**GRAPHICS**

**(0,0)**

**(799,599)**

**X goes across**

**Y**

**goes**

**down**

This example represents a 'window' that is 800 X 600 pixels.

|  |  |  |
| --- | --- | --- |
| **method name** | **description** | **example** |
| setColor(x) | *sets the current drawing color to x* | window.setColor(Color.red); |
| drawString(s,x,y) | *draws a String s at location (x,y)* | window.drawString ("hello", 500,200); |
| drawLine(x1,y1,x2,y2) | *draws a straight line connecting points (x1,y1) and (x2, y2)* | window.drawLine(0,0,629,479); |
| drawOval(x,y,w,h) | *draws an empty oval with upper left corner at (x,y) and width w and height h* | window.drawOval(500,300,40,40); |
| fillOval(x,y,w,h,) | *draws a filled oval at (x,y) width w and height h* | window.fillOval(500,300,40,40); |
| drawRect(x1,y1,w,h) | *draws an empty rectangle at (x,y) with width w and height h* | window.drawRect(340, 220, 120, 80); |
| fillRect(x1,y1,w,h) | *draws an filled rectangle at (x,y) with width w and height h* | window.fillRect(341, 221, 119, 79); |
| drawArc(x,y,w,h,startAngle, arcAngle) | *draws an arc at (x,y) height h width w. startAngle is at "3:00" and arcAngle is in degrees counterclockwise* | window.drawArc(100,100,50,50,0,-180); |
| fillArc(x,y,w,h,startAngle, arcAngle) | *draws an arc with "center" at (x,y) height h width w. startAngle is at "3:00" and arcAngle is in degrees counterclockwise that is FILLED* | window.fillArc(100,100,50,50,0,-180); |

To instantiate a new font:

import java.awt.Font;

Font f1 = new Font ("Garamond", style , 11); //   (style = Font.BOLD, Font.ITALIC, Font.PLAIN)  
window.setFont(f1);

To instantiate a new color:

Color c = new Color(40,50,30); //RGB values

window.setColor(c);

|  |  |  |
| --- | --- | --- |
| ***Colors Available (upper or lower case will work)*** | | |
| magenta | black | green |
| orange | blue | gray |
| pink | cyan | darkGray |
| red | yellow | lightGray |
| white |  |  |

RGB Triplets:

FF0000 = red

00FF00 = green

0000FF = blue

Search "RGB Triplets" to get more colors

To create a custom color:

Color c = new Color(40,50,30);

window.setColor(c);

import javax.swing.JFrame;

public class GraphicsRunner extends JFrame

{

private static final int WIDTH = 800;

private static final int HEIGHT = 600;

Use this program to "run" your other graphics programs.

public GraphicsRunner()

{

super("Graphics Runner");

setSize(WIDTH,HEIGHT);

getContentPane().add(new Circles());

setVisible(true);

}

public static void main( String args[] )

{

GraphicsRunner run = new GraphicsRunner();

}

}

import java.awt.Graphics;

import java.awt.Color;

import java.awt.Canvas;

public class Circles extends Canvas

**paint** is called automatically when you instantiate the class containing the **paint** method.

{

public Circles()

{

setBackground(Color.white);

}

public void paint( Graphics window )

{

window.setColor(Color.black);

window.drawString("Circles - Ovals", 50, 50);

window.setColor(Color.blue);

window.setColor(Color.green);

window.drawOval(400,100,100,50);

window.setColor(Color.yellow);

window.fillOval(250,250,90,90);

window.setColor(Color.red);

window.fillOval(50,150,50,50);

}

}

**Graphics1** – Draw the following on your screen (outside box indicates edge of graphics window; you do not have to draw the outside box).

Your name here

Ursuline Academy of Dallas

Graphics 1

Graphics1

**Graphics2** –

Requirements:

* make each shape a different color
* make all text a different color
* use a different font for each
* create and use at least 3 custom colors
* use Java api to include the following shapes (anywhere on the screen)
  + fill3DRect (Google "Java api fill3dRect")
  + drawRoundRect
  + drawPolygon

write a personal

inspirational message here

your name here

your favorite food

* Divide the window into 4 quadrants with 2 lines.
* Generate 4 random filled squares/circles/triangles/lines in each quadrant.
* Do not let the squares/circles/triangles/lines cross over the lines when the screen is refreshed
* Use loops for the shapes.
* Do not hardcode 4 separate shapes.

Use the following formula to generate random numbers:

int n = (int) (Math.random( ) \* (max - min + 1) + min);

Graphics1

Instructor Initials \_\_\_\_\_\_\_