

Fishes Swimming

(and here comes the Shark!)

Mac/New Version of Eclipse

```
import java.awt.*;
import java.awt.event.*;
import javax.swing.*;
import javax.swing.border.*;
public class FishSwim extends JPanel implements ActionListener {
    //TO DO: add fishes to ocean
    int ocean[] [] = {{1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1},
        {1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1},
        {1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1},
        {1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1},
        {1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1},
        {1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1},
        {1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1},
        {1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1}};

    int row = 8;
    int col = 12;
    int x = 0;
    int y = 0;
    int munch = 0;
    JLabel eaten;
    JLabel feedback;
    JLabel pics[] = new JLabel [row * col];

    public FishSwim () {
        setBackground (new Color(80,163,213));

        //TO DO: Add JLabel for Title

        //code to build the screen
        Panel grid = new Panel (new GridLayout (row, col));
        int m = 0;
        for (int i = 0 ; i < row ; i++) {
            for (int j = 0 ; j < col ; j++) {
                pics [m] = new JLabel (createImageIcon ("f" + ocean [i] [j] + ".png"));
                pics [m].setPreferredSize (new Dimension (32, 32));
                pics[m].setBackground (new Color(80,163,213));
                grid.add (pics [m]);
                m++;
            }
        }
        add (grid);

        //Movement buttons
        JButton up = new JButton ("up");
        up.setActionCommand ("up");
        up.addActionListener (this);
        add (up);
        JButton left = new JButton ("left");
        left.setActionCommand ("left");
        left.addActionListener (this);
        add (left);
        JButton down = new JButton ("down");
        down.setActionCommand ("down");
        down.addActionListener (this);
        add (down);
        JButton right = new JButton ("right");
        right.setActionCommand ("right");
        right.addActionListener (this);
        add (right);

        //set up labels for feedback
        eaten = new JLabel("The shark has eaten "+munch+" fishes.");
        add(eaten);
        feedback= new JLabel("Click on the buttons to move.");
        add(feedback);
        //move shark to the start position
        pics [x * col + y].setIcon (createImageIcon ("shark.png"));
    }
}
```

```

public void actionPerformed (ActionEvent e) {

    //Left direction -----
    if (e.getActionCommand ().equals ("left")){
        if (y - 1 < 0)
            feedback.setText ("Off the board!!");
        else {
            if (ocean [x] [y - 1] != 1) {
                munch++;
                ocean[x][y-1]=1;
                eaten.setText("The shark has eaten "+munch+" fishes.");
            }
            feedback.setText ("OK! Moving left.");
            pics [x * col + y].setIcon (createImageIcon ("f1.png"));
            y--;
            pics [x * col + y].setIcon (createImageIcon ("shark.png"));
        }
    }
    //Up direction -----
    else if (e.getActionCommand ().equals ("up")) {
        if (x - 1 < 0)
            feedback.setText ("Off the board!!");
        else {
            if (ocean [x - 1] [y] != 1) {
                munch++;
                ocean[x-1][y]=1;
                eaten.setText("The shark has eaten "+munch+" fishes.");
            }
            feedback.setText ("OK! Moving up.");
            pics [x * col + y].setIcon (createImageIcon ("f1.png"));
            x--;
            pics [x * col + y].setIcon (createImageIcon ("shark.png"));
        }
    }
    //Down direction -----
    else if (e.getActionCommand ().equals ("down")) {
        if (x + 1 >= row)
            feedback.setText ("Off the board!!");
        else{
            if (ocean [x + 1] [y] != 1){
                munch++;
                ocean[x+1][y]=1;
                eaten.setText("The shark has eaten "+munch+" fishes.");
            }
            feedback.setText ("OK! Moving down.");
            pics [x * col + y].setIcon (createImageIcon ("f1.png"));
            x++;
            pics [x * col + y].setIcon (createImageIcon ("shark.png"));
        }
    }
    //Right direction -----
    else if (e.getActionCommand ().equals ("right")) {
        if (y + 1 >= col)
            feedback.setText ("Off the board!!");
        else {
            if (ocean [x] [y + 1] != 1){
                munch++;
                ocean[x][y+1]=1;
                eaten.setText("The shark has eaten "+munch+" fishes.");
            }
            feedback.setText ("OK! Moving right.");
            pics [x * col + y].setIcon (createImageIcon ("f1.png"));
            y++;
            pics [x * col + y].setIcon (createImageIcon ("shark.png"));
        }
    }
}

//TO DO: fix so win happens if the shark has eaten 15 fishes
// Also, instead of "alert", fix dialog so it says: you win!
if(munch>=2)
    JOptionPane.showMessageDialog (null, "alert", "alert", JOptionPane.INFORMATION_MESSAGE);
}

protected static ImageIcon createImageIcon (String path) {
    java.net.URL imgURL = FishSwim.class.getResource (path);
}

```

```
        if (imgURL != null)
            return new ImageIcon (imgURL);
        else
            return null;
    }
    public static void main (String[] args)
    {
        JFrame.setDefaultLookAndFeelDecorated (true);
        JFrame frame = new JFrame ("The Shark is Coming!!");
        frame.setDefaultCloseOperation (JFrame.EXIT_ON_CLOSE);
        JComponent newContentPane = new FishSwim ();
        newContentPane.setOpaque (true);
        frame.setContentPane (newContentPane);
        frame.setSize (430, 350);
        frame.setVisible (true);
    }
}
```