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// import the javafx libraries import javafx.application.Application;
import javafx.scene.Scene; import javafx.scene.layout.Pane; import
javafx.scene.paint.Color; import javafx.scene.shape.Arc; import javafx.scene.shape.ArcType;
import javafx.scene.shape.Circle; import javafx.scene.shape.Ellipse; import
javafx.scene.shape.Polygon; import javafx.stage.Stage;

// create a class that extends Application public class SmileyFace extends
Application {

// override the start method
@Override
public void start(Stage primaryStage) {

    // create a pane to hold the shapes
    Pane pane = new Pane();

    // create a circle for the face
    Circle face = new Circle(200, 200, 150);
    face.setFill(Color.WHITE);
    face.setStroke(Color.BLACK);

    // create two ellipses and circles for the eyes
    Ellipse leftEye = new Ellipse(140, 150, 30,20);
    Circle leftPupil= new Circle(142,150,18);
    leftEye.setFill(Color.WHITE);
    leftEye.setStroke(Color.BLACK);
    Ellipse rightEye = new Ellipse(260, 150, 30,20);
    Circle rightPupil= new Circle(262,150,18);

    rightEye.setFill(Color.WHITE);
    rightEye.setStroke(Color.BLACK);

    //create a nose
    // create a polygon for the nose
    Polygon nose = new Polygon();
    nose.getPoints().addAll(new Double[]{
        240.0, 250.0, //1st Edge
        170.0, 250.0, //2nd Edge
        200.0, 190.0 // Final Edge
    });
    nose.setFill(Color.WHITE);
    nose.setStroke(Color.BLACK);

    // create an arc for the mouth
    Arc mouth = new Arc(200, 250, 80, 50, 180, 180);
    mouth.setFill(Color.WHITE);
    mouth.setStroke(Color.BLACK);

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mouth.setType(ArcType.OPEN);

// add the shapes to the pane
pane.getChildren().addAll(face, leftEye, leftPupil, nose, rightEye, rightPupil, mouth);

// create a scene and place it in the stage
Scene scene = new Scene(pane, 400, 400);
primaryStage.setTitle("Smiley Face");
primaryStage.setScene(scene);
primaryStage.show();
}

// launch the application
public static void main(String[] args) {
    launch(args);
}
}

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