LAB SHEET (MULTITHREADING)

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TRAFFIC LIGHT QUESTION

```
Question
01
             package com.mycompany.threadexample1;
             public class RedLightThread extends Thread{
                 public void run()
                 {
                   try{
                    while(true){
                   System.out.println("Red");
                   Thread.sleep(5000);
                    }
                   catch(InterruptedException e){
                     e.printStackTrace();
                   }
                 }
               }
             package com.mycompany.threadexample1;
             public class GreenLightThread extends Thread{
                 public void run()
                   System.out.println("Green");
                   try{
                     while(true){
                     Thread.sleep(10000);
                      }
                   catch(InterruptedException e){
                      e.printStackTrace();
                   }
                 }
               }
```

```
package com.mycompany.threadexample1;
public class YellowLightThread extends Thread {
  public void run()
    {
      System.out.println("Yellow");
      try{
        while(true){
        Thread.sleep(2000);
        }
      catch(InterruptedException e){
        e.printStackTrace();
      }
    }
  }
package com.mycompany.threadexample1;
public class ThreadExample1 {
  public static void main(String[] args) {
    RedLightThread r=new RedLightThread();
    r.start();
    GreenLightThread g=new GreenLightThread();
    YellowLightThread y=new YellowLightThread();
    y.start();
 }
```

```
package com.mycompany.trafficlightstimulator;
enum TrafficLightColor {
  RED, GREEN, YELLOW
}
class TrafficLightsStimulator implements Runnable{
  private Thread thrd;
  private TrafficLightColor tlc;
  boolean stop=false;
  TrafficLightsStimulator(TrafficLightColor init){
    tlc=init;
    thrd=new Thread (this);
    thrd.start();
  }
  TrafficLightsStimulator(){
    tlc=TrafficLightColor.RED;
    thrd=new Thread(this);
    thrd.start();
  }
  public void run(){
    while(!stop){
      try{
        switch(tlc){
           case GREEN:
            System.out.println("Green Light");
            Thread.sleep(10000);
            break;
           case YELLOW:
             System.out.println("Yellow Light");
```

```
Thread.sleep(2000);
             break;
          case RED:
             System.out.println("Red Light");
             Thread.sleep(5000);
             break;
        }catch(InterruptedException exc){
             System.out.println(exc);
             }
      }
      changeColor();
      }
    }
 } synchronized void changeColor(){
         switch(tlc){
          case RED:
          tlc=TrafficLightColor.GREEN;
          break;
          case YELLOW:
          tlc=TrafficLightColor.RED;
          break;
          case GREEN:
          tlc=TrafficLightColor.YELLOW;
        }
        }
         notify();
          synchronized void waitForChange(){
          try{
          wait();
}catch(InterruptedException exc){
           System.Out.println(exc);
```

```
package com.mycompany.trafficlightstimulator;
public class TrafficLightDemo {
  public static void main(String[] args) {
    TrafficLightsStimulator t1=new TrafficLightsStimulator (TrafficLightColor.YELLOW);
    for(int i=0;i<9;i++){
      System.out.println(t1.getColor());
      t1.waitForChange();
    }
    t1.cancel();
  }
}
```