SKETCH & GUESS: PART 3

VARIABLES AND TAGS

In this lesson, you need to identify who is the Sketcher and who is the Guesser.

You will use **isSketcher**, a boolean variable (either true or false) to keep track of who the Sketcher is in the app. If you are the Sketcher, **isSketcher** is set to true; otherwise, **isSketcher** is set to false. You also will use a variable called **userID**, an ID that is randomly generated when you run the app.

Variable	Meaning	Drawer	Guesser
initialize global isSketcher to	Tells if user is the Sketcher	true	false
initialize global userID to	ID for tracking who is drawing	random integer from 0 to 999999	

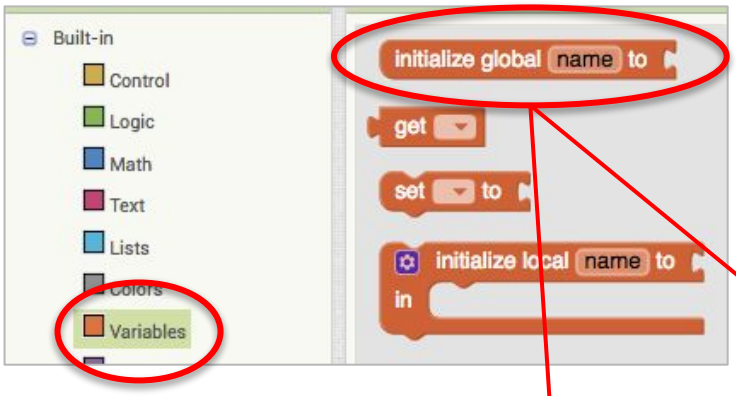
You also need to store the Sketcher's "userID" as the value of the **CurrentSketcher** tag in CloudDB, telling the Guesser who the Sketcher is. Each user playing the app has their own unique userID.

Tags	Meaning	Sketcher	Guesser
" DrawingData "	The start point and end point for drawing.	Store the coordinates of drawing	Get the coordinates of drawing
" CurrentSketcher "	Who is the Sketcher	Stores their userID.	Gets the Sketcher's userID.

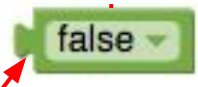
INITIALIZE VARIABLES

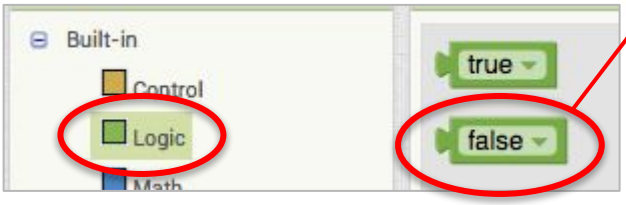
1. Open your project from Part 2.

2. Drag in two **initialize global name** blocks. Change one's name to **isSketcher**, and the other to **userID**.

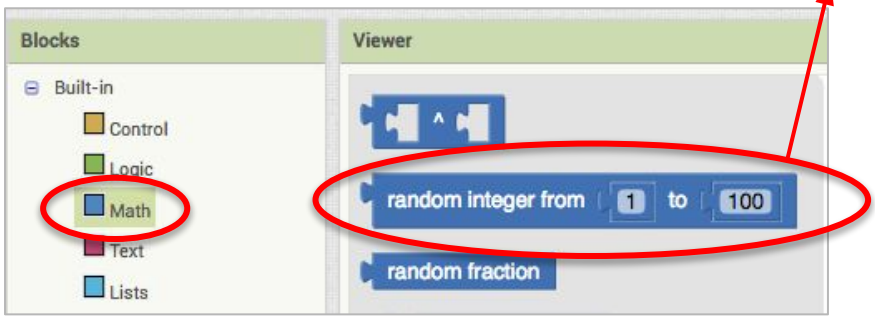


3. From the Logic drawer, drag out a **false** block and initialize **isSketcher** to **false.** This means the user is *not* the Sketcher.





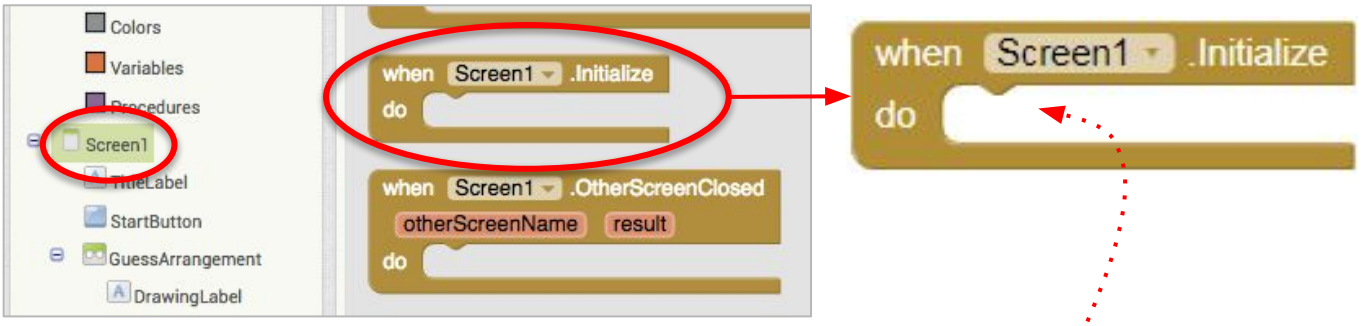
4. From the Math drawer, drag out a **random integer from** block, and change the values to **1** and **999999**. Snap to **initalize global userID**.



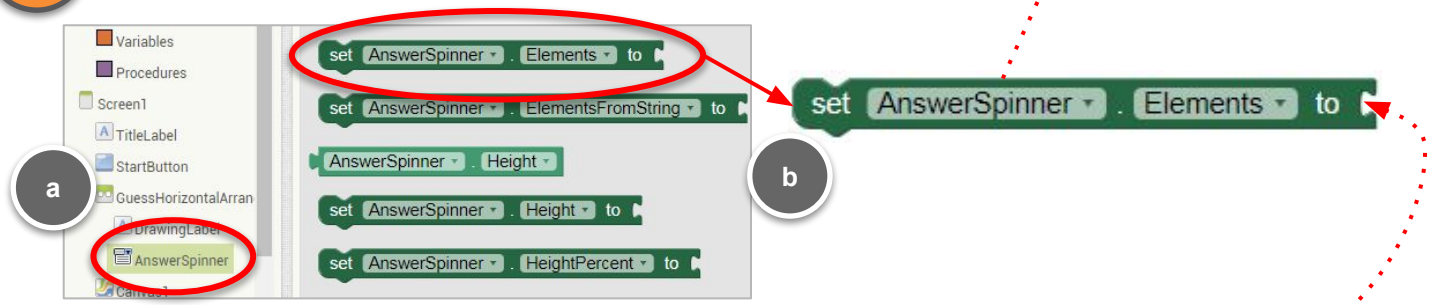
INITIALIZE SPINNER ELEMENTS FOR THE GUESSER

AnswerSpinner is a component that will list the possible objects being drawn, so the Guesser can make a guess when the Sketcher draws something. You need to set the **AnswerSpinner's** Elements to the list of **drawingOptions**.

5 Pull out a **Screen1.Initialize** block.

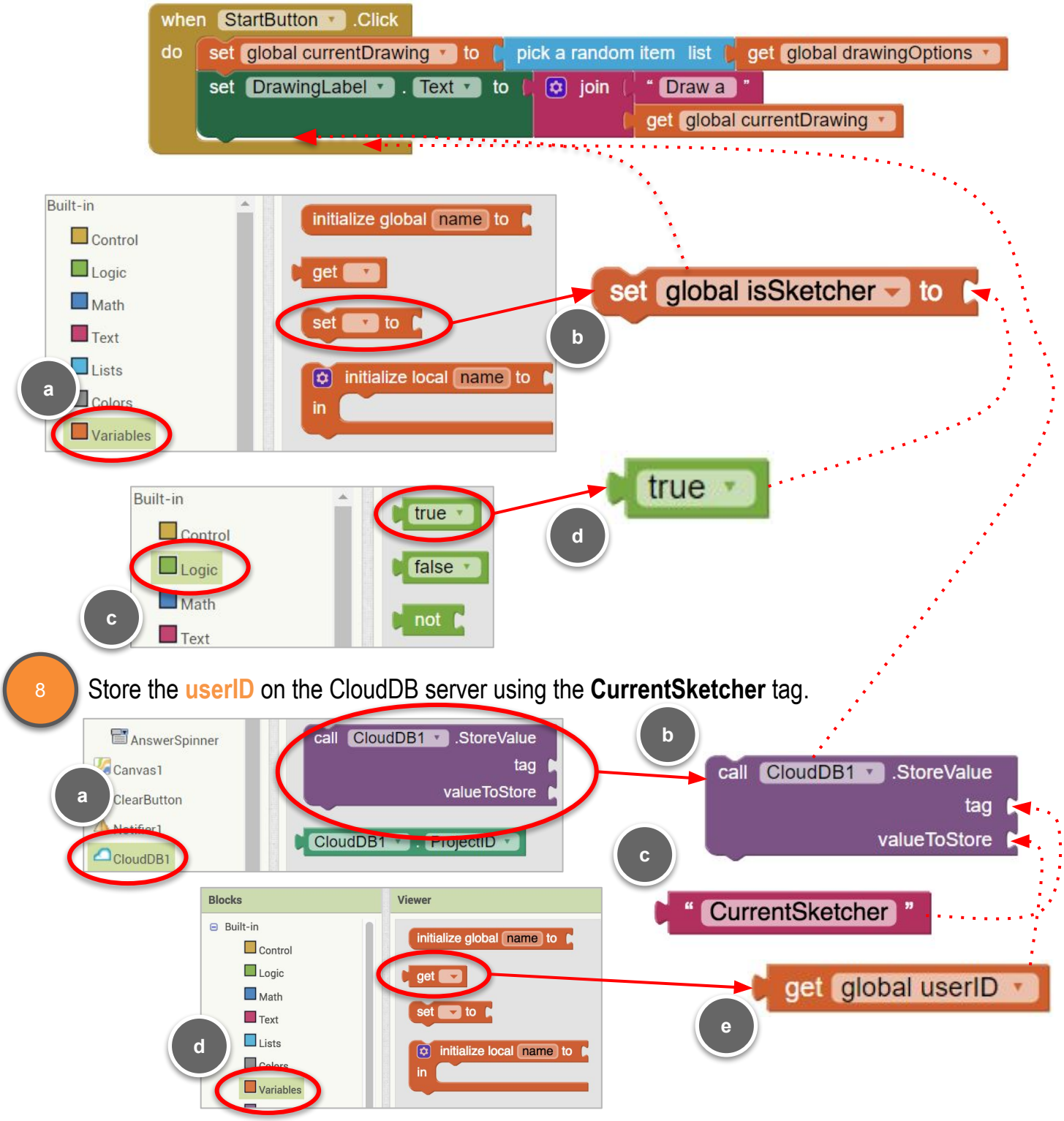


6 Set the **AnswerSpinner.Elements** to the **drawingOptions** list.



CODE THE SKETCHER

7 Whoever presses the Start button first will be the Sketcher. Set **isSketcher** to true when the Start button is clicked.

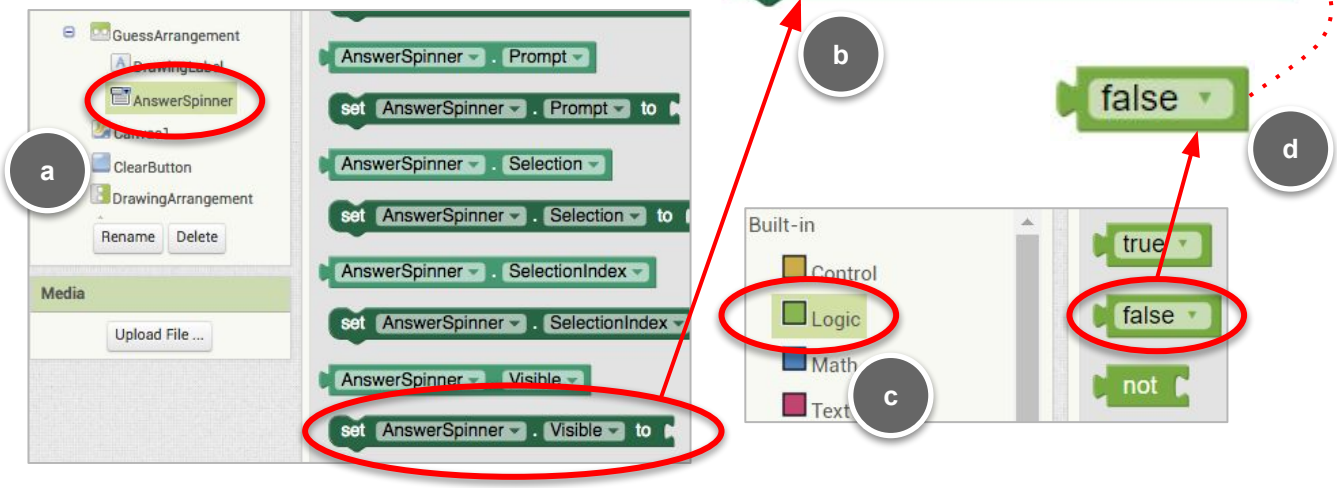


8 Store the **userID** on the CloudDB server using the **CurrentSketcher** tag.

HIDE AND SHOW COMPONENTS

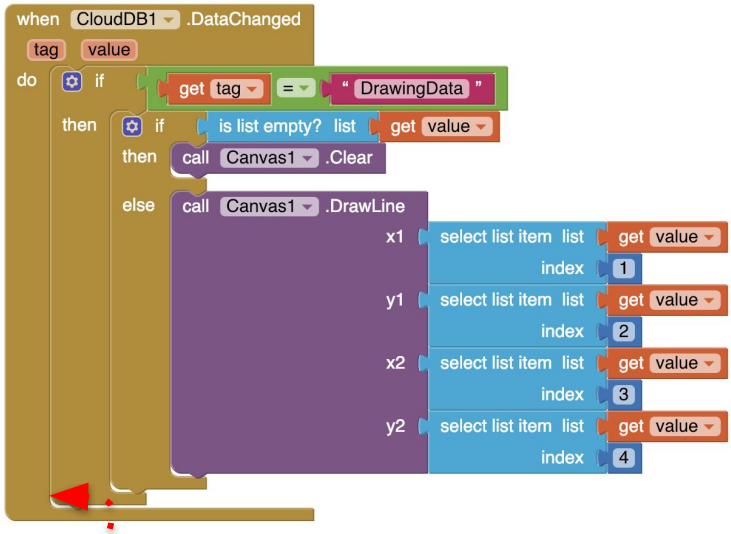
When the **StartButton** is clicked, that user will be the Sketcher, and will not need to see the **AnswerSpinner** to guess.

9 Set **AnswerSpinner** so it's invisible.

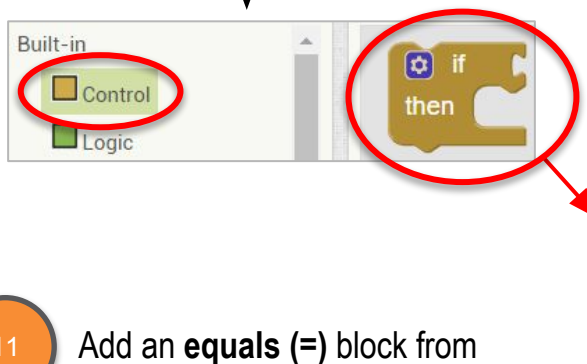


CODE THE GUESSER

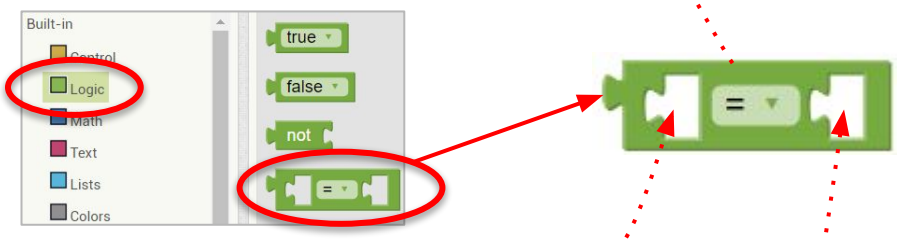
Because the Sketcher stores their userID in CloudDB with the **CurrentSketcher** tag, the Guesser will receive that information in the **CloudDB1.DataChanged** event. You need to add another **if** block to check for this new tag.



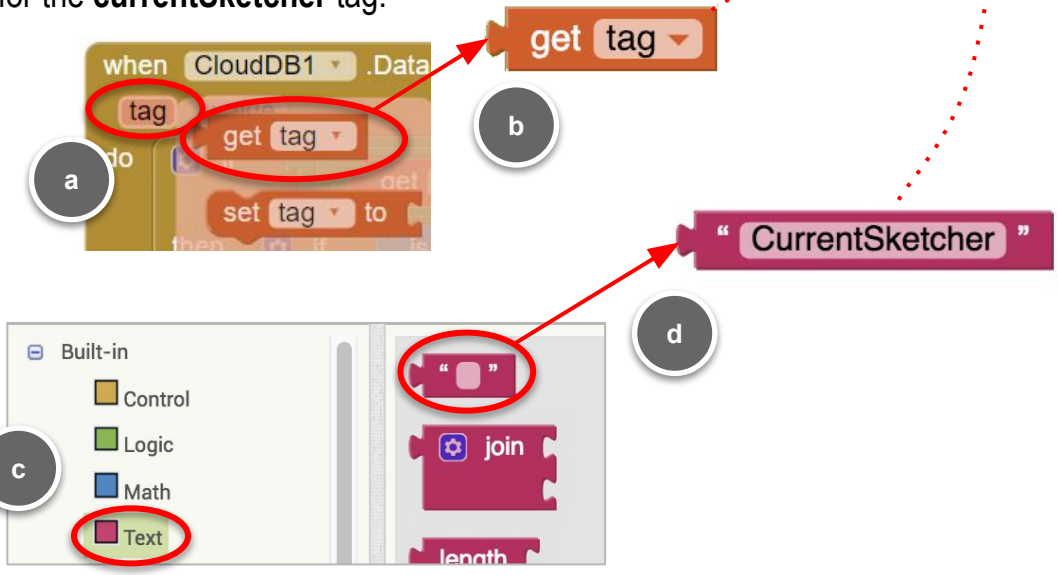
10 Drag out an **if** block and snap it in at the end of **CloudDB1.DataChanged**.



11 Add an **equals (=)** block from the Logic drawer.



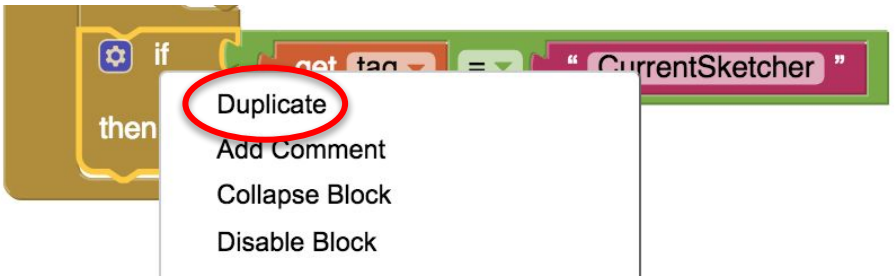
12 Check for the **currentSketcher** tag.



CODE THE GUESSER

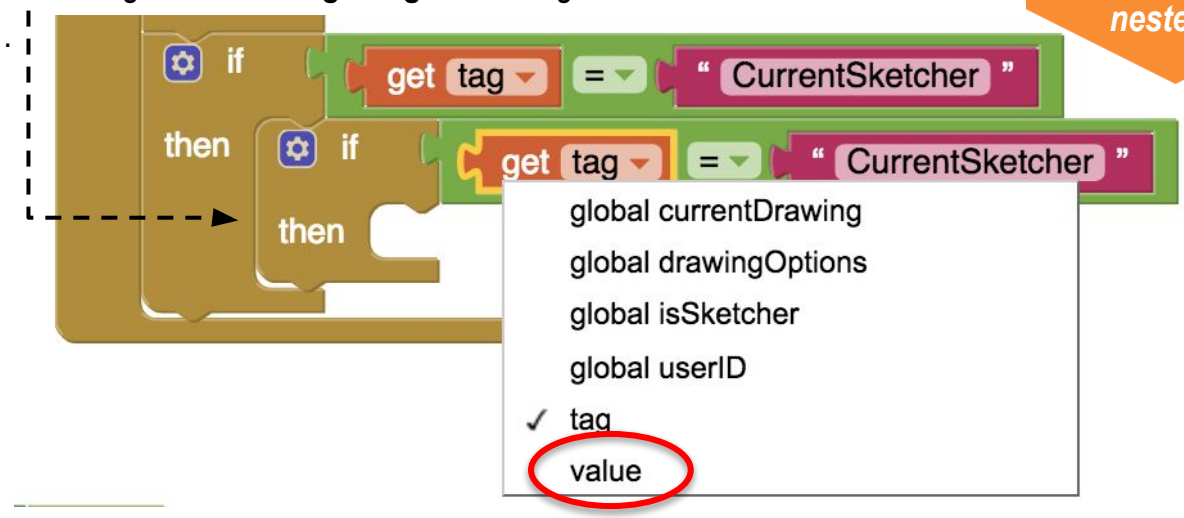
We need to make sure the CurrentSketcher is not this user.

13 Duplicate the if block you just snapped in.



14 Snap the duplicate **if** inside the then part of the original. Click on **get tag** and change to **value**.

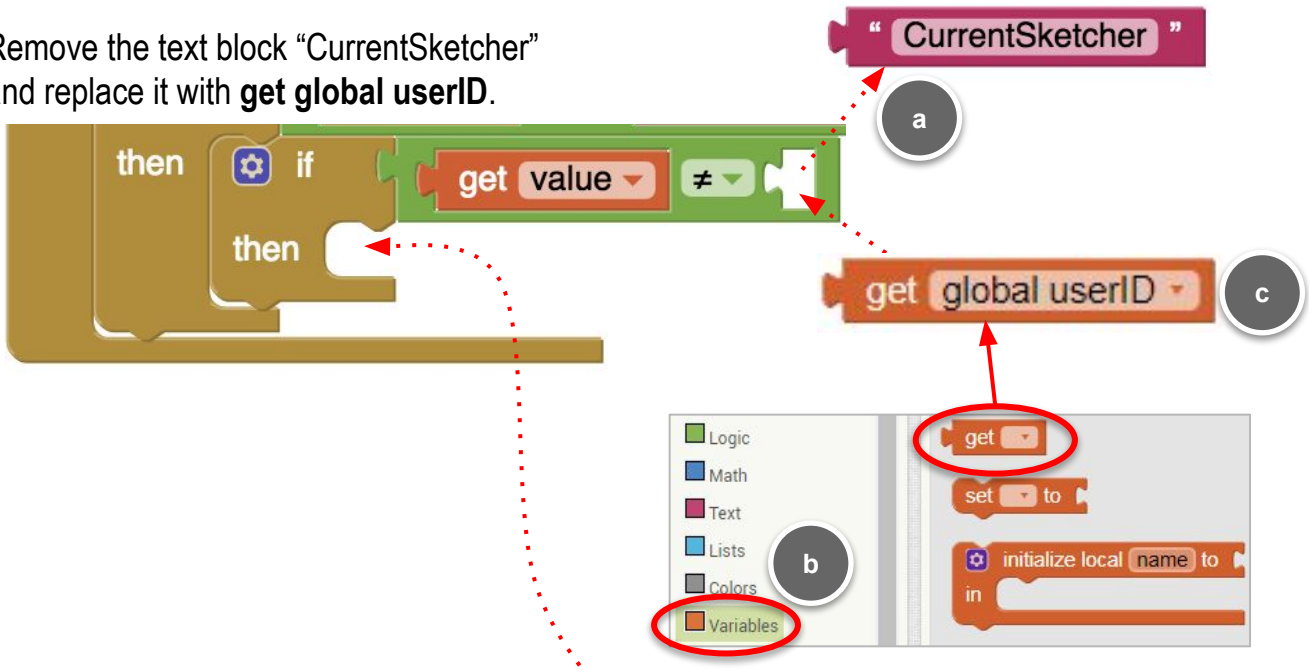
An **if** block inside another **if** block is called a ***nested if.***



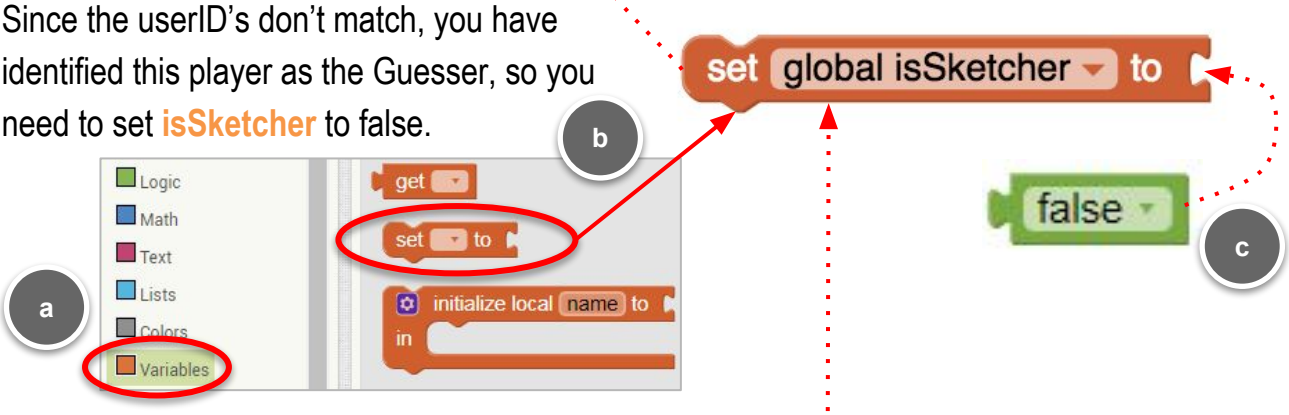
15 Change the = to ≠ using the dropdown.

CODE THE GUESSER

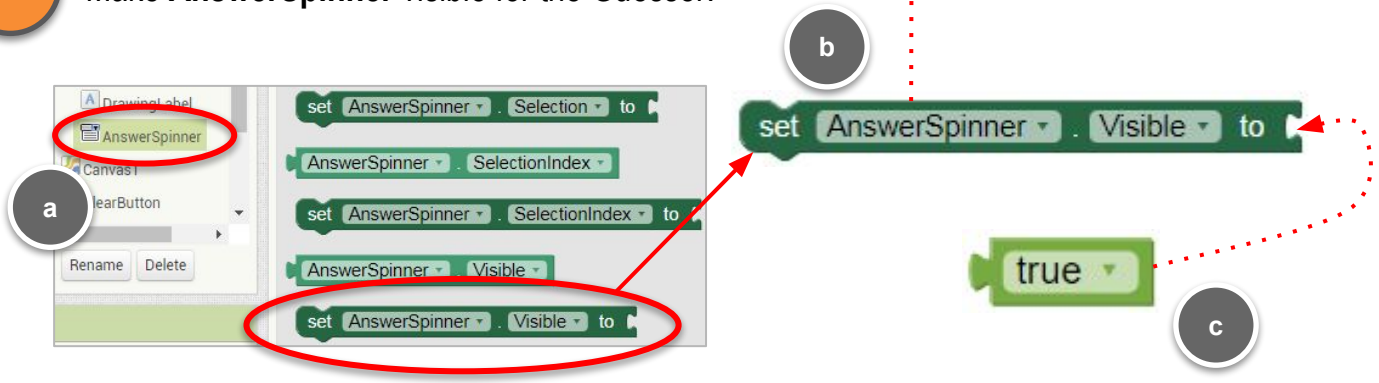
16 Remove the text block “CurrentSketcher” and replace it with **get global userID**.



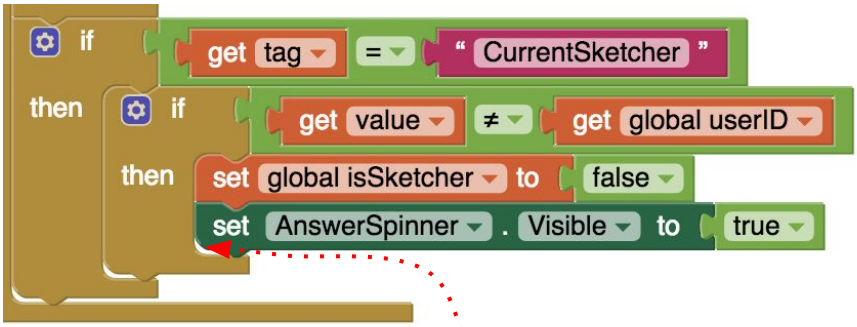
17 Since the userID’s don’t match, you have identified this player as the Guesser, so you need to set **isSketcher** to false.



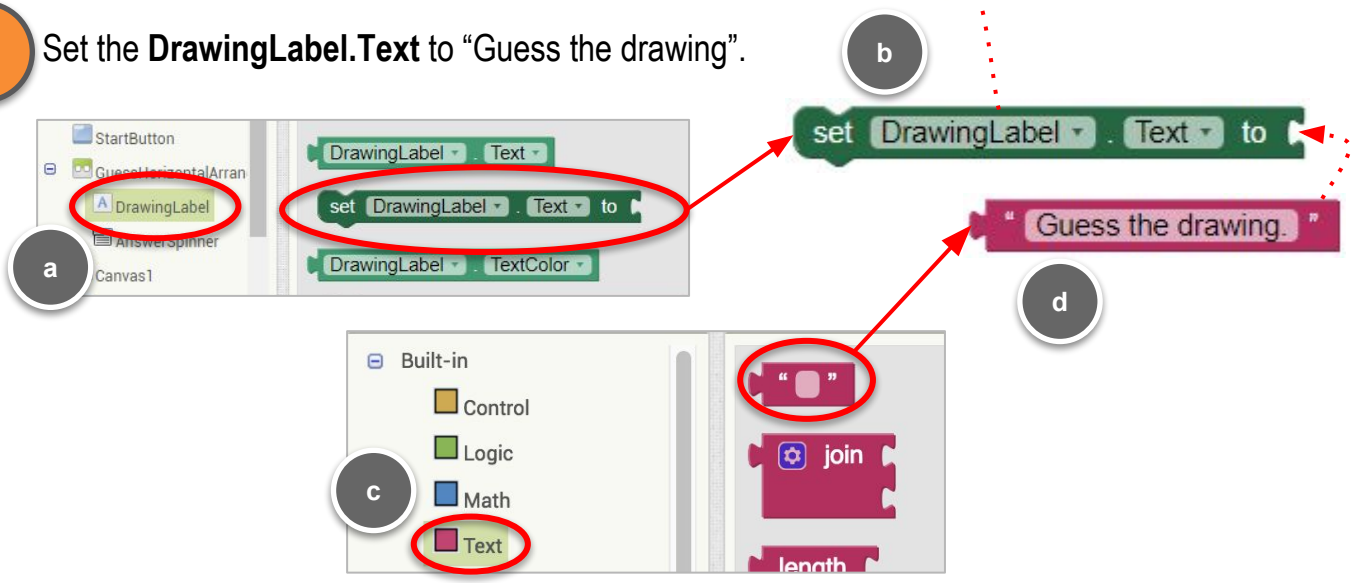
18 Make **AnswerSpinner** visible for the Guesser.



CODE THE GUESSER

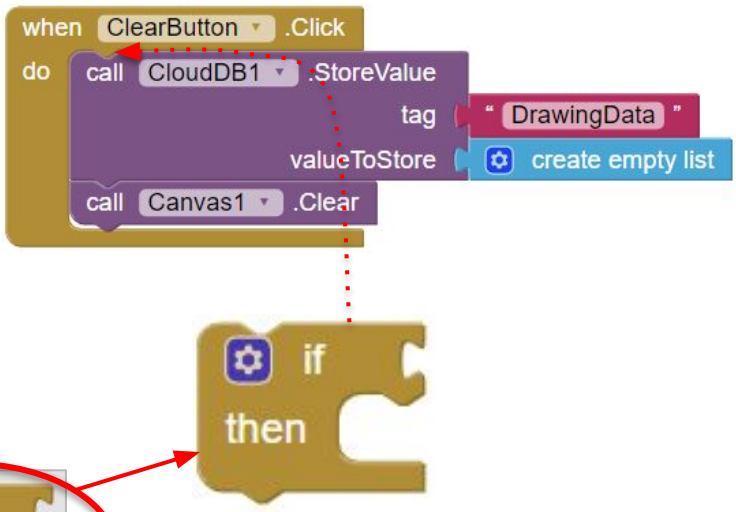


19 Set the **DrawingLabel.Text** to "Guess the drawing".

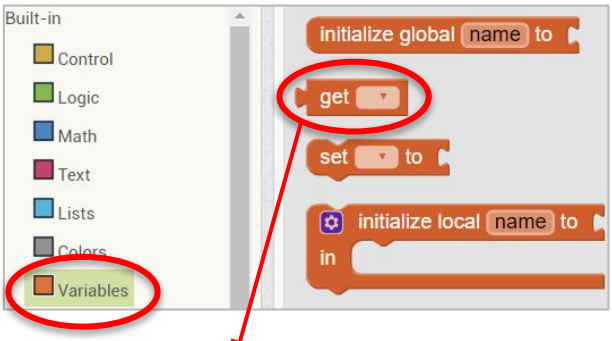


CHECK WHO IS THE SKETCHER TO CLEAR CANVAS

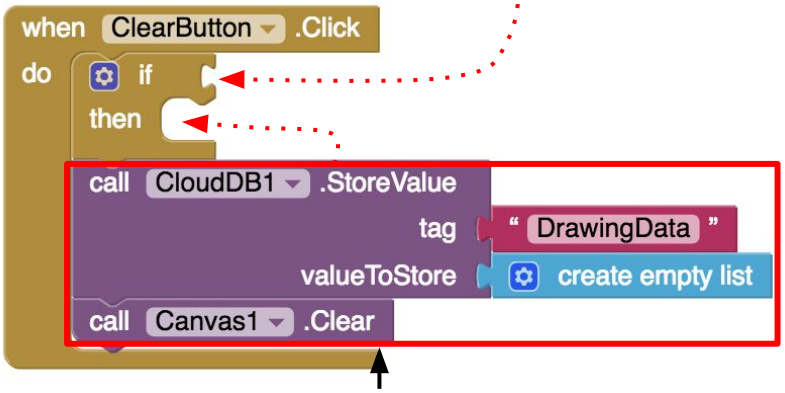
20 Only the Sketcher has the right to clear the drawing, so add an **if-then** block at the beginning of the **ClearButton.Click** event block to check if the user is the Sketcher.

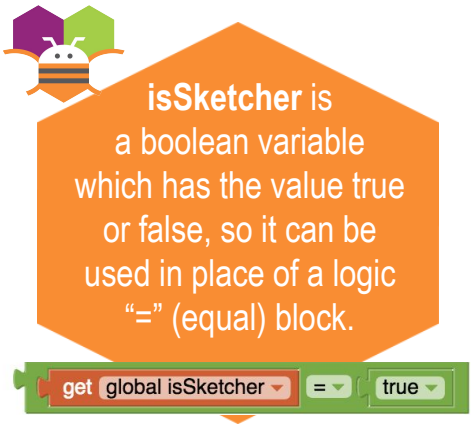


CHECK WHO IS THE SKETCHER TO CLEAR CANVAS (continued)



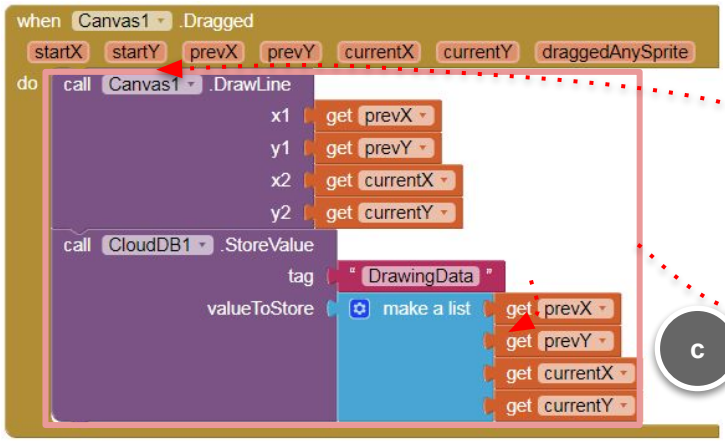
21 Check if the **isSketcher** variable is set to true. You can do this just by using the variable, since it's a boolean variable.





22 Move the **CloudDB1.StoreValue** and **Canvas1.Clear** blocks inside the **if-then** block.

CHECK WHO IS SKETCHER IN CANVAS1.DRAGGED EVENT



23 You need to fix **Canvas1.Dragged** to only allow the Sketcher to draw, not the Guesser, so add another **if-then** block to that event too.

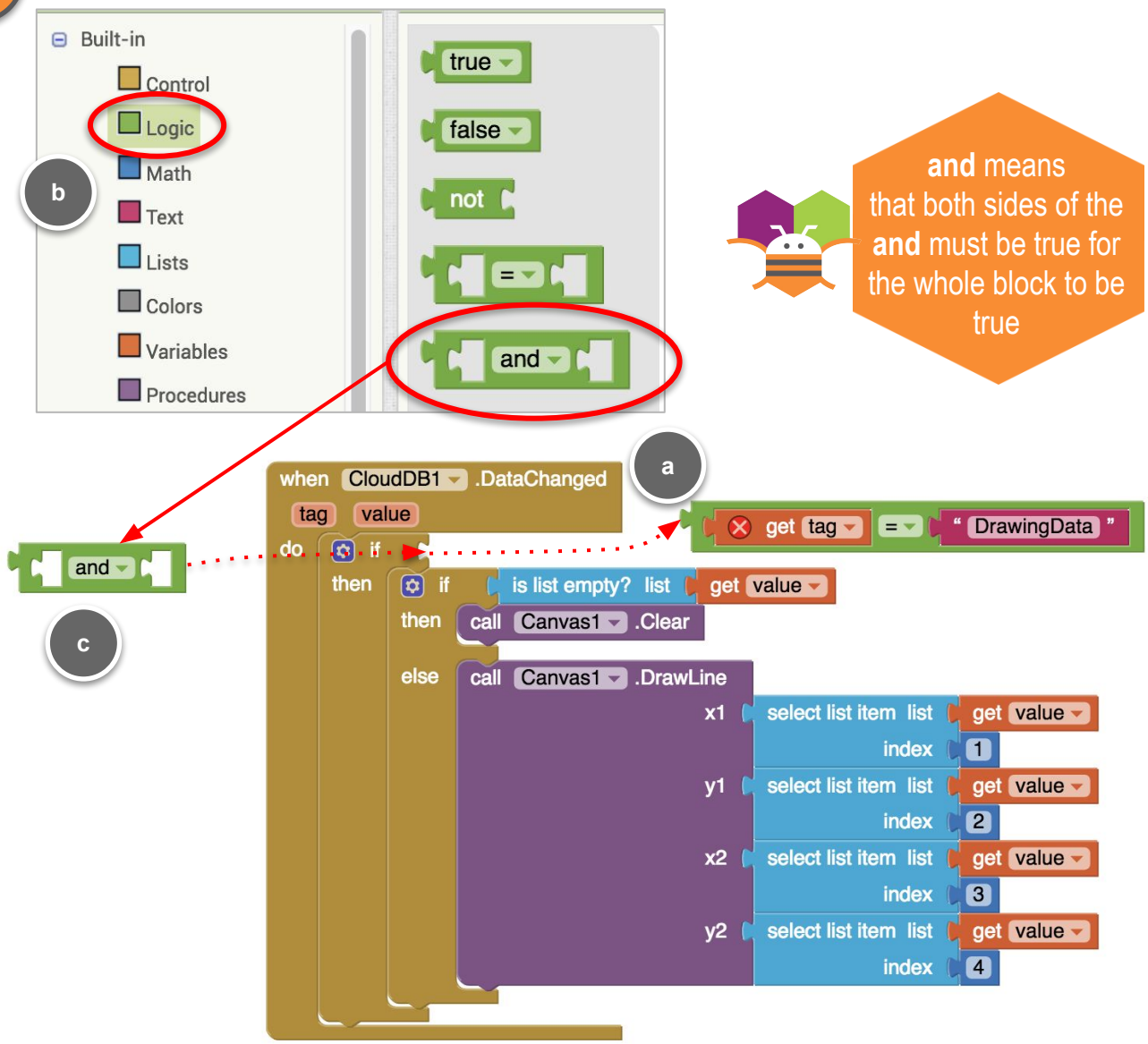
CHECK FOR DUPLICATE DRAWING

You can improve your app by preventing duplicate drawing within the app.

Since the line is drawn on the Sketcher's device in the **Canvas1.Dragged** event, there is no need to draw the line again for the Sketcher in the **CloudDB1.DataChanged** event.

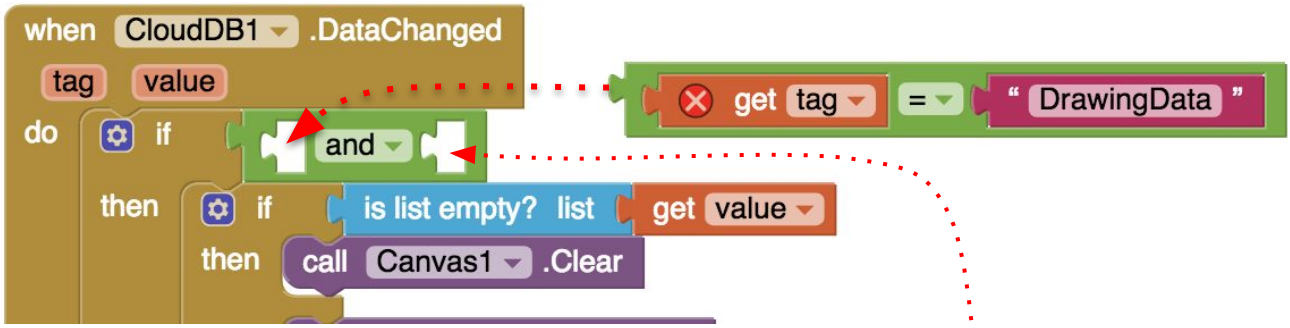
Only the Guesser needs to draw the line, based on the **CloudDB1.DataChanged** event.

24 Drag an **and** block from the Logic drawer, and snap it to the **if** block in **CloudDB1.DataChanged.**



CHECK FOR DUPLICATE DRAWING (continued)

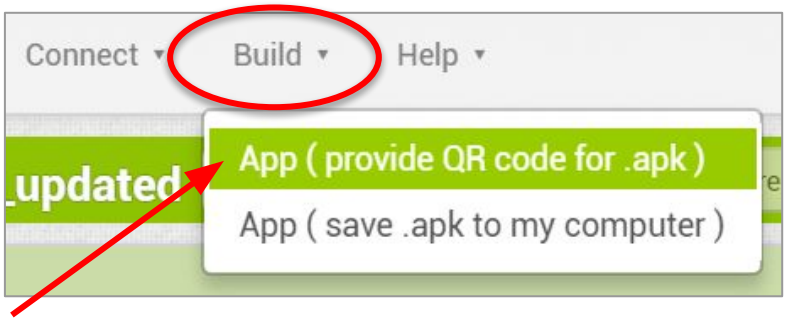
25 Now snap the **get tag = "DrawingData"** block back into the left side of the **and** block.



26 And snap a **not** block into the right side.

27 And snap **get global isSketcher** to the **not.** This tests if the user not the Sketcher … meaning the user is the Guesser!

28 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.

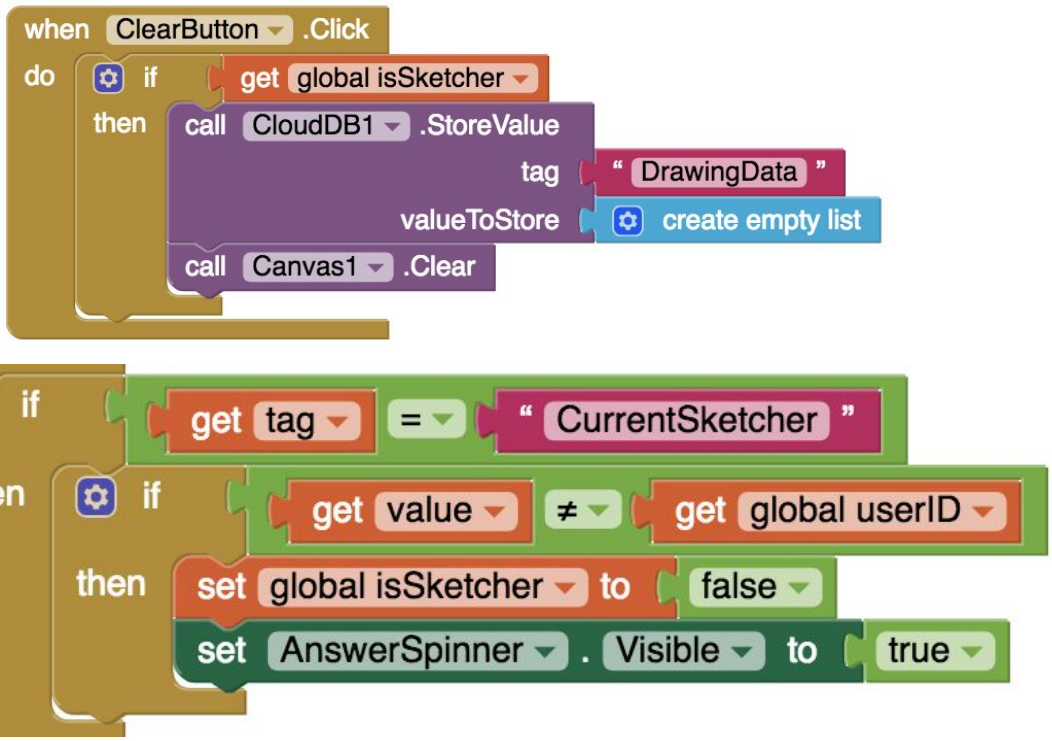


COMPUTATIONAL THINKING CONCEPTS

The following are the Computational Thinking Concepts learned in Part 3.

Sketch And Guess Part 3

1. Conditionals



2. Naming / variables

3. Operators