Institute of Computer Technology
B. Tech Computer Science and Engineering
Subject: OOP (2CSE303)

Assignment-3

1. Write an application that executes two threads. One thread displays "Good Morning" every 1000 milliseconds & another thread displays "Good Evening" every 3000 milliseconds along with their respective thread id followed by a message "Good Bye..". Create the threads by implementing the Runnable interface.

SOLUTION

```
package assignment3;

/**
 *
 * @author YashPrajapati
 */
class Morning implements Runnable
{
   public void run()
   {
      for(int i=0;i<5;i++)
      {
         try
         {
            Thread.sleep(1000);
         }
         catch(Exception e)
         {
            System.out.println(e);
         }
         System.out.println("Good Morning. This is thread
"+Thread.currentThread().getId());
      }
   }
}

class Evening implements Runnable
{
```

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```
    public void run()
    {
        for(int i=0;i<5;i++)
        {
            System.out.println("Good Evening. This is thread
"+Thread.currentThread().getId());
            try
            {
                Thread.sleep(3000);
            }
            catch(Exception e)
            {
                System.out.println(e);
            }
        }
        System.out.println("Good Bye...");
    }
}

public class A3Q1 {

    public static void main(String[] args) {
        Morning T1=new Morning();
        Evening T2=new Evening();
        Thread td=new Thread(T1);
        Thread td1=new Thread(T2);
        td.start();
        td1.start();
    }
}
```

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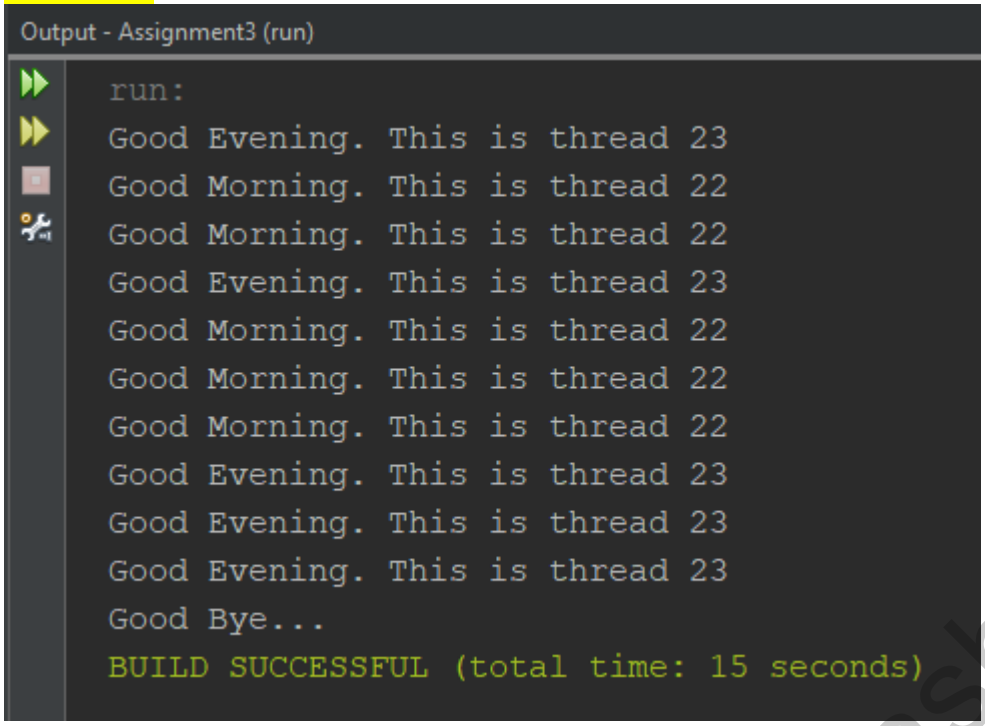
OUTPUT



2. Implement a Java based program to create two threads, one thread will print odd numbers and second thread will print even numbers between 1 to 100 numbers.

SOLUTION

```
package assignment3;


/**
 *
 * @author YashPrajapati
 */
class odd extends Thread {

    public void run() {
        for (int i = 1; i < 100; i = i + 2) {
            System.out.println("Odd: " + i);
        }
    }
```

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```
}

class even extends Thread {

        public void run() {
                for (int i = 2; i <= 100; i = i + 2) {
                        System.out.println("Even: " + i);
                }
        }
}

public class A3Q2 {

        public static void main(String[] args) {
                odd T1 = new odd();
                even T2 = new even();
                T1.start();
                T2.start();
        }
}
```

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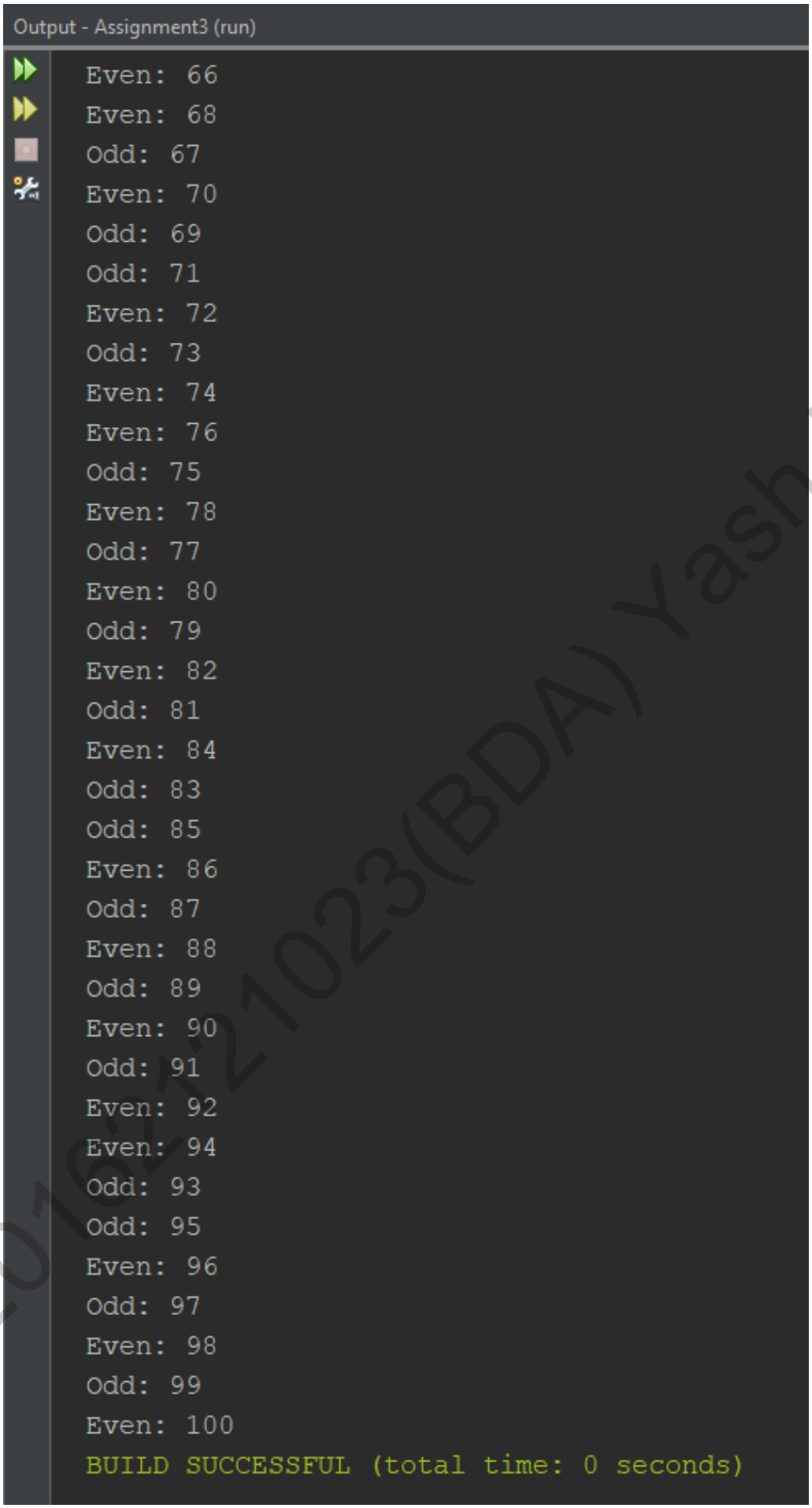
OUTPUT



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3. Write a Java program to spawn three threads with following actions:

a. Set the second thread to maximum priority while the first and third thread should have normal priority

b. Execution of only threads with priority less than 8 should take place.

c. Also, print the alive status of all the three threads.

SOLUTION

```
package assignment3;

/**
 *
 * @author YashPrajapati
 */
class MultithreadingDemo extends Thread{
        @Override
        public void run() {
                if (Thread.currentThread().getPriority()<8) {
                        System.out.println("Thread Running \nID is
"+Thread.currentThread().getId());
                        System.out.println("Priority for
"+Thread.currentThread().getName()+" is:
"+Thread.currentThread().getPriority());
                        for (int i = 0; i < 3; i++) {
                                System.out.println("Thread is currently active.      ");
                        }
                }
        }
}
public class A3Q3 {

        public static void main(String[] args) {
                MultithreadingDemo t1=new MultithreadingDemo();
                MultithreadingDemo t2=new MultithreadingDemo();
                MultithreadingDemo t3=new MultithreadingDemo();
                t1.start();
                t2.start();
                t3.start();
                t1.setPriority(Thread.MIN_PRIORITY);
                t2.setPriority(Thread.MAX_PRIORITY);
```

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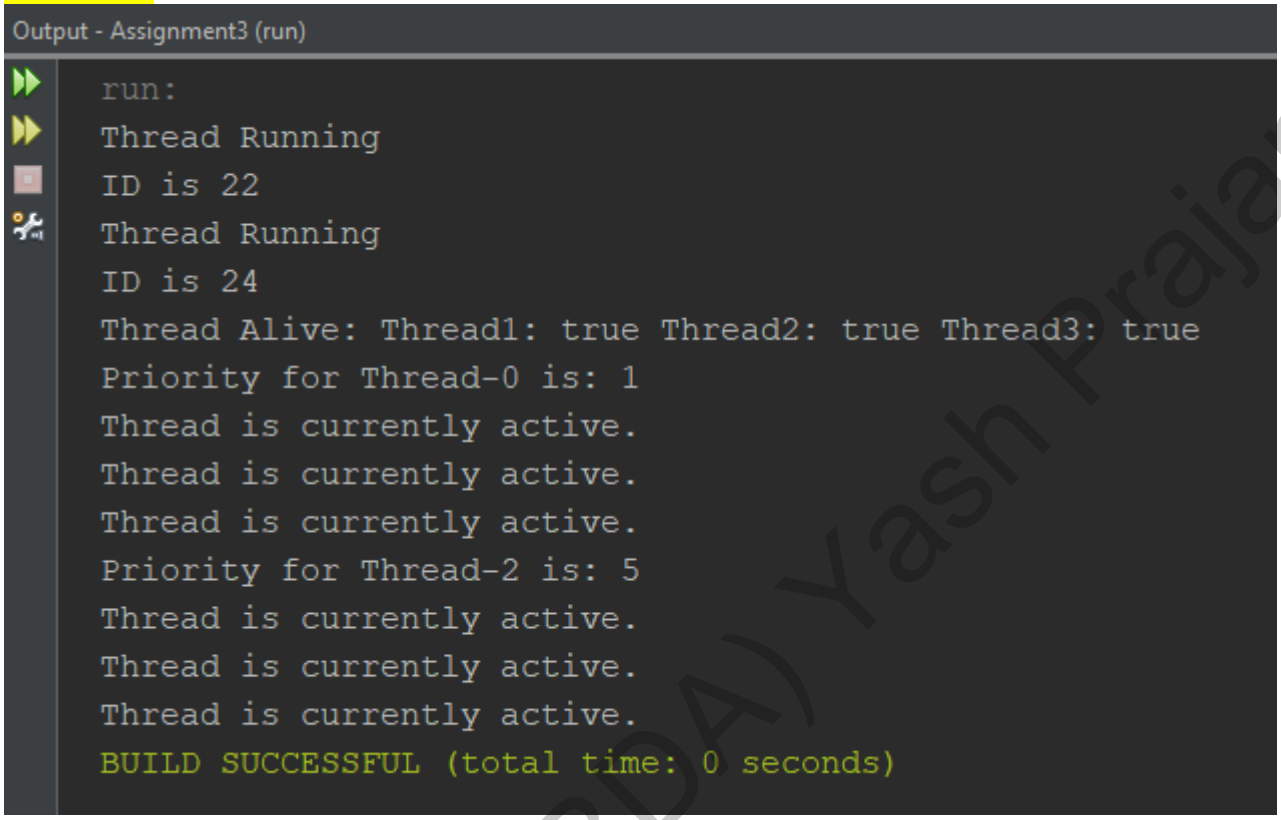
```
            System.out.println("Thread Alive: Thread1: "+t1.isAlive()+"
Thread2: "+t2.isAlive()+" Thread3: "+t3.isAlive());
        }
}
```

OUTPUT



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