CS003B
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Design Document PT20.1 Rectangles

Step 1: Find out which methods you are asked to supply.
Make a slider that duplicates a lot of rectangles

Step 2: Specify the public interface.
Public Class RectangleMover
Public Class Frame
Public Class Tester

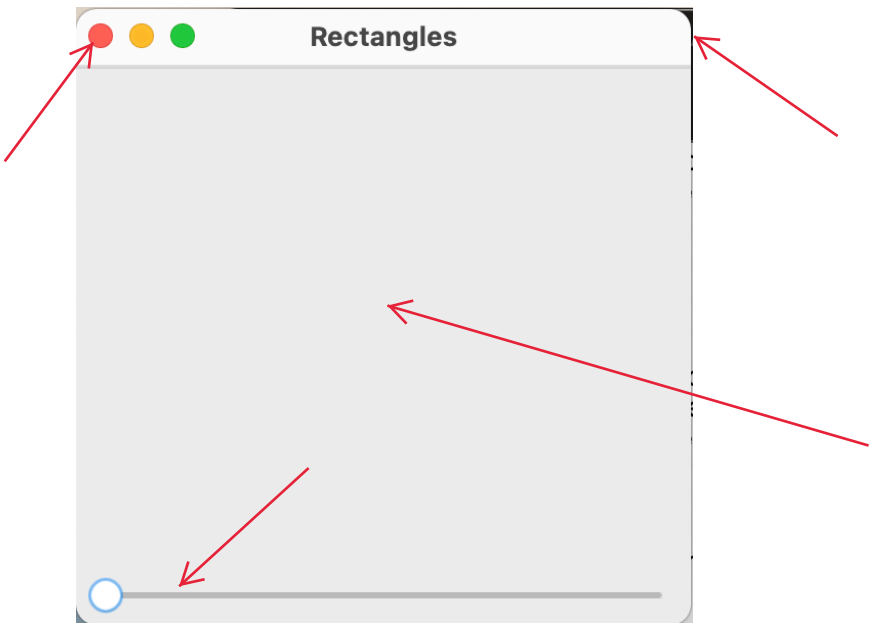
Step 3: Document the public interface.
// implements the frames to move the about on the frames
Public Class RectangleMover
{
}

// draws the frame along with a slider that has an action listener
Public Class Frame
{

}

// this calls the program gui to the user
Public Class Tester
{

}



Step 4: Determine instance variables.

```
  private RectangleMover rectHolder;
  private JSlider slider;
   private List rectangles;
   private int rCount;
   private Rectangle2D.Double box;
   private static final double BWidth = 20;
   private static final double BHeight = 30;
```

Step 5: Implement constructors and methods.

```
      @Override
      public void stateChanged(ChangeEvent e)
      {
         // slider increments turn to values
         int value = ((JSlider)e.getSource()).getValue();
         rectHolder.setRectangle(value);
      }

   public RectangleMover()
   {
      rectangles = new ArrayList();
      rectangles.add(getRandomRectangle());

   }

   public void setRectangle (int newCount)
   {
      //re displays the rectangles depending on the slider position
      rCount = newCount;
      repaint();

   }

   private Rectangle getRandomRectangle()
   {
      // sets the size of the rectangles
      Random rect = new Random();
      return new Rectangle(rect.nextInt(2000),rect.nextInt(20),
rect.nextInt(40)+10,rect.nextInt(40)+10);
   }

@Override
   public void paintComponent(Graphics g)
   {
      // actually draws them
      super.paintComponent(g);
      Graphics2D g2 = (Graphics2D) g;
      Random generator = new Random();
      for (int i = 0; i < rCount ; i++)
      {
         double x = getWidth() * generator.nextDouble();
         double y = getHeight() *generator.nextDouble();
```

```
            box = new Rectangle2D.Double (x,y,BWidth, BHeight);
            g2.draw(box);
        }

    }
```

Step 6: Test your class.