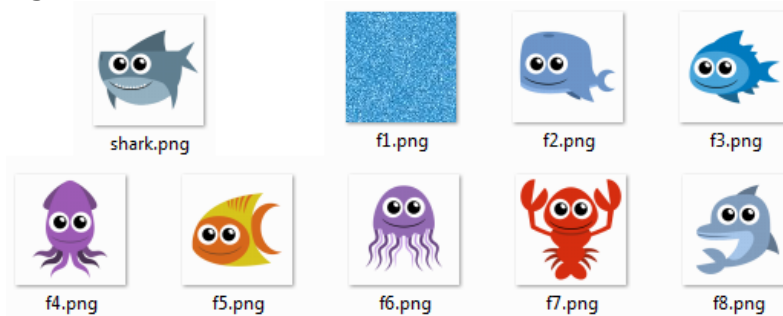


Fishes Swimming

In this program, the shark moves around eating fishes in the ocean.
When the shark eats 15 fishes, the shark wins.

What you need to do:

- Add at least 20 fishes to the ocean.
- Fix the three things indicated by TO DO comments in the program
 - a) Add a title
 - b) Add a comment
 - c) Fix the winning condition



```
import javax.swing.*;
import java.applet.*;
import java.awt.event.*;
import java.awt.*;
public class FishSwim extends Applet implements ActionListener {
    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 pics[] = new JLabel [row * col];
    public void init () {
        resize (880, 660);
        setBackground (new Color(80,163,213));
        //TO DO: Add JLabel for Title

        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 (72, 72));
                pics[m].setBackground (new Color(80,163,213));
                grid.add (pics [m]);
                m++;
            }
        }
        add (grid);
        //TO DO: Add JLabel for instruction

        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);
eaten = new JLabel("The shark has eaten "+munch+" fishes.");
add(eaten);

pics [x * col + y].setIcon (createImageIcon ("shark.png"));
}
public void actionPerformed (ActionEvent e) {
    if (e.getActionCommand ().equals ("left")){
        if (y - 1 < 0)
            showStatus ("Off the board!!");
        else {
            if (ocean [x] [y - 1] != 1) {
                munch++;
                ocean[x][y-1]=1;
                eaten.setText("The shark has eaten "+munch+" fishes.");
            }
            showStatus ("OK! Moving left.");
            pics [x * col + y].setIcon (createImageIcon ("f1.png"));
            y--;
            pics [x * col + y].setIcon (createImageIcon ("shark.png"));
        }
    }
    else if (e.getActionCommand ().equals ("up")) {
        if (x - 1 < 0)
            showStatus ("Off the board!!");
        else {
            if (ocean [x - 1] [y] != 1) {
                munch++;
                ocean[x-1][y]=1;
                eaten.setText("The shark has eaten "+munch+" fishes.");
            }
            showStatus ("OK! Moving up.");
            pics [x * col + y].setIcon (createImageIcon ("f1.png"));
            x--;
            pics [x * col + y].setIcon (createImageIcon ("shark.png"));
        }
    }
    else if (e.getActionCommand ().equals ("down")) {
        if (x + 1 >= row)
            showStatus ("Off the board!!");
        else{
            if (ocean [x + 1] [y] != 1){
                munch++;
                ocean[x+1][y]=1;
                eaten.setText("The shark has eaten "+munch+" fishes.");
            }
            showStatus ("OK! Moving down.");
            pics [x * col + y].setIcon (createImageIcon ("f1.png"));
            x++;
            pics [x * col + y].setIcon (createImageIcon ("shark.png"));
        }
    }
    else if (e.getActionCommand ().equals ("right")) {
        if (y + 1 >= col)
            showStatus ("Off the board!!");
        else {
            if (ocean [x] [y + 1] != 1){
                munch++;
                ocean[x][y+1]=1;
                eaten.setText("The shark has eaten "+munch+" fishes.");
            }
            showStatus ("OK! Moving right.");
            pics [x * col + y].setIcon (createImageIcon ("f1.png"));
            y++;
            pics [x * col + y].setIcon (createImageIcon ("shark.png"));
        }
    }
}
//TO DO: if the shark has eaten 15 fishes
// instead of alert, fix it 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;
}
}
}

```