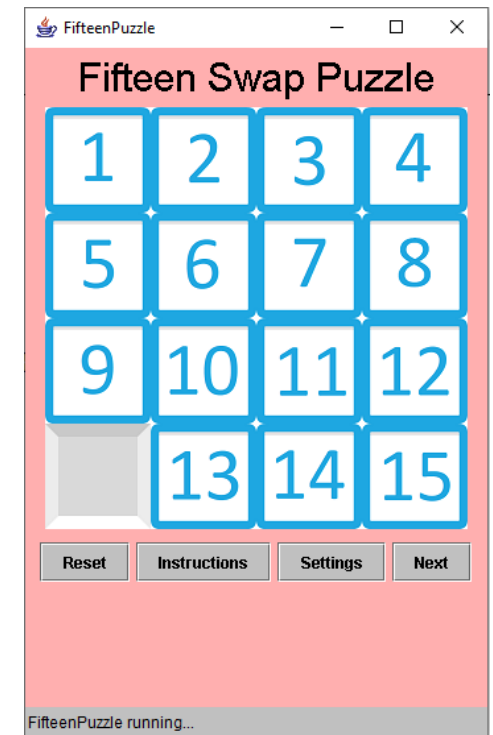


Global Variables

```
//Game screen
JLabel turnPic;
int turn = 1;
int last = -1;
//grid
int row = 4;
int col = 4;
JButton a[] = new JButton [row * col];
int b[] [] = {{1, 2, 3, 4}, {5, 6, 7, 8}, {9, 10, 11, 12}, {0, 13, 14, 15}};
int levelCount = 10;

//Formatting
Color backgroundColour = Color.pink;
Color buttonColour = Color.lightGray;
Color buttonText = Color.black;
Color titleColour = Color.black;
Font titleFont = new Font ("Arial", Font.PLAIN, 30);
Font promptFont = new Font ("Arial", Font.PLAIN, 20);
Dimension boardSquare = new Dimension (80, 80);
```



Two Click Process in ActionPerformed

```
//TO DO: Fill this comment in
```

```
else
{
    int n = Integer.parseInt (e.getActionCommand ());
    if (last == -1)
    {
        last = n;
    }
    else
    {
        if (canGoLeft (last, n))
            swap (last, n);
        //other 3 directions go here
        last = -1;
    }
    redraw ();
}
```

canGoLeft check

```
public boolean canGoLeft (int last, int n)
{
    int startX = last / col;
    int startY = last % col;
    int endX = n / col;
    int endY = n % col;
    if (startX == endX && startY - 1 == endY)
        return true;
    else
        return false;
}
```

startX,
startY-1

startX,
startY

Swap method

```
public void swap (int last, int n)
{
    int startX = last / col;
    int startY = last % col;
    int endX = n / col;
    int endY = n % col;
    int temp = b [startX] [startY];
    b [startX] [startY] = b [endX] [endY];
    b [endX] [endY] = temp;
}
```

startX-1,
startY

startX,
startY-1

startX,
startY

startX,
startY+1

startX+1
, startY

startX-1,
startY

startX,
startY-1

lastX,
lastY

startX,
startY+1

startX+1
, startY