

Exercise 4.1

/* Saket Bakshi, Period 6

Question 4.1 of Ch 3 project. This program prints the number of classes I would use to print several cars and houses.

*/

```
public class Ch3ProjectQ4_1SBakshi
{
    public static void main(String[] args)
    {
        System.out.println("I would have a class for the frame, a class for making the
components, a class for making the cars, and a class for making the houses.");
    }
}
```

```
PS C:\Users\saket\JAVA\Projects\project3\Ch3ProjectQ4SBakshi> javac *.java
PS C:\Users\saket\JAVA\Projects\project3\Ch3ProjectQ4SBakshi> java Ch3ProjectQ4_1SBakshi
I would have a class for the frame, a class for making the components, a class for making the cars, and a class for making the houses.
PS C:\Users\saket\JAVA\Projects\project3\Ch3ProjectQ4SBakshi>
```

Exercise 4.2

/* Saket Bakshi, Period 6

Question 4.2 of Ch 3 project. This program creates a house class for a position, with the top left corner of the rectangle of the house being the constructor explicit argument.

*/

```
import java.awt.Graphics2D;
import java.awt.Rectangle;
import java.awt.geom.Ellipse2D;
import java.awt.geom.Line2D;
```

```
public class House
{
    private int xLeft;
    private int yTop;

    /**Constructs a house with a given top left corner for the house rectangle.
    @param x the x-coordinate for the corner
    @param y the y-coordinate for the corner
    */
    public House(int x, int y)
    {
        this.xLeft = x;
        this.yTop = y;
    }
}
```

```

    }

    /**Draws the house
    @param g2 the graphics context
    */
    public void draw(Graphics2D g2)
    {
        Line2D.Double ceiling = new Line2D.Double(xLeft, yTop + 40, xLeft + 110, yTop
+ 40);
        Line2D.Double roof1 = new Line2D.Double(xLeft, yTop + 40, xLeft + 55, yTop);
        Line2D.Double roof2 = new Line2D.Double(xLeft + 110, yTop + 40, xLeft + 55,
yTop);
        Rectangle houseBody = new Rectangle(xLeft + 10, yTop + 40, 90, 70);
        Rectangle door = new Rectangle(xLeft + 40, yTop + 60, 30, 50);
        Ellipse2D.Double knob = new Ellipse2D.Double(xLeft + 45, yTop + 85, 5, 5);

        g2.draw(ceiling);
        g2.draw(roof2);
        g2.draw(roof1);
        g2.draw(houseBody);
        g2.draw(door);
        g2.draw(knob);
    }
}

```

Exercise 4.3

/* Saket Bakshi, Period 6

Question 4.3 of Ch 3 project. This program creates a component class for printing two houses and two cars.

*/

```

import java.awt.Graphics;
import java.awt.Graphics2D;
import javax.swing.JComponent;

/**
    This component draws 2 cars and 2 houses
    */
public class Component extends JComponent
{
    public void paintComponent(Graphics g)
    {
        Graphics2D g2 = (Graphics2D) g;

```

```

        Car car1 = new Car(0,0);
        Car car2 = new Car(80,0);
        House house1 = new House(0,40);
        House house2 = new House(0,170);

        car1.draw(g2);
        car2.draw(g2);
        house2.draw(g2);
        house1.draw(g2);
    }
}

```

Exercise 4.4

/* Saket Bakshi, Period 6

Question 4.4 of Ch 3 project. This program views
two houses and two cars.

*/

```

import javax.swing.JFrame;

public class Viewer
{
    public static void main(String[] args)
    {
        JFrame frame = new JFrame();

        frame.setSize(300,400);
        frame.setTitle("two cars and two houses");
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

        Component component = new Component();
        frame.add(component);

        frame.setVisible(true);
    }
}

```

