respective classes.
STEP 4: Create a condition to check the statements.
STEP 5: Print the result.

CLASS DIAGRAM:



PROGRAM:
MainThread:

```
package multithread;


/*
 * developed by R.Nehareddy
```

```
 * EEE-B
 * 212217105049
 *
 *
 */

import java.util.Random;

public class MainThread {

	public static Integer RandomValue;

	public static void main(String[] args) {
		FirstThread t1;
		SecondThread t2;
		Random r;

			t1=new FirstThread();
			t2=new SecondThread();

			r=new Random();
			RandomValue=-1;

			t1.start();
			t2.start();

			try
			{
			while(true)
			{
				synchronized(RandomValue)
				{
					if(RandomValue==-1)
					{
						RandomValue=r.nextInt(200);
						System.out.println("Placed a new number
"+RandomValue);
					}
				}
				Thread.sleep(4000);
			}
			}catch(InterruptedException ex)
			{
				System.out.println("Error:"+ex);
			}

	}

}
```

FirstThread:

```
/*
 * developed by R.Nehareddy
 * EEE-B
 * 212217105049
 *
 *
 */

package multithread;

public class FirstThread extends Thread {

	public void run()
	{

		try
		{
			System.out.println("First thread started...");
			while(true)
			{
				synchronized(MainThread.RandomValue)
				{
					if(MainThread.RandomValue
%2==0&&MainThread.RandomValue!=-1)
					{
						System.out.println("Value is even");
						System.out.println("Answer="+
(MainThread.RandomValue*MainThread.RandomValue));
						MainThread.RandomValue=-1;
					}
				}

				Thread.sleep(1000);
			}
		}catch(InterruptedException ex)
		{
			System.out.println("Error:"+ex);
		}

	}
}
```

SecondThread:

```
/*
 * developed by R.Nehareddy
 * EEE-B
 * 212217105049
 *
 *
 */
```

```
package multithread;

public class SecondThread extends Thread {

	public void run()
	{
		try
		{
			System.out.println("Second thread started...");
			while(true)
			{
				synchronized(MainThread.RandomValue)
				{
					if(MainThread.RandomValue%2!
=0&&MainThread.RandomValue!=-1)
					{
						System.out.println("Value is odd");
						System.out.println("Answer="+
(MainThread.RandomValue*MainThread.RandomValue*MainThread.RandomValue));
						MainThread.RandomValue=-1;
					}
				}

				Thread.sleep(1000);
			}
		}catch(InterruptedException ex)
		{
			System.out.println("Error:"+ex);
		}
	}
}
```

OUTPUT:

```
Placed a new number 61
First thread started...
Second thread started...
Value is odd
Answer=226981
Placed a new number 2
Value is even
Answer=4
Placed a new number 166
Value is even
Answer=27556
Placed a new number 54
Value is even
Answer=2916
Placed a new number 37
Value is odd
Answer=50653
Placed a new number 155
Value is odd
```

Answer=3723875
Placed a new number 7
Value is odd
Answer=343
Placed a new number 103
Value is odd
Answer=1092727
Placed a new number 82
Value is even
Answer=6724
Placed a new number 79
Value is odd
Answer=493039
Placed a new number 45
Value is odd
Answer=91125
Placed a new number 75
Value is odd
Answer=421875
Placed a new number 23
Value is odd
Answer=12167
Placed a new number 15
Value is odd
Answer=3375
Placed a new number 176
Value is even
Answer=30976
Placed a new number 34
Value is even
Answer=1156

RESULT: Thus a java application that performs multithreading is developed.