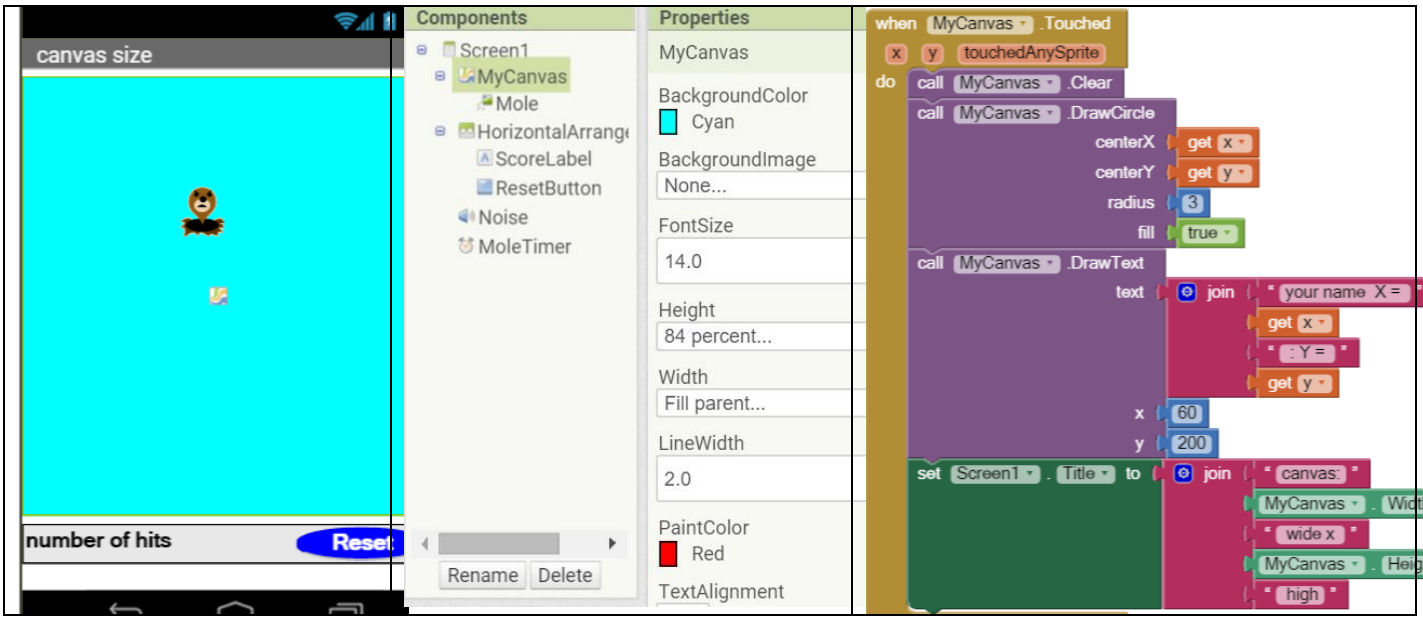
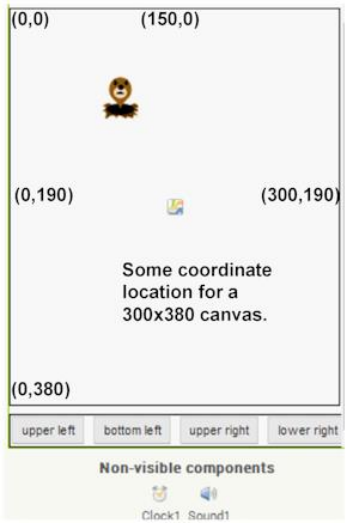
Labs 4 and 5 Animation and Canvas Layout
http://appinventor.mit.edu/explore/ai2/molemash.html
Go to the above website to get tutorial on this app. At the bottom of the narrative just below the bar code, click link to download the aia source code for this app. Upload the source code into you app inventor project screen.

You will modify the app appearance to look like screen below in exact steps below.



In Designer Screen
1. Drop a Horizontal Arrangement below canvas and put inside it both the scorelabel and resetbutton. Pretty it up.
2. Modify MyCanvas exactly as shown in MyCanvas Properties above. Height 84%, Width fill parent etc.
3.
In Blocks screen
1. Create a new block container for MyCanvas.Touched and fill with blocks shown above. Place your name in the text box which instructs you to do same.

The added block allows you to understand how the screen x and y properties work. A very important question on your final exam is derived directly from the knowledge you should aborb in playing with the screen in this app. Now you are done for Lab 4 as far as app construction goes. You can increase timer interval to make the mole easier to touch if you like.



The final exam question has to do with finding points on the canvas once x and y is given or vice versa.
Each time you touch the screen, the canvas coordinates x and y are indicated on the screen from the extra block placed in this app.

The full app inventor design screen is 320 pixels wide by 480 high including screentitle and status bar. That figure actually represents the first generation smartphones original screen resolutions.
The app inventor canvas is like a (x, y) graph where x represent right side horizontal location and y represent downward vertical location.

The box below representing an app inventor screen shows how various points are located on a full sized canvas. The first number in parenthesis is the x or horizontal pixel position from left edge of canvas. 2nd number inside () is the vertical pixel distance from the top of the canvas area.

Lab 5 An Improved Mole Mash game

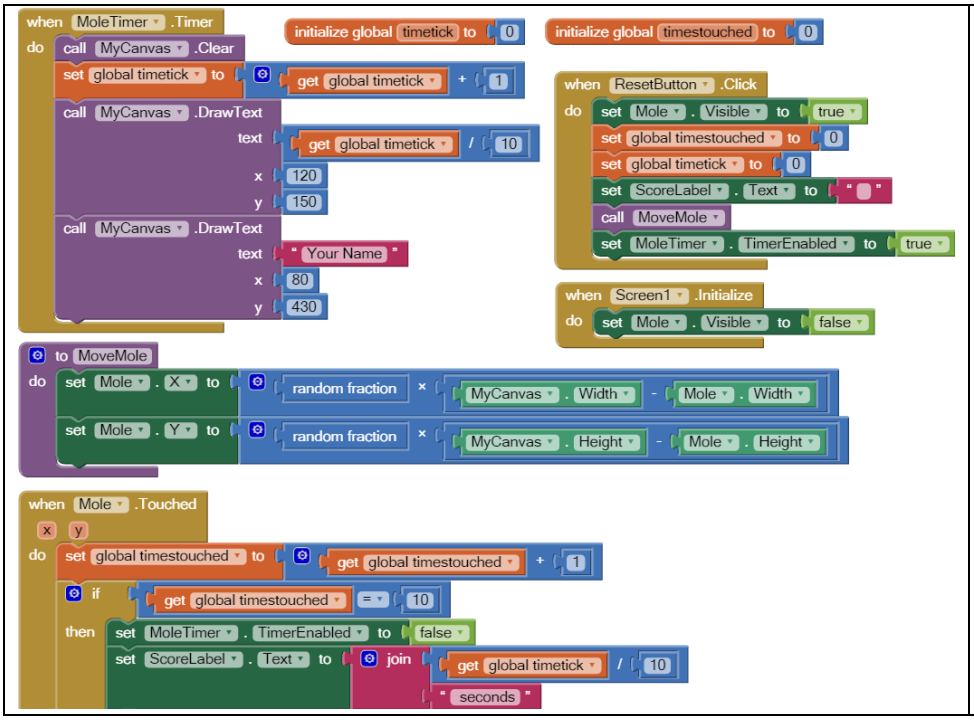
The current MoleMash is just frustrating when you constantly miss the mole and the game can't really keep score for more than one participant unless someone else monitors a clock.

The improved version will make the mole stay in one place as long as it takes for you to be able to touch it. Once touched it will move elsewhere and so forth. Meanwhile an internal stopwatch is running to see how long it will take you to touch the mole 10 times in quick succession. The player with the shortest elapsed time is the winner.

Begin by bringing up your completed MoleMash app and then renaming it to ReactionTest.

In design mode, make your screen look like the apk you should download from Blackboard for lab 5.

In Designer mode, change MoleTimer interval to 100. That means the Timer block routine will update every 1/10 or 0.1 seconds. Remeber 1000 is one second.



Rename and add a 2nd variable to keep track of elapsed time.

Use what you learned about canvas graphics in Lab 4 to place your name in the middle just above lower edge of canvas. You will add another Canvas drawtext block below the one that shows elapsed time.

The only block not all shown at left needed to make the app work is the MoleTouched block.

To see blocks more clearly, open the doc file on BB and enlarge the block image.

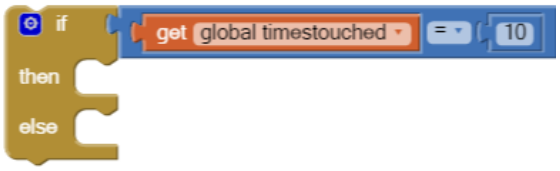
Here's what has to happen each time the mole is touched.

1. Update TimesTouched variable by adding 1 to it just like in original MoleMash.
2. When the tenth touch occurs, (inside the **Then** option)

a. the clock should stop or timer.enabled set to false. b. the mole visible set to false to make it disappear.

3. If it touched less than 10 times (inside the **Else** option) then just call procedure to MoveMole.

2 and 3 is done by a control block shown below.



Go to control blocks near top of blocks screen on left side and drag an If Then block under the update TimeTouched block.
Put mouse pointer on blue circle on top left of If block and plug an else block in the then space. It's like adding to the join text.

In the **<u>then</u>** space, the following blocks are need.

1. Set timer enabled to false to stop timer the moment the 10th touch occurs.
2. set scorelabel to same block as used in Timer.time given above with TimeTick/10 joined (using text join) with space followed by the word seconds.
3. Set mole visible to false
4. Call Noise.Vibrate as in original molemash to alert user that the tenth touch occured.

In the **<u>else</u>** space of the control block, all you need is call movemole procedure.

Now let find out who is this class will have the lowest time to touch mole 10 times.

Report for combined 4 and 5 is due in 2 weeks. Complete the lab Template downloaded from website for this.