Objectives:
Familiarize yourself with Touch and Multimedia. Create an application that uses touch and sound to add and remove Graphics to the display.

Once you’ve completed this lab you should have a better understanding of Touch and Multimedia.

Overview:
This lab has one part.

Part 1: Touch and Multimedia
In this part, you will modify your bubble application from last week to support touch input. Your new application will get rid of the “Add” and “Remove” buttons and responding to touch input instead. When the application begins it should look something like this.
1. If the user touches the screen and there are no Bubbles at the touch’s position, then your application should add a Bubble to the screen at that touch’s position. After the user has touched the screen several times, your application might look like this:

![Image of a screen with bubbles]

2. If the user touches the screen and there is at least one Bubble that intersects the touch’s position, then the application should remove those bubbles.

3. If the user performs a “fling” gesture whose starting position intersects a visible Bubble, then the application should change the Bubble’s velocity based on the velocity of the fling gesture. If no such Bubble exists then ignore the gesture.

**Implementation Notes:**

1. Download the application skeleton files from the Lectures & Labs web page and import them into your IDE.

2. Modify your bubble view app to support the touch described above. If you want to use your own implementation of last week’s project, then you may need to remove the code for “Add” and “Remove” buttons from your previous lab. You will also need to copy some new code into your project to support touch and sound.

**Deliverables:** Your source code project