

SKETCH AND GUESS: CHALLENGE






In the Challenge, you can add color and line thickness to your drawing!

REVIEW OF CLOUDDB TAGS

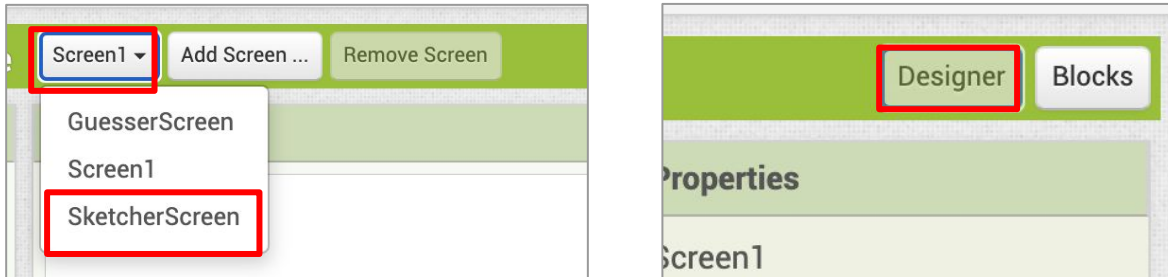
To make this app more fun, you start the challenge by adding **PaintColor** and **LineWidth** as part of the **DrawingData** to be stored on **CloudDB**.

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

Tags	Meaning	Sketcher	Guesser
 “ DrawingData ”	The start point and end point for drawing.	Store the coordinates of drawing	Get the coordinates of drawing
 “ CurrentDrawing ”	The drawing option for drawing	Store the random generated drawing option.	Get the CurrentDrawing for answer checking.
 “ CorrectGuess ”	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**

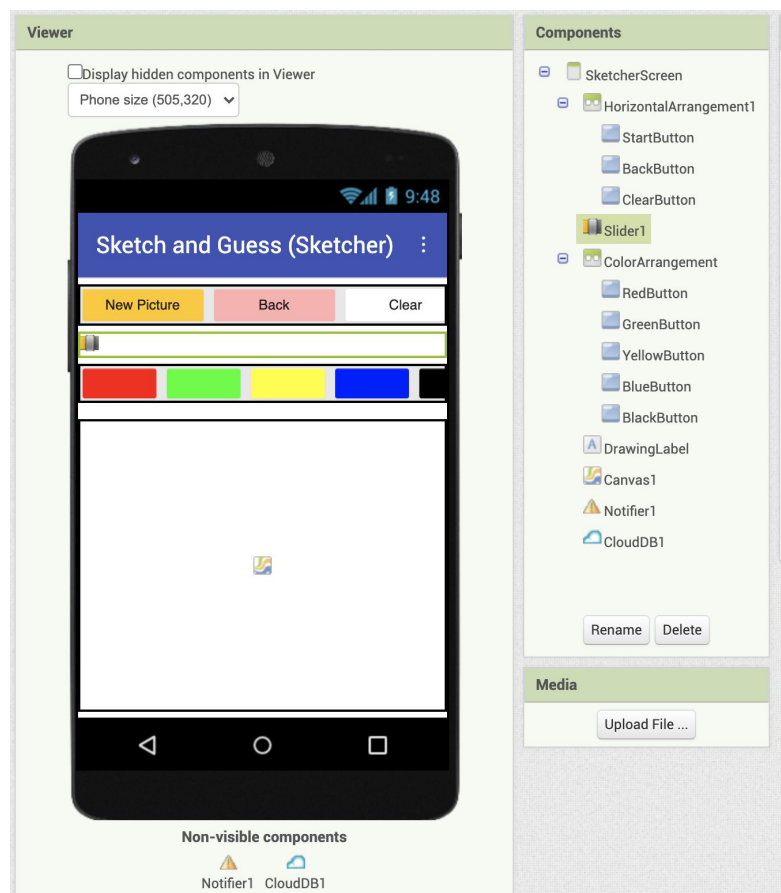
The Slider will allow the user to set the width of the line drawn on the Canvas, so the minimum size will be 1 and the maximum size, 10.



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

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

7

Switch to the Blocks Editor. ----->



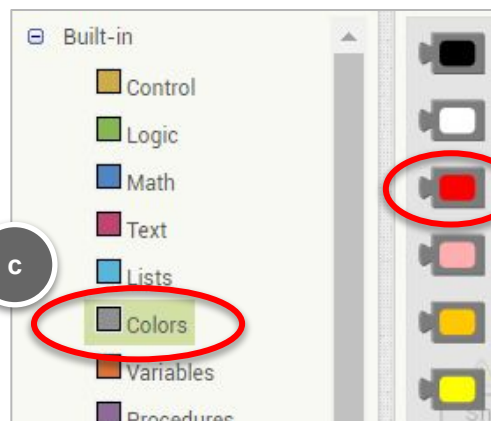
8

Drag out a **when RedButton.Click** event block.



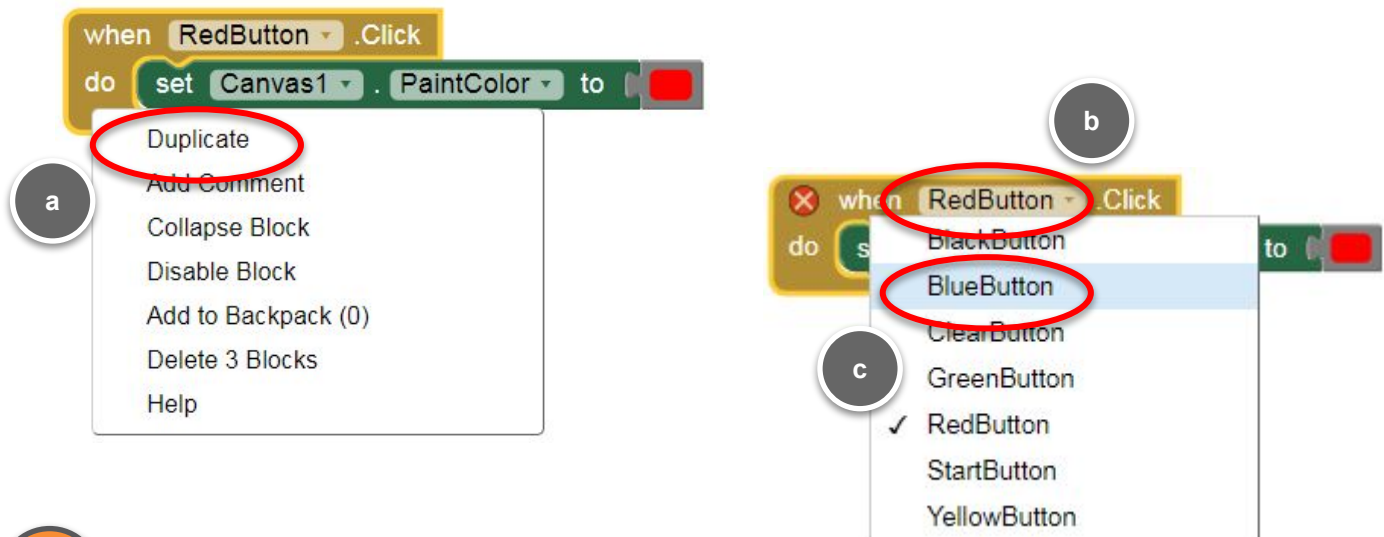
9

Set the **Canvas1.PaintColor** to red.

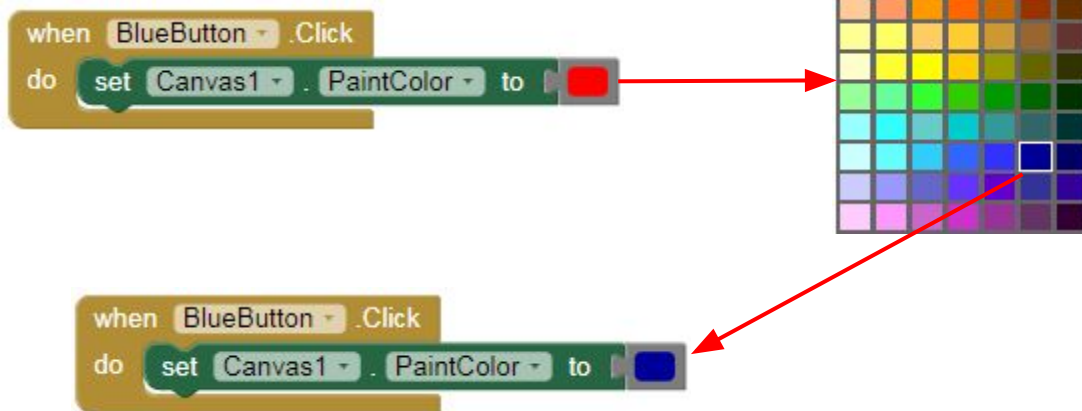


COLOR BUTTONS (continued)

- 10 Duplicate the **when RedButton.Click** block and change **RedButton** to **BlueButton**.

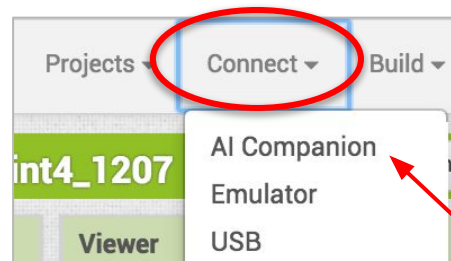


- 11 Click on the red color block to popup the color grid and change it to blue.



- 12 Do the same for the Green, Yellow, and Black buttons.

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



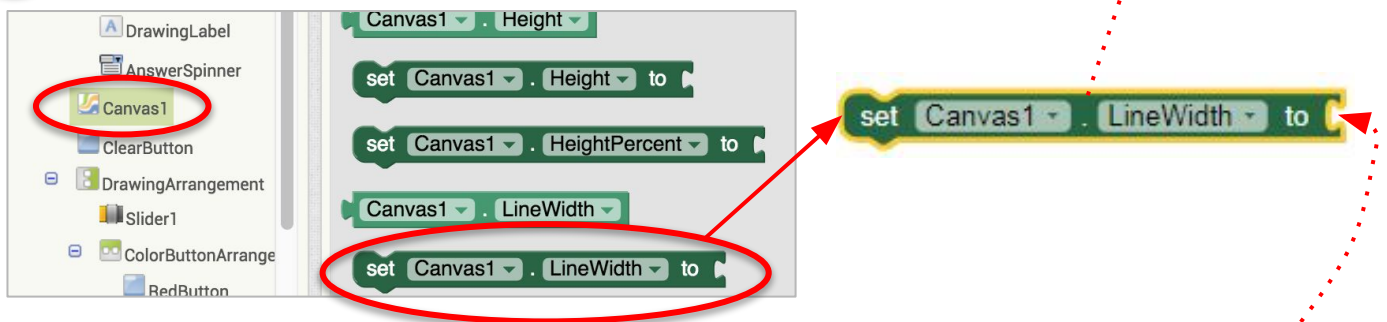
SLIDER TO CHANGE LINE WIDTH

You will 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.

- 14 Click on **Slider1** and drag out the **Slider1.PositionChanged** block.



- 15 Click on **Canvas1** and drag out a **set Canvas1.LineWidth** to block.

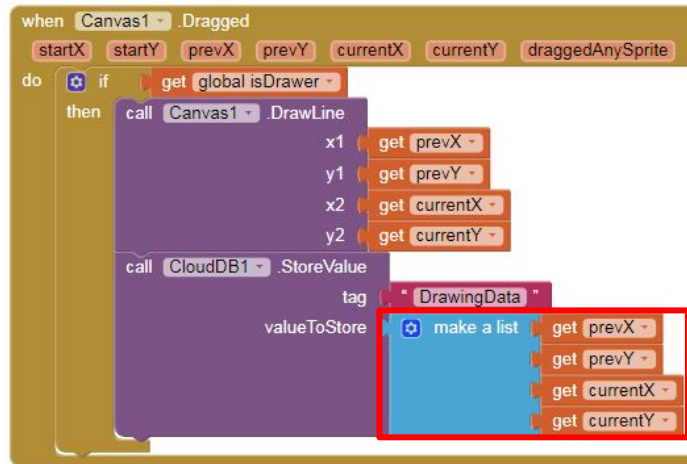


- 16 Mouse over **thumbPosition** to get the **get thumbPosition** block to snap in.

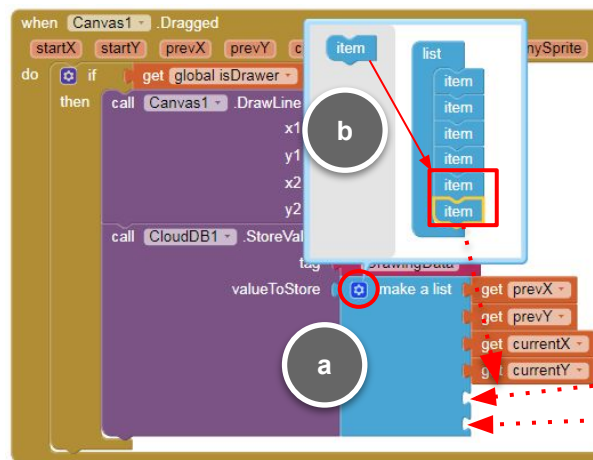


SAVE THE PAINT COLOR AND LINE WIDTH PROPERTIES TO CLOUDDDB

In the **Canvas1.Dragged** event, you will expand the **DrawingData** list from 4 elements to 6 elements for **PaintColor** and **LineWidth**.



- 17 Click on the blue setting icon of the **make a list** block, then drag two more items to the end of the list.



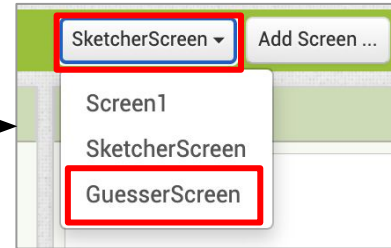
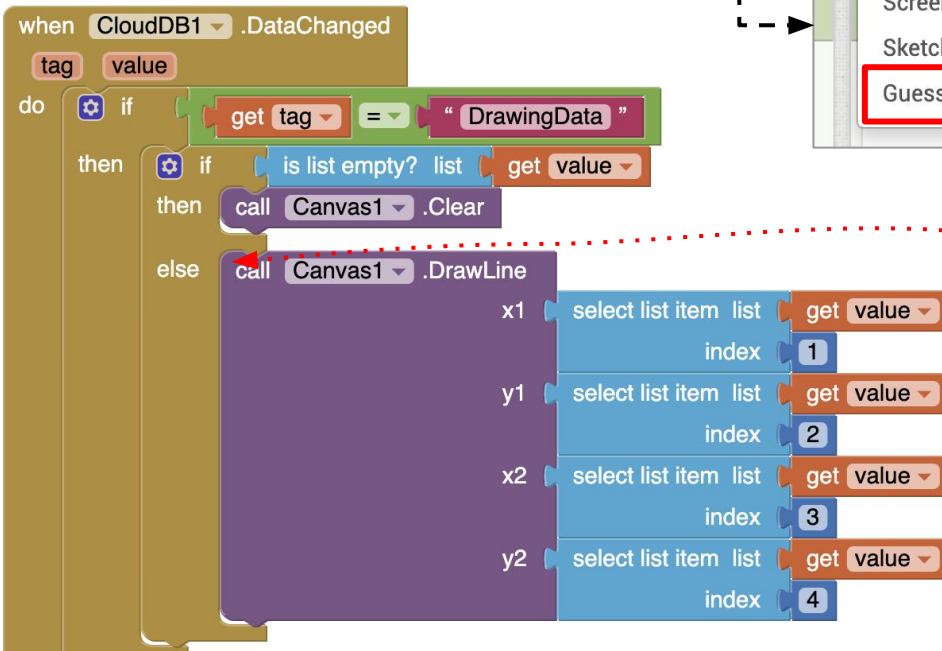
Make sure these are in the correct order!

- 18 Add **Canvas1.PaintColor** and **Canvas1.LineWidth** as the two new items.



GET THE PAINT COLOR AND LINE WIDTH PROPERTIES FROM CLOUDDB

19 Switch to the GuesserScreen.



LineWidth and **PaintColor** should be updated for the Guesser before the line is drawn.

20 Get the **set Canvas1.PaintColor to** block and the **set Canvas1.LineWidth to** blocks from **Canvas1** drawer.



21 Right-click and duplicate the **select list item** block from above twice.

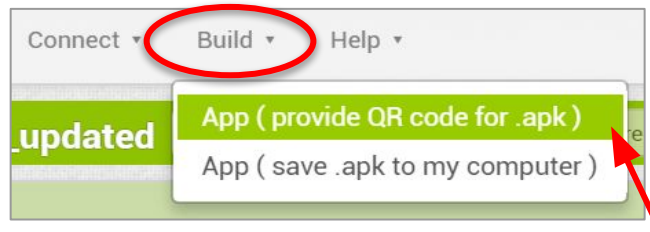


22 Update the index number box to **5** and **6** on the duplicated blocks

Make sure these match the order used in StoreValue.

TEST THE APP

- ❑ 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.



Can the Sketcher change the color and line width of the pen while 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

