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Batch Code : **Java_ANP-C6315**

Lab Assignment-15

Q1: Create two thread.one thread is finding the average of the first 10 numbers and another thread is printing the square of the number stored in array arr={1,20,50,15,30} and make sure both threads can execute one by one.

Input:

```
package CoreJava;

public class AverageSquareThreads {
        private static int[] arr = {1, 20, 50, 15, 30};
    private static double average = 0.0;
    private static boolean averageCalculated = false;

        public static void main(String[] args) {
                // TODO Auto-generated method stub
                AverageThread averageThread = new AverageThread();
        SquareThread squareThread = new SquareThread();

        averageThread.start();
        squareThread.start();

        try {
            averageThread.join();
            squareThread.join();
        } catch (InterruptedException e) {
            e.printStackTrace();
        }
    }

    static class AverageThread extends Thread {
        @Override
        public void run() {
            synchronized (arr) {
                int sum = 0;
                for (int i = 0; i < 10; i++) {
```

```
                sum += arr[i];
            }
            average = (double) sum / 10;
            averageCalculated = true;

            // Notify the SquareThread to proceed
            arr.notify();

            // Wait for SquareThread to finish
            while (!averageCalculated) {
                try {
                    arr.wait();
                } catch (InterruptedException e) {
                    e.printStackTrace();
                }
            }
        }
    }

    static class SquareThread extends Thread {
        @Override
        public void run() {
            synchronized (arr) {
                // Wait for AverageThread to finish calculating the average
                while (!averageCalculated) {
                    try {
                        arr.wait();
                    } catch (InterruptedException e) {
                        e.printStackTrace();
                    }
                }

                // Calculate and print the squares
                System.out.println("Average of the first 10 numbers: " + average);
                System.out.print("Squares of the numbers: ");
                for (int num : arr) {
                    System.out.print(num * num + " ");
                }
            }
        }
    }
}
```

Output:

Average of the first 10 numbers: 17.1

Squares of the numbers: 1 400 2500 225 900