1. Tujuan

Setelah menyelesaikan aktifitas praktek ini diharapkan peserta dapat mengetahui cara mengimplementasikan kelas Thread pada sebuah game mobile.

2. Latar Belakang

Setelah mempelajari tentang kelas Thread pada Modul Thread (JENI 4) marilah kita coba mengimplementasikan pengetahuan kita dengan membuat sebuah proyek game sederhana yang menggunakan kelas Thread.

3. Percobaan

Percobaan 1: Membuat Class MidletThreadBackground

```
import javax.microedition.midlet.*;
import javax.microedition.lcdui.*;

public class MidletThreadBackground extends MIDlet {
   private Display display;
   private ThreadBackgroudCanvas threadCanvas = new ThreadBackgroudCanvas();

   public void startApp() {
      display = Display.getDisplay(this);
      threadCanvas.start();
      display.setCurrent(threadCanvas);
   }

   public Display getDisplay() {
      return display;
   }
   public void pauseApp() { }

   public void destroyApp(boolean unconditional) {
      exit();
   }
```

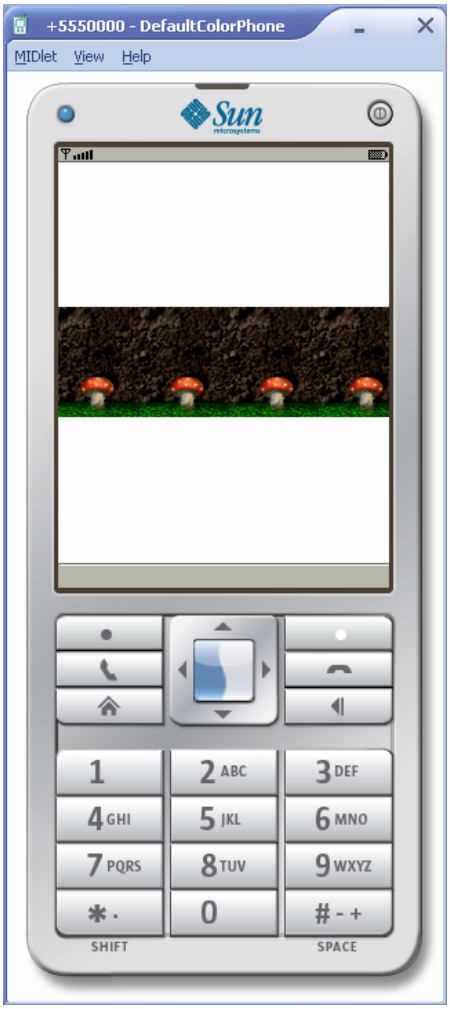
```
   public void exit() {
      threadCanvas.stop();
      System.gc();
      notifyDestroyed();
   }
}
```

Percobaan 2: Membuat Class ThreadBackgroudCanvas

```
import javax.microedition.lcdui.*;
import javax.microedition.lcdui.game.*;

public class ThreadBackgroudCanvas extends GameCanvas implements Runnable {
   private boolean isPlay;   // gambar akan berjalan apabila bernilai true
   private long delay;       // di beri nilai konstanta
   private int currentX, currentY;  // Pergerakan untuk koordinat 'X' dan 'Y'
   private int width;        // untuk lebar screen
   private int height;       // untuk tinggi screen
   private int x;

   //Konstruktor dan inisialisasinya
   public ThreadBackgroudCanvas() {
      super(true);
      width = getWidth();
      height = getHeight();
      currentX = width / 2;
      currentY = height / 2;
      delay = 20;
   }

   // Method start dijalankan awal peggunaan thread dan di ulang-ulang
   public void start() {
      isPlay = true;
      Thread t = new Thread(this);
      t.start();
   }
```

```
   public void stop() {
      isPlay = false;
   }

   // method run abstrak dari Runnable Mejalankan pertamakali pada graphics
   public void run() {
      Graphics g = getGraphics();
      while (isPlay == true) {
         x++;
         if(x<-120) {
            x=0;
         }else {
            x=x-5;
         }
         drawScreen(g);
         try { Thread.sleep(delay); }
         catch (InterruptedException ie) { }
      }
   }

   // Method drawScreen untuk menggambar Graphics
   private void drawScreen(Graphics g) {
      try {
         g.setColor(255,255,255);
         g.fillRect(0,0,getWidth(),getHeight());
         Image image = Image.createImage("/gbr-bg.png");
         g.drawImage(image, x, (getHeight()-image.getHeight())/2,
                     Graphics.TOP | Graphics.LEFT);
      }catch(Exception e){ }
      flushGraphics();
   }
}
```

Hasil :


+5550000 - DefaultColorPhone
MIDlet View Help
Sun
1
2 ABC
3 DEF
4 GHI
5 JKL
6 MNO
7 PQRS
8 TUV
9 WXYZ
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SPACE

Percobaan 3: Membuat Class MidletThreadObject

```
import javax.microedition.midlet.*;
import javax.microedition.lcdui.*;

public class MidletThreadObject extends MIDlet {
    private Display display;
    private ThreadObjectCanvas threadCanvas = new ThreadObjectCanvas();

    public void startApp() {
        display = Display.getDisplay(this);
        threadCanvas.start();
        display.setCurrent(threadCanvas);
    }

    public Display getDisplay() {
        return display;
    }

    public void pauseApp() { }

    public void destroyApp(boolean unconditional) {
        exit();
    }

    public void exit() {
        threadCanvas.stop();
        System.gc();
        notifyDestroyed();
    }
}
```

Percobaan 4: Membuat Class ThreadObjectCanvas

Menggunakan kelas Thread untuk melakukan pergerakan gambar obyek pada game mobile: (tambahkan script-script yang berwarna merah)

```
import javax.microedition.lcdui.*;
import javax.microedition.lcdui.game.*;

public class ThreadObjectCanvas extends GameCanvas implements Runnable {
   private boolean isPlay;   // gambar akan berjalan apabila bernilai true
   private long delay;       // di beri nilai konstanta
   private int currentX, currentY;  // Pergerakan untuk koordinat 'X' dan 'Y'
   private int width;        // untuk lebar screean
   private int height;       // untuk tinggi screean
   private int x=0;
   private int sw=0;
   //Konstruktor dan inisialisasinya
   public ThreadObjectCanvas() {
      super(true);
      width = getWidth();
      height = getHeight();
      currentX = width / 2;
      currentY = height / 2;
      delay = 20;
   }

   // Method start dijalankan awal peggunaan thread dan di ulang-ulang
   public void start() {
      isPlay = true;
      Thread t = new Thread(this);
      t.start();
   }

   public void stop() {
      isPlay = false;
   }

   // method run abstrak dari Runnable Mejalankan pertamakali pada graphics
   public void run() {
   Graphics g = getGraphics();
```

```
      while (isPlay == true) {
         x++;
         if(x<-120) {
            x=0;
         }else{
            x=x-5;
         }
         sw=1-sw;
         drawScreen(g);
         try { Thread.sleep(delay); }
         catch (InterruptedException ie) { }
      }
   }



   // Method drawScreen untuk menggambar Graphics
   private void drawScreen(Graphics g) {
      try {
         g.setColor(255,255,255);
         g.fillRect(0,0,getWidth(),getHeight());
         Image image = Image.createImage("/gbr-bg.png");
         g.drawImage(image, x, (getHeight()-image.getHeight())/2,
                     Graphics.TOP | Graphics.LEFT);
         String oby="";
         if(sw==0) {
            oby="/obyek1.png";
         }else{
            oby="/obyek2.png";
         }
         Image image2 = Image.createImage(oby);
         g.drawImage(image2, 40, (getHeight()-image.getHeight())/2,
                     Graphics.TOP | Graphics.LEFT);
      }catch(Exception e){ }
      flushGraphics();
   }
}
```

Hasil :


+5550000 - DefaultColorPhone
MIDlet View Help
Sun
1 2 ABC 3 DEF
4 GHI 5 JKL 6 MNO
7 PQRS 8 TUV 9 WXYZ
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+5550000 - DefaultColorPhone
MIDlet View Help
Sun
1 2 ABC 3 DEF
4 GHI 5 JKL 6 MNO
7 PQRS 8 TUV 9 WXYZ
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