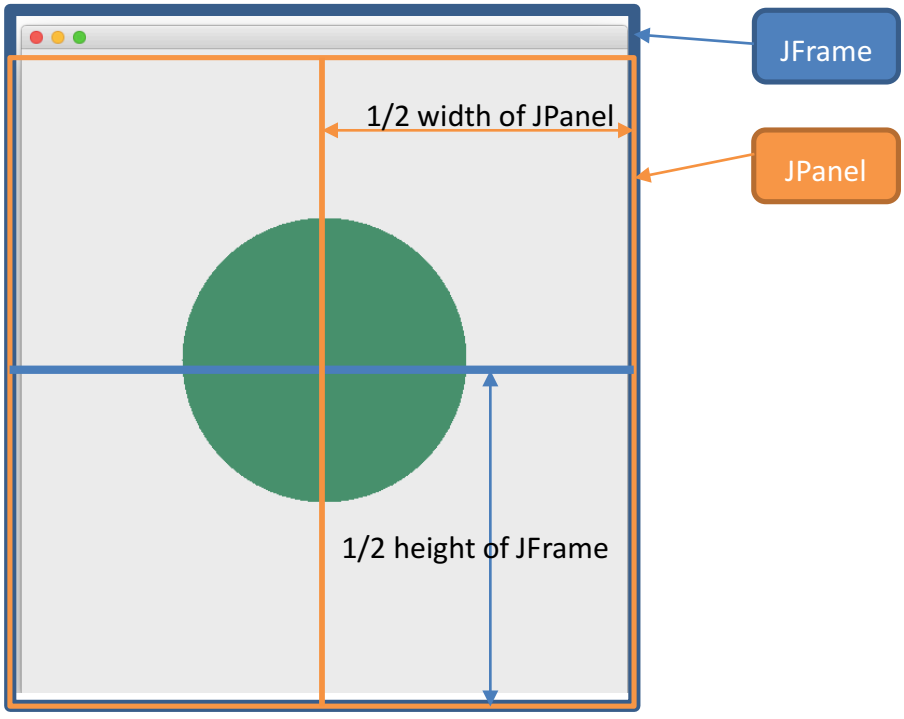
JAVA LAB 2 (4)

Write an Application that ask user to input 0 or 1 to select the shape in the **command windows** and then you need to draw the picture on the JPanel. If the user types 0, you need to draw a square. If the users type 1, you need to draw a circle.

Requirement:

1. You can't use any static field and method except the main function.
2. The color of the pictures must be created at random when you change the size of JFrame.
3. The radius of the picture must be created at random (20≤ r ≤ 150) in the beginning and be fixed when you change the size of JFrame.
4. The center of the picture must be located at the half of the height of JFrame and the half of the width of JPanel.



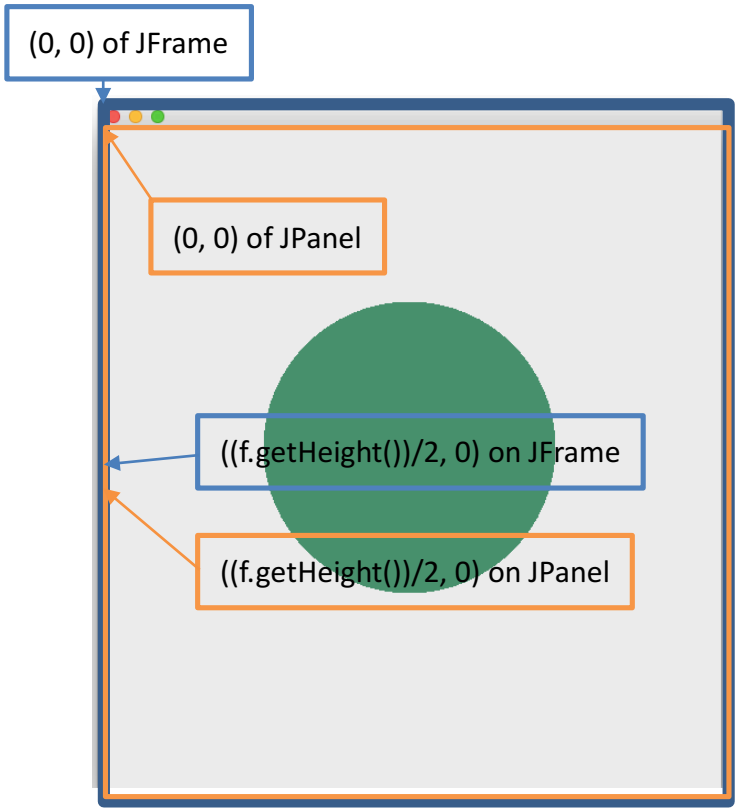
Tips：

1. 會用到的 Class

```
import java.awt.*;
```

```
import java.util.Scanner;
import javax.swing.*;
```

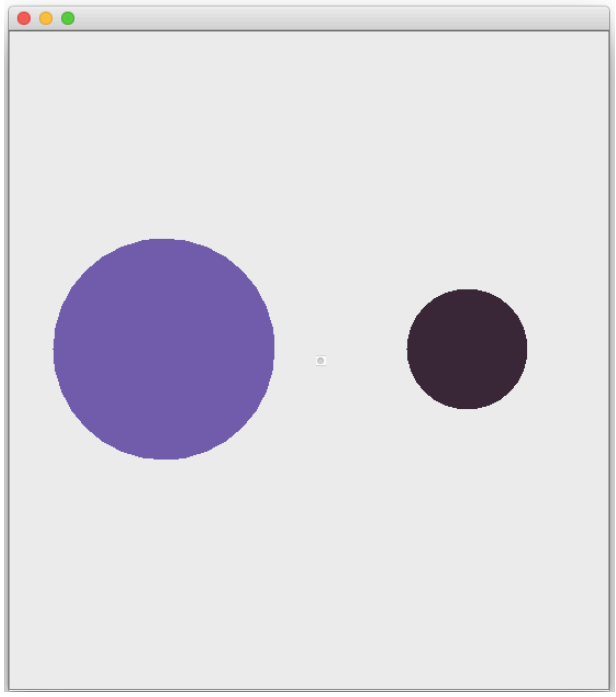
2. setVisible()
3. paintComponent()
4. setColor(new Color(int r, int g, int b)) // **0≤ r,g,b ≤ 255**
5. fillOval(int x, int y, int width, int height)
   // For circle, width == height == 2*radius
6. fillRect(int x, int y, int width, int height)
7. setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE)
8. b = (int)(Math.random()*100); ➔ b may be 0-100;
9. getHeight() getWidth()
10. JFrame f = new JFrame();
    f.getHeight();
    // The returned value is with respect to the origin of JFrame. However, we are drawing on the JPanel with respect to the origin of itself. Therefore we need to do coordinate transformation.



11. Point pt = SwingUtilities.convertPoint(frame, fx, fy, this);
    // "this" refers to JPanel, (fx, fy) is the point on the JFrame
    // int x = pt.x; int y = pt.y;

Advance:

Use **JSplitpane** to show two panel at once. The example is as shown below.



Tips：

1. `import javax.swing.JSplitPane;`
2. https://docs.oracle.com/javase/8/docs/api/javax/swing/JSplitPane.html

   ```
   JSplitPane(int newOrientation, Component newLeftComponent, Component newRightComponent)
   ```
   Creates a new JSplitPane with the specified orientation and the specified components.

3. `setResizeWeight(0.5);`