CS221 HW on Swing Components

Worth: 2 pts. Due; Monday, March 24, 2014

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Read the Java Sun Tutorial on Swing <http://download.oracle.com/javase/tutorial/ui/features/components.html>

Answer the following:

1. Find the component that best fits each of the following needs. Write down the Java class name where it is defined.

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|  | Component’s Name |  |
| a) | Color chooser | A component that lets the user pick a color. |
| b) | JLabel | A component that can display unselectable text. It does NOT react to user clicks. |
| c) | Radio buttons | Components which consists of groups of buttons in which, by convention, only one button at a time can be selected. |
| d) | Jsliders | A component that lets the user easily enter a numeric value bounded by a minimum and maximum value. |
| e) | JPanel | A container that displays two components, either side by side or one on top of the other. |
| f) | Checkboxes | A component that lets the user choose one of several choices. |
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Read the Java Tutorial on Graphics2D and answer the following Questions:

(<http://download.oracle.com/javase/tutorial/2d/basic2d/index.html> )

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| --- | --- | --- | --- |
| Descriptive name of the graphic type | Name of Java class where this graphic type is defined | Example and explanation of creating this object using the appropriate constructor call | 2 methods in this class, their signature, and a brief explanation of how this method can be used. |
| Point | Java.awt.geom | Point2D.point = new Pointe2D.Double(x,y);  The Point2D class defines a point representing a location in (x,y) coordinate space. | point.clone()  Creates a new object of the same class and with the same contents as this object.  Point.distance(double px,doublepy);  Returns the distance from this Point2D to a specified point. |
| Line | Java.awt.geom | Line2D line = new Line2D.Double(x1,y1,x2,y2);  This Line2D represents a line segment in (x,y) coordinate space. | **line.**[**clone**](http://docs.oracle.com/javase/7/docs/api/java/awt/geom/Line2D.html#clone())()  Creates a new object of the same class as this object.  **line.**[**contains**](http://docs.oracle.com/javase/7/docs/api/java/awt/geom/Line2D.html#contains(double, double))(double x, double y)  Tests if a specified coordinate is inside the boundary of this Line2D. |
| Curve | Java.awt.geom | QuadCurve2D curve = new QuadCurve2D.Double(double x1, double y1, double ctrlx, double ctrly, double x2, double y2)); | **curve.**[**setCurve**](http://docs.oracle.com/javase/7/docs/api/java/awt/geom/QuadCurve2D.Double.html#setCurve(double, double, double, double, double, double))(double x1, double y1, double ctrlx, double ctrly, double x2, double y2)  Sets the location of the end points and control point of this curve to the specified double coordinates.  **curve.**[**getBounds2D**](http://docs.oracle.com/javase/7/docs/api/java/awt/geom/QuadCurve2D.Double.html#getBounds2D())()  Returns a high precision and more accurate bounding box of the Shapethan the getBounds method. |
| Rectangle | Java.awt.geom | Rectangle2D rectangle = new Rectangle.Double((double x, double y, double w, double h);  The Rectangle2D class describes a rectangle defined by a location (x,y) and dimension (w x h). | **rectangle.**[**createIntersection**](http://docs.oracle.com/javase/7/docs/api/java/awt/geom/Rectangle2D.Double.html#createIntersection(java.awt.geom.Rectangle2D))([**Rectangle2D**](http://docs.oracle.com/javase/7/docs/api/java/awt/geom/Rectangle2D.html) r)  Returns a new Rectangle2D object representing the intersection of thisRectangle2D with the specified Rectangle2D.  **rectangle.**[**createUnion**](http://docs.oracle.com/javase/7/docs/api/java/awt/geom/Rectangle2D.Double.html#createUnion(java.awt.geom.Rectangle2D))([**Rectangle2D**](http://docs.oracle.com/javase/7/docs/api/java/awt/geom/Rectangle2D.html) r)  Returns a new Rectangle2D object representing the union of thisRectangle2D with the specified Rectangle2D. |
| Arc | Java.awt.geom | Arc2D arc = new Arc2D.Double(double x, double y, double w, double h, double start, double extent, int type)  Constructs a new arc, initialized to the specified location, size, angular extents, and closure type. | arc.[**getAngleExtent**](http://docs.oracle.com/javase/7/docs/api/java/awt/geom/Arc2D.Double.html#getAngleExtent())()  Returns the angular extent of the arc.  arc.[**getAngleStart**](http://docs.oracle.com/javase/7/docs/api/java/awt/geom/Arc2D.Double.html#getAngleStart())()  Returns the starting angle of the arc. |