CREATING YOUR OWN CLASSES:
THE *CAR* CLASS

In this lesson we are going to create a **Car** class that animates an image of a car across the screen. Our **Car** class will need to include the following fields, constructors and methods:

FIELDS

```
private int xPos, yPos;
private Image imgCar;
private int panelHeight, panelWidth;
```

The **xPos** and **yPos** variables will store the position of the car. The **Image** object will store the image of the car (you can find the image in the **Classroom Rosters** folder. Finally, the **panelHeight** and **panelWidth** variables will store the dimensions of the panel which will be important for setting the initial **y-position** of the car and for determining when the car moves off the screen.

CONSTRUCTORS

We are going to create a **no-arg** constructor which uses a default image.

```
public Car()
```

METHODS

```
public void setFrame(int width, int height)
```

This method will initialize the width and height of the panel and set the x- and y-position of the car.

```
public Image getImage()
```

This method must return the image of the car.

```
private int getCarWidth()
```

This method returns the width of the car image.

```
private int getCarHeight()
```

This method returns the height of the car image.

```
public void move()
```

This method increases the car's x-position by 5 pixels. Within this method you will also need to check if the car has moved off the screen and reset its position to the start if it has.

```
public int getX()
```

This method returns the car's x-position.

```
public int getY()
```

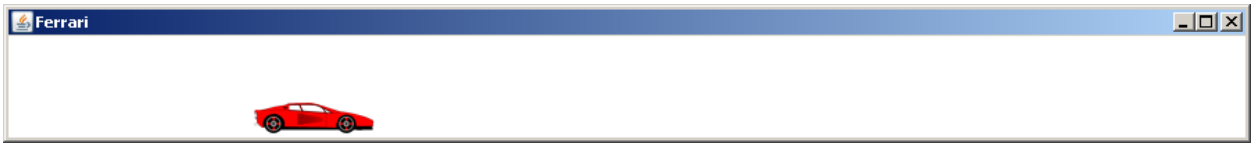
This method returns the car's y-posiiton.

Once you have created the **Car** class and written the code for the constructors and methods, test the program by creating a **FerrariDemo** program as follows:

```
import java.awt.*;
import java.awt.event.*;
import javax.swing.*;

public class FerrariDemo extends JPanel implements ActionListener
{
   // Declare global variables
   private Car ferrari;
   private Timer t;
   private final int WIDTH = 900;
   private final int HEIGHT = 100;

   public static void main(String[] args)
   {
      new FerrariDemo ();
   }

   public FerrariDemo ()
   {
      // Declare and initialize a Car object
      ferrari = new Car();

      // Set the properties of the JPanel
      setLayout(null);
      setBackground(Color.WHITE);

      // Declare, initialize and set properties of the JFrame
      JFrame frame = new JFrame();
      frame.setContentPane(this);
      frame.setSize(WIDTH, HEIGHT);
      frame.setTitle("Ferrari");
      frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
      frame.setLocationRelativeTo(null);
      frame.setVisible(true);

      // Set the dimensions of the frame where the car will be moving
      ferrari.setFrame(getWidth(), getHeight());
```

```
      // Initialize the timer and set the interval to 10 milliseconds
      t = new Timer(10, this);

      // Start the timer
      t.start();
   }

   public void actionPerformed(ActionEvent e)
   {
      // Move the car and then repaint the image
      ferrari.move();
      repaint();
   }

   public void paintComponent(Graphics g)
   {
      // Draw the image on the screen
      super.paintComponent(g);
      Graphics2D g2 = (Graphics2D) g;
      g2.drawImage(ferrari.getImage(), ferrari.getX(), ferrari.getY(),
          this);

   }
}
```

Your program output should look something like this:



Save the project as **Car Class** in your **UNIT 4** folder.