Hack BI App Inventor 2 Workshop: The Directions

horizontal line

INSTALLING AND SET UP

1. Log in to https://appinventor.mit.edu/

2. Download the emulator at: https://appinventor.mit.edu/explore/ai2/setup-emulator.html 3. At https://appinventor.mit.edu/, click ‘Start New Project”

4. Name it

*a. Discuss the components*

CREATING THE COLOR BUTTONS

1. Drag a Button component onto the Viewer, change its Text attribute to “Red”, and then make its BackgroundColor red.

2. In the Viewer, in the components list, click Button1 to highlight it (it might already be highlighted) and click Rename to change its name from Button1 to RedButton. Note that spaces aren’t allowed in component names, so it’s common to capitalize the first letter of each word in the name.

3. Make two more buttons for blue and green, named BlueButton and GreenButton, placing them under the red button vertically. Check your work up to this point against

USING ARRANGEMENTS FOR BETTER LAYOUTS

1. From the Palette’s Layout drawer, drag out a HorizontalArrangement component and place it under the buttons.

2. In the Properties panel, change the Width of the HorizontalArrangement to “Fill parent” so that it fills the entire width of the screen.

3. Move the three buttons one by one into the HorizontalArrangement component.

ADDING THE CANVAS

1. From the Palette’s Drawing and Animation drawer, drag a Canvas component onto the Viewer. a. Change its name to DrawingCanvas.

b. Set its Width to “Fill parent” so that it will span the entire width of the screen. c. Set its Height to 300 pixels, which will leave room for the two rows of buttons. 2. Google “white” and download a blank white image/

a. Save it as ‘white.png’

3. Set the BackgroundImage of the DrawingCanvas to the white.png file.

4. Set the PaintColor of the DrawingCanvas to red so that when the user starts the app but hasn’t clicked on a button yet, his default color will be red.

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ARRANGING THE BOTTOM BUTTONS AND THE CAMERA COMPONENT 1. From the Palette, drag out a second HorizontalArrangement and place it under the canvas. 2. Drag two more Button components onto the screen and place them in this bottom HorizontalArrangement.

a. Change the name of the first button to TakePictureButton and its Text property to “Take Picture”.

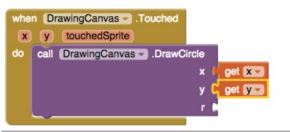
b. Change the name of the second button to WipeButton and its Text property to “Wipe”. 3. Drag two more Button components from the Palette into the HorizontalArrangement, placing them next to WipeButton.

4. Name the buttons BigButton and SmallButton, and set their Text to “Big Dots” and “Small Dots”, 5. From the Media drawer, drag a Camera component into the Viewer. It will appear at the bottom. ADDING THE TOUCH EVENT TO DRAW A DOT

1. In the Blocks Editor, select the drawer for the DrawingCanvas and then drag the DrawingCanvas.Touched block to the workspace.

2. From the DrawingCanvas drawer, drag out a DrawingCanvas.DrawCircle command and place it within the DrawingCanvas.

3. Drag get blocks out for the x and y values and plug them into the sockets in the DrawingCanvas.DrawCircle block

a. 

b. Set the radius to 5

ADDING THE DRAG EVENT THAT DRAWS A LINE

1. From the DrawingCanvas drawer, drag the DrawingCanvas.Dragged block to the workspace. 2. From the DrawingCanvas drawer, drag the DrawingCanvas.DrawLine block into the DrawingCanvas.Dragged block

3. Drag out get blocks for the arguments you need. A get prevX and get prevY should be plugged into the x1 and y1 sockets, respectively. A get currentX and get currentY should be plugged into the x2 and y2 sockets.

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CHANGING THE COLOR

1. Open the drawer for RedButton and drag out the RedButton. Click block.

2. Open the DrawingCanvas drawer. Drag out the set DrawingCanvas.PaintColor to block and place it in the “do” section of RedButton. Click.

3. Open the Colors drawer and drag out the block for the color red and plug it into the set DrawingCanvas.PaintColor to block.

4. Repeat steps 2–4 for the blue and green buttons.

5. The final button to set up is WipeButton.

a. Drag out a WipeButton.

b. Click from the WipeButton drawer.

c. From the DrawingCanvas drawer, drag out DrawingCanvas.

d. Clear and place it in the WipeButton.

e. Click block.

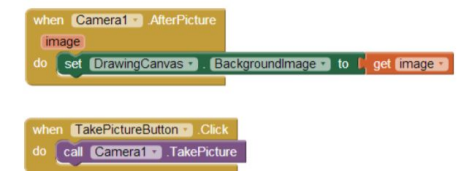
LETTING THE USER TAKE A PICTURE

1. Open the TakePictureButton drawer and drag the TakePictureButton.Click event handler into the workspace.

2. From Camera1, drag out Camera1.TakePicture and place it in the TakePictureButton.Click event handler.

3. From Camera1, drag the Camera1.AfterPicture event handler into the workspace.

4. From DrawingCanvas, drag the set DrawingCanvas.BackgroundImage to block and place it in the Camera1.AfterPicture event handler.

5. Camera1.AfterPicture has an argument named image, which is the picture that was just taken. CHANGING THE DOT SIZE

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1. In the Blocks Editor, from the Variables drawer of the Built-in blocks, drag out an initialize global name to block. Within the initialize block, change the text “name” to “dotSize”. 2. Iinitialize the dotSize to 2 by creating a number 2 block and then plugging it into initialize global dotSize to

REFERENCING THE DOTSIZE VARIABLE IN DRAWCIRCLE

1. Drag out a get block from the initilize global dotsize to block. You should see a get global dotSize block that provides the value of the variable.

2. Go to the DrawingCanvas.DrawCircle block, drag the number 5 block out of the r slot, and then place it into the trash. Then, replace it with the get global dotSize block

CHANGING THE VALUE OF DOTSIZE Y

1. Drag out a SmallButton.

a. Click event handler from the SmallButton drawer.

b. Next, mouse over the “dotsize” within the initialize global block and drag out the set global dotSize to block.

c. Plug it into SmallButton.

d. Click.

e. Create a number 2 block and plug it into the set global dotSize to block.

2. Make a similar event handler for BigButton.Click, but set dotSize to 8

RUNNING

1. Open the emulator you downloaded and let it run in the background

2. Click “Connect” then “Emulator”

PROJECT SUBMISSION

1. Go to “Projects” -- “Export selected project to my computer” and download it to your computer. 2. Now you are free to rename and upload to the Google Drive Submission Folder.

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