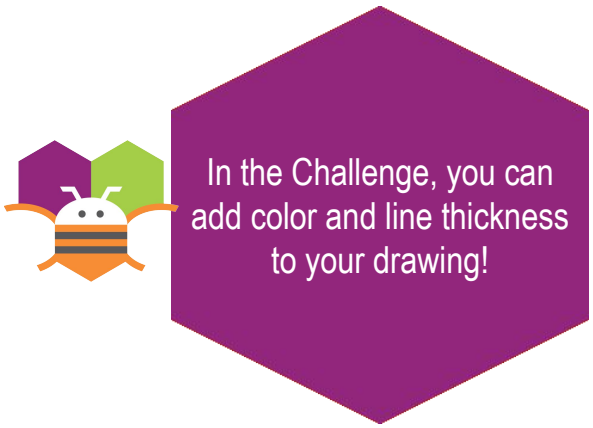
SKETCH AND GUESS: CHALLENGE



REVIEW OF CLOUDDB TAGS

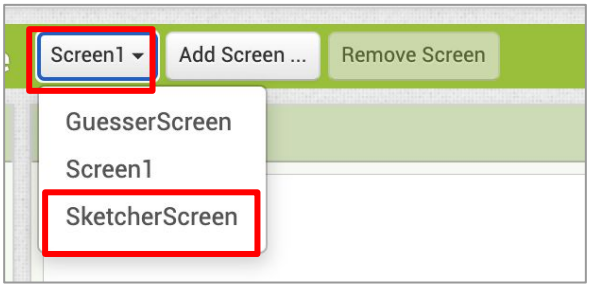
To make this app more fun, you start the challenge by adding **PaintColor** and **LineWidth** as part of the **DrawingData** to be stored on **CloudDB**.

Review the table below for the tags that are used in this app.

Tags	Meaning	Sketcher	Guesser
	The start point and end point for drawing.	Store the coordinates of drawing	Get the coordinates of drawing
	The drawing option for drawing	Store the random generated drawing option.	Get the CurrentDrawing for answer checking.
	Guesser made a correct guess of the drawing	Get notification of a correct guess	Store the correct guess

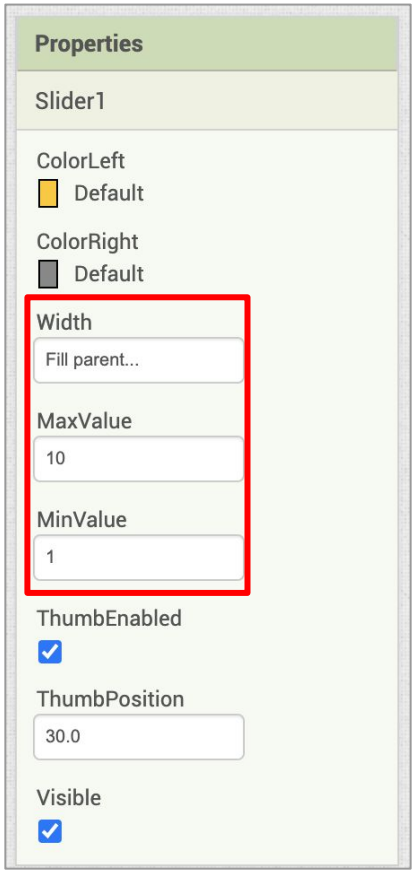
ADD COMPONENTS TO SKETCHERSCREEN

1. Open your project. Make sure you are in the SketcherScreen and in the Designer.



2. Drag in a Slider component from the User Interface drawer, and place it below the HorizontalArrangement that has the StartButton, BackButton, and ClearButton.
Change its properties:
   - *Width*: **"Fill Parent"**
   - *MinValue*: **1**
   - *MaxValue*: **10**

The Slider will allow the user to set the width of the line drawn on the Canvas, so the minimum size will be 1 and the maximum size, 10.



ADD COMPONENTS TO SKETCHERSCREEN (continued)

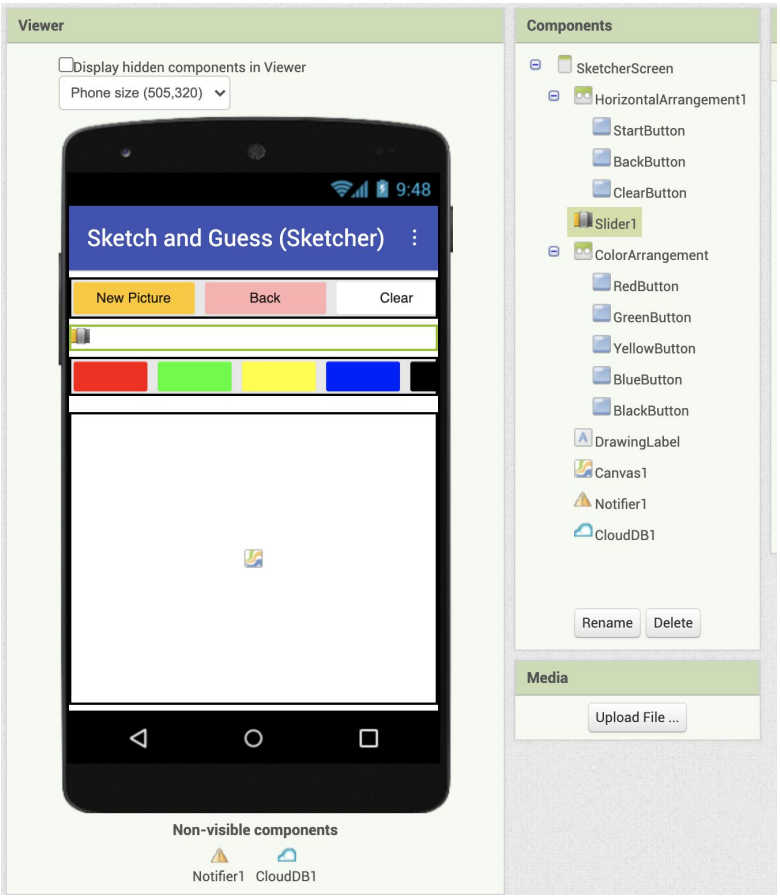
3. Add a HorizontalArrangement from the Layout drawer, placing it below the Slider. Name the new Arrangement "ColorArrangement".

4. Change ColorArrangement's *Width* to **"Fill Parent"** and its *AlignHorizontal* to **"Center: 3"**.

5. Drag 5 Buttons into ColorArrangement. They might not all fit so you can see them on the screen, but their order is not important, so you can drop them all in on the left.

6. Update the Buttons as follows:
   - ❑ Rename them RedButton, BlueButton, GreenButton, YellowButton, and BlackButton.
   - ❑ Change their *BackgroundColor* to correspond to their name.
   - ❑ Delete all text in their *Text* property.
   - ❑ Change their *Width* to **20%**, so all five will fill the width of the screen.

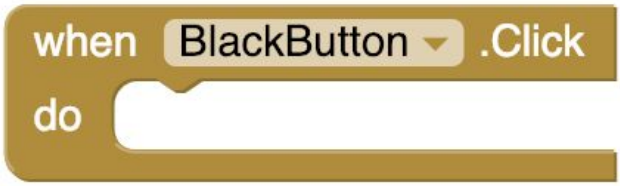
Your SketcherScreen should look something like this: - - - - - - - - - ►

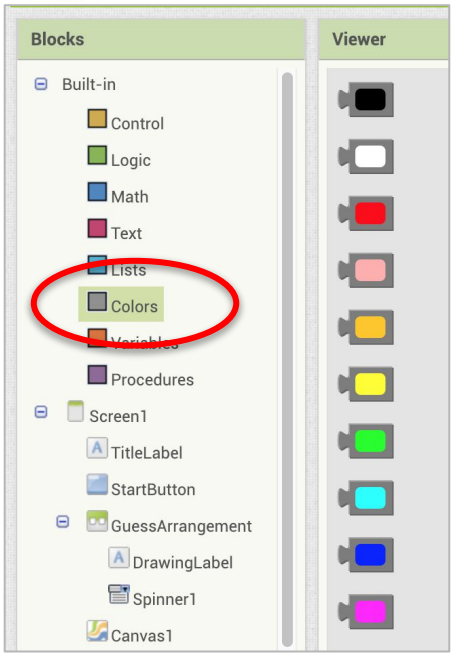


COLOR BUTTONS

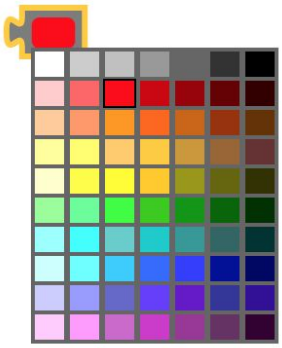
7 When the Sketcher clicks on any of the color buttons, you need to set the **Canvas1.PaintColor** to that color.

Use the blocks below.

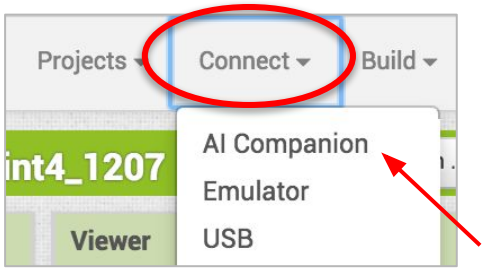




You can select your colors from the Colors palette. If you click on a color block, you get a full palette of colors to choose from

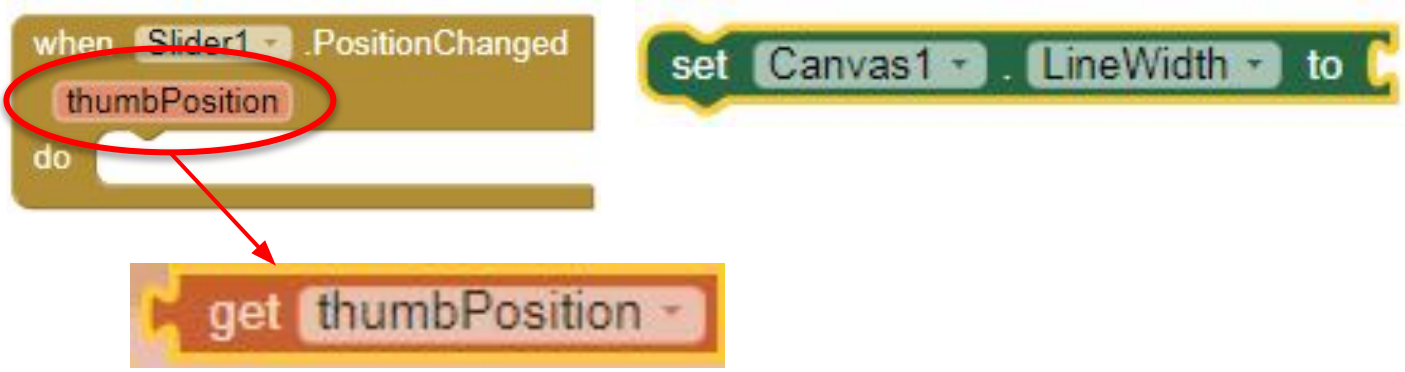


8 Test it out with MIT AI2 Companion. Try changing the color and see if your drawing colors change! - - - - →



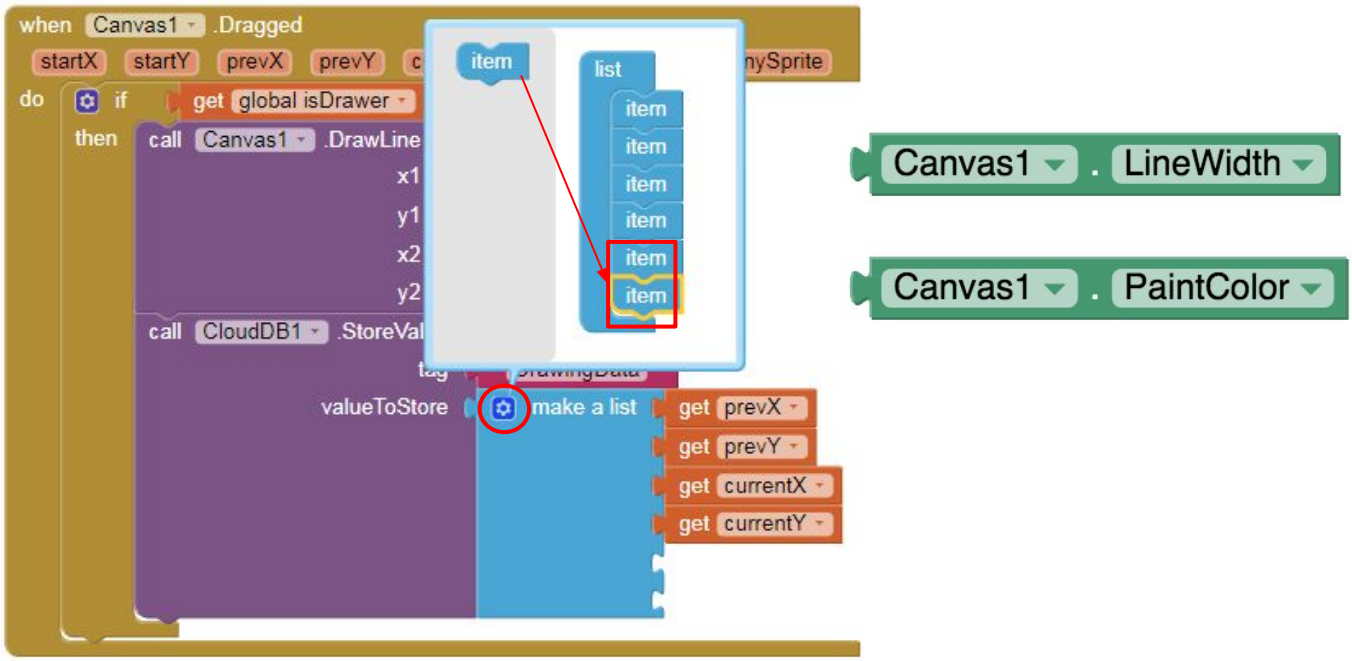
SLIDER TO CHANGE LINE WIDTH

9 Add code so when the Sketcher moves the slider to the left, the line drawn will be thinner, and when the slider is moved to the right, the line will be thicker.



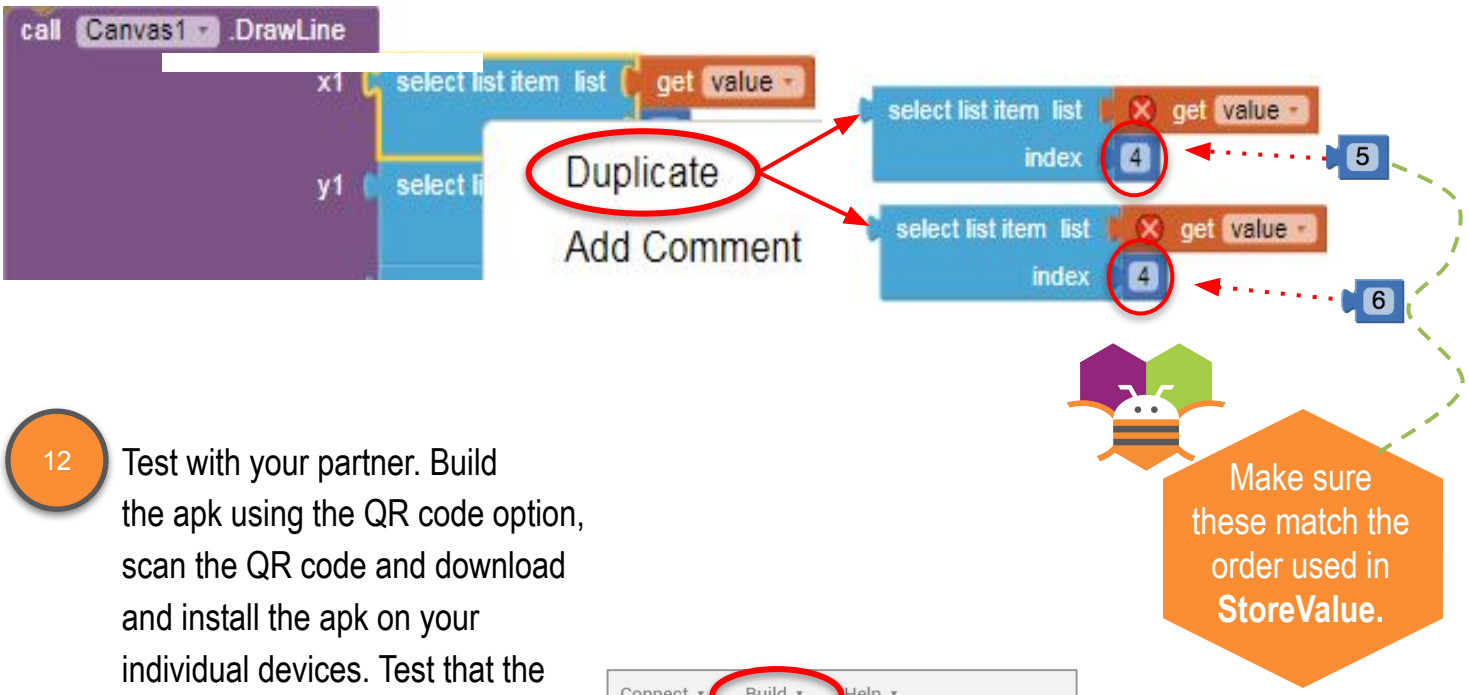
SAVE THE PAINT COLOR AND LINE WIDTH PROPERTIES TO CLOUDDB

10 Update **Canvas1.Dragged** by adding two more slots to the list store in **CloudDB** to store the **LineWidth** and **PaintColor** of the **Canvas**.

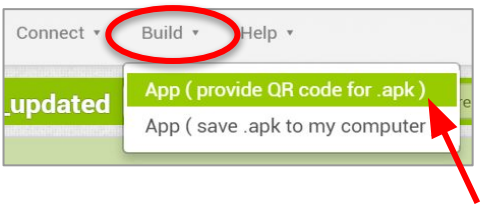


GET THE PAINT COLOR AND LINE WIDTH PROPERTIES FROM CLOUDDB

11 Switch to **GuesserScreen**. Update CloudDB1.DataChanged so extract the LineWidth and PaintColor stored in the list. Set the properties for the Canvas before drawing the line. Use the blocks below.



12 Test with your partner. Build the apk using the QR code option, scan the QR code and download and install the apk on your individual devices. Test that the Sketcher can change color and line width and the Guesser sees those changes in the drawing.



COMPUTATIONAL THINKING CONCEPTS

The following are the Computational Thinking Concepts learned in this lesson.

Sketch And Guess
1. Manipulation of data and elementary data structures