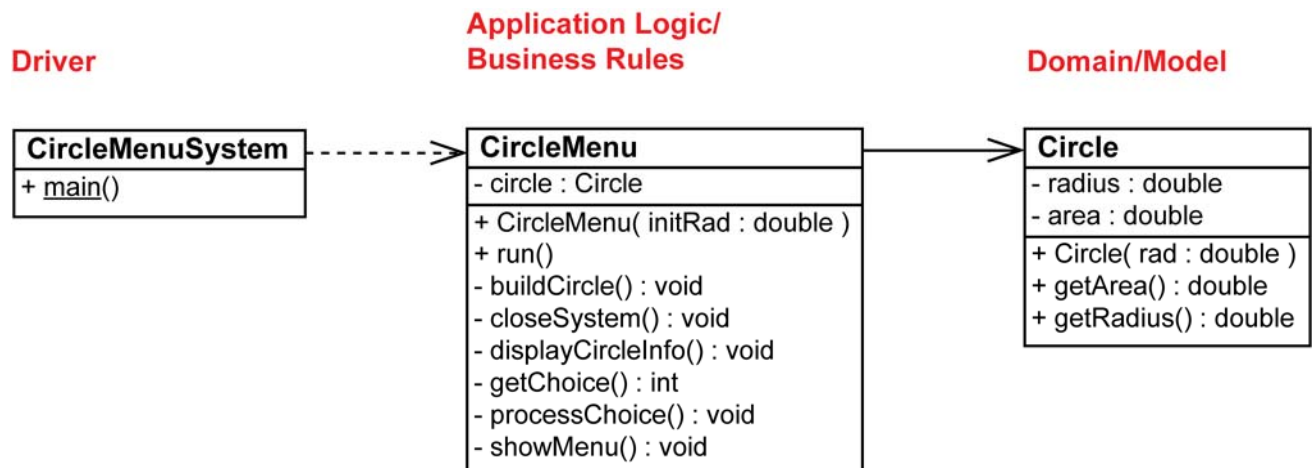


## CS 1301 – Ch 8, Handout 4

This section discusses a way to build a menu system.

### A Simple Framework for a Menu Driven System

1. Run code.
2. UML



3. The Circle class

```
public class Circle
{
    private double radius = 0.0;

    private double area = 0.0;

    public Circle( double radius )
    {
        this.radius = radius;

        this.area = Math.PI * Math.pow(this.radius, 2.0);
    }

    public double getRadius()
    {
        return radius;
    }

    public double getArea()
    {
        return area;
    }
}
```

4. The CircleMenuSystem class. This is the driver. It initializes the menu system and then “runs” it.

```
public class CircleMenuSystem
{
    public static void main( String[] args )
    {
        CircleMenu cMenu = new CircleMenu( Math.random()*10.0 );
        cMenu.run();
    }
}
```

5. The CircleMenu class.

```
import java.util.*;

public class CircleMenu
{
    private Circle circle;

    public CircleMenu( double defaultRadius )
    {
        circle = new Circle( defaultRadius );
    }

    public void run()
    {
        int choice = 0;

        do
        {
            showMenu();
            choice = getChoice();
            processChoice( choice );
        }
        while( choice != 3 );
    }

    private void buildCircle()
    {
        Scanner s = new Scanner( System.in );
        System.out.print( "\nEnter circle radius: " );
        double radius = s.nextDouble();
        circle = new Circle( radius );

        System.out.println( circle.getRadius() );
    }

    private void closeSystem()
    {
        System.out.println( "\nGood-bye" );
    }
}
```

```

private void displayCircleInfo()
{
    System.out.printf( "\nCircle radius: %.2f, area: %.2f\n",
                      circle.getRadius(), circle.getArea() );
}

private int getChoice()
{
    Scanner s = new Scanner( System.in );
    System.out.print( "\nEnter choice: " );
    return s.nextInt();
}

private void processChoice( int choice )
{
    switch( choice )
    {
        case 1: buildCircle(); break;
        case 2: displayCircleInfo(); break;
        case 3: closeSystem(); break;
    }
}

private void showMenu()
{
    System.out.println( "\nPlease choose one of the following options" );
    System.out.println();
    System.out.println( "1. New Circle" );
    System.out.println( "2. Display Circle Information" );
    System.out.println( "3. Exit" );
}
}

```