

COP 4610L – Operating Systems

Assignment 1

Monday Section: Due Monday February 11, 2002
Wednesday Section: Due Wednesday February 13, 2002

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Office Hours

Monday and Wednesday 2:30-3:30. Also by appointment. I will try to answer e-mail questions in a timely manner; concise questions are likely to elicit quicker responses.

Instructions

Please work independently.

Please turn in your work via email to the grader: cop4610ta@yahoo.com

There will be no make up exams, assignments, or tests.

1. Research the following two Thread methods
 - a. setName()
 - b. join()
2. Use the setName method to assign a name to the TimerThread. Do this in the TimerThread constructor
3. In the Applet class, display the name of the TimeThread immediately after the TimerThread has been instantiated.
4. Modify the Animate class stop() method to use the Thread join() method to synchronize the termination of the TimerThread().
5. To run the program, you need to create 10 jpeg images in the directory where the program is. Name the images 1.jpeg, 2.jpeg, 3.jpeg, etc.

You are to turn in the modified java classes.

The sample program is below.

```
// TimerThread class
```

```
import java.awt.*
```

```
public class TimerThread extends Thread
```

```
{  
    Component      m_comp;      // Component that needs repainting  
    int             m_timeDiff;  // Time between repaints of the component  
    volatile boolean m_shouldRun // Set to false to stop thread
```

```
    public TimerThread(Component comp, int timeDiff)
```

```
    {  
        m_comp = comp;  
        m_timeDiff = timeDiff;  
        m_shouldRun = true;  
    }
```

```
    public void run()
```

```
    {  
        while (m_shouldRun)  
        {  
            try  
            {  
                m_comp.repaint();  
                sleep(m_timeDiff);  
            }  
            catch (Exception e)  
            {  
            }  
        }  
    }  
}
```

```

// Animate Applet class

import java.applet.*
import java.awt.*

public class Animate extends Applet
{
    int          m_count, m_lastCount;
    Image        m_pictures[];
    TimerThread  m_timer;

    // init method
    public void init()
    {
        m_lastCount = 10;
        m_count = 0;
        m_pictures = new Image[10];

        MediaTracker tracker = new MediaTracker(this);
        for(int a = 0; a < m_lastCount; a++)
        {
            m_pictures[a] = getImage(
                getCodeBase(), new Integer(a).toString()+".jpeg"
            );
            tracker.addImage(m_pictures[a],0);
        }
        tracker.checkAll(true);
    }

    // applet start() method
    public void start()
    {
        m_timer = new TimerThread(this, 1000);
        m_timer.start();
    }

    // applet stop() method
    public void stop()
    {
        m_timer.shouldRun = false;
        m_timer = null;
    }

    // applet paint() method
    public void paint(Graphics g)
    {
        g.drawImage(m_pictures[m_count++], 0, 0, null);

        if(m_count == m_lastCount)
        {
            m_count = 0;
        }
    }
}

```