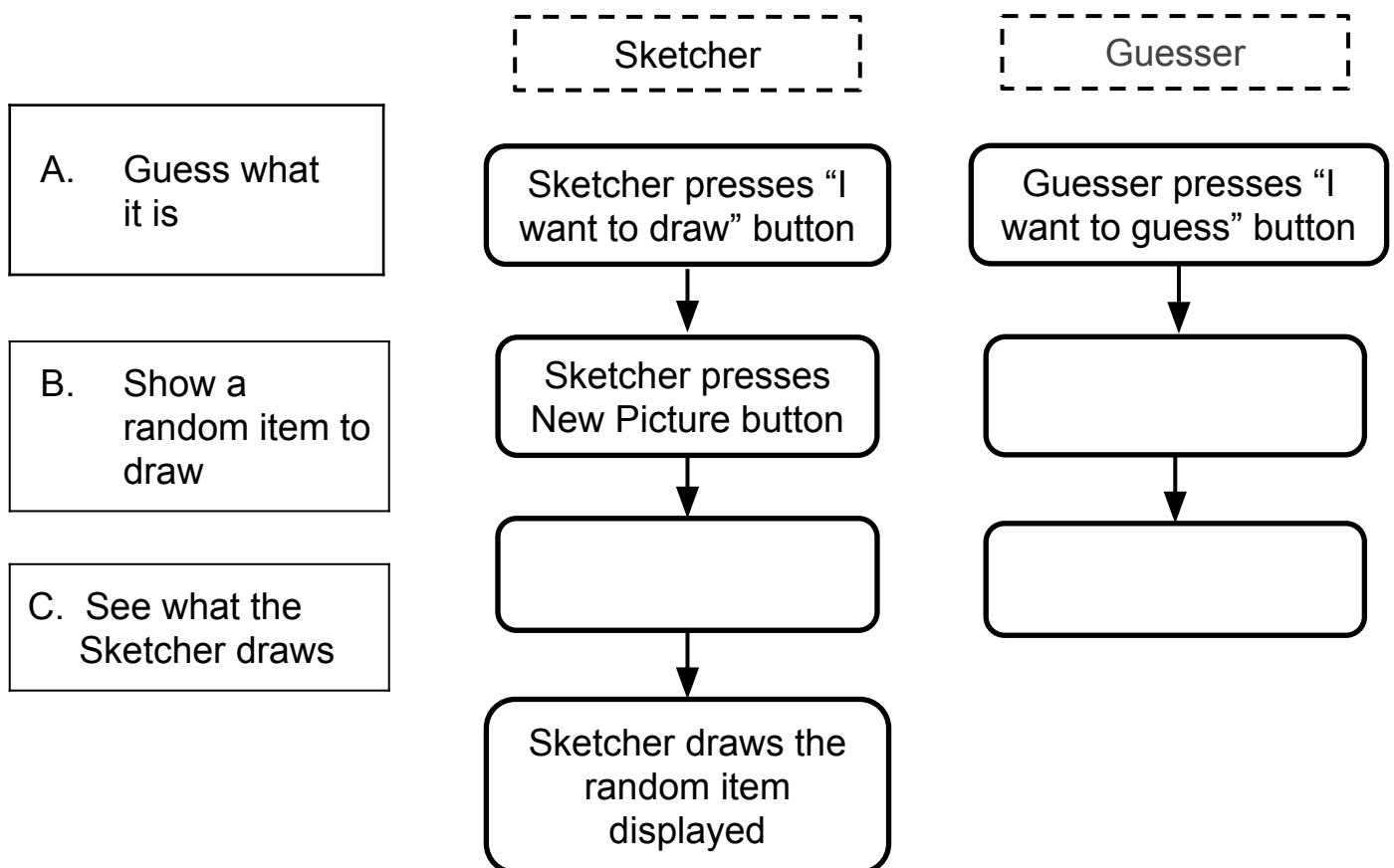# SKETCH & GUESS: PART 3

In this lesson, your drawing will be shown on your partner's screen so they can see what you have drawn on their device

SEQUENCE OF EVENTS

In Lessons 1 and 2, you built a Sketching app. To make it more fun, you will code it so you can draw something on your device and your partner can see the drawing on their device.

1 Review with your partner the diagrams below. Check that you understand the sequence of steps on the drawing part of the Sketch and Guess App. Fill in the empty spaces with A, B, or C.

Sketcher	Guesser

A. Guess what it is

B. Show a random item to draw

C. See what the Sketcher draws

Sketcher:
- Sketcher presses "I want to draw" button
- ↓
- Sketcher presses New Picture button
- ↓
- ▢ (empty)
- ↓
- Sketcher draws the random item displayed

Guesser:
- Guesser presses "I want to guess" button
- ↓
- ▢ (empty)
- ↓
- ▢ (empty)

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ADD GUESSERSCREEN

To add the ability for the Guesser to see what is being drawn, you need to add the GuesserScreen to the app.

**2** Open your SketchAndGuess project. Add a new screen and name it **GuesserScreen**.
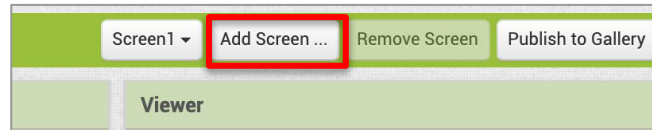
3 Set the GuesserScreen property *AlignHorizontal* to "**Center: 3**". Set the *Title* property to **"Sketch and Guess (Guesser)"**.

4 Add the following components to GuesserScreen.

Drawer	Component	Component Name	Properties
User Interface	Button	BackButton	*Width*: **33%**
			BackgroundColor: (choose a color)
			Text: "**Back**"
Layout	Horizontal-Arrangement	GuessArrange-ment	*Width*: **"Fill parent"**
			AlignHorizontal: **"Center: 3"**
User Interface	Label	DrawingLabel	*Text*: "**Guess what is being drawn**"
User Interface	Spinner	AnswerSpinner	*Prompt*: "**Guess the Drawing**"
Drawing and Animation	Canvas	Canvas1	*Width*: **"Fill parent"**
			Height: **"Fill parent"**
Storage	CloudDB	CloudDB1	
User Interface	Notifier	Notifier1	

ADD GUESSERSCREEN (continued)

Your GuesserScreen should look something like this:.
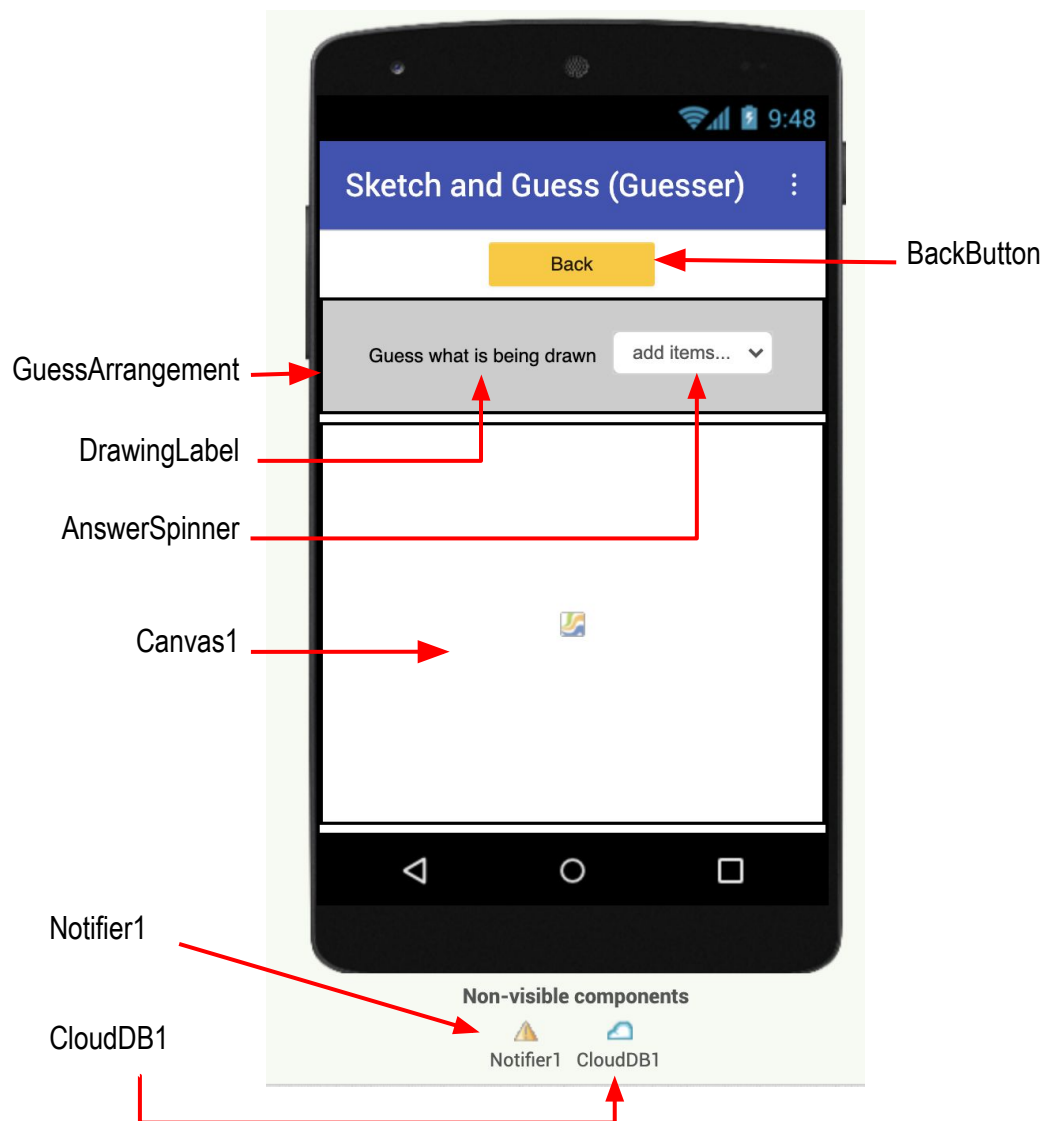
NAVIGATE BETWEEN SCREEN1 AND GUESSERSCREEN

Just like with **SketcherScreen**, you need to add the code that allows the user to get to the **GuesserScreen** by pressing the **GuesserButton** on **Screen1**, and to return to **Screen1** from **GuesserScreen** by pressing the **BackButton**.

5 Use the following blocks in Screen1 to open GuesserScreen when the user presses GuesserButton.

6 Use the following blocks in GuesserScreen to close GuesserScreen and return to Screen1 when the BackButton is pressed.

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USING CLOUDDB TO DRAW ACROSS DEVICES

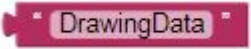In this lesson, you will use the **CloudDB** component that you used in the Two-button Game.

Using the **CloudDB.StoreValue** and **CloudDB.DataChanged** blocks, two devices communicate with each other through CloudDB, based on the tag.

A **tag** is a name you give to data. It works like a variable. Each **tag** has a **value**, just like variables have values.

You store a value by its **tag**, and you can see what has changed for each tag.

The suggested name of the tag to store what is being drawn is **DrawingData**.

Tags	Meaning	Sketcher (You)	Guesser (Partner)
DrawingData	The start point and end point for drawing	Store the coordinates of drawing	Get the coordinates of drawing

USING CLOUDDB TO DRAW ACROSS DEVICES

7 Switch to the SketcherScreen.

8 As the Sketcher draws, you'll store the drawing information in CloudDB.
- Add to the **Canvas1.Dragged** event to store the drawing information in CloudDB. Because there are 4 pieces of information (**prevX, prevY, currentX, and currentY**), you can add those 4 values to a list and store the list.
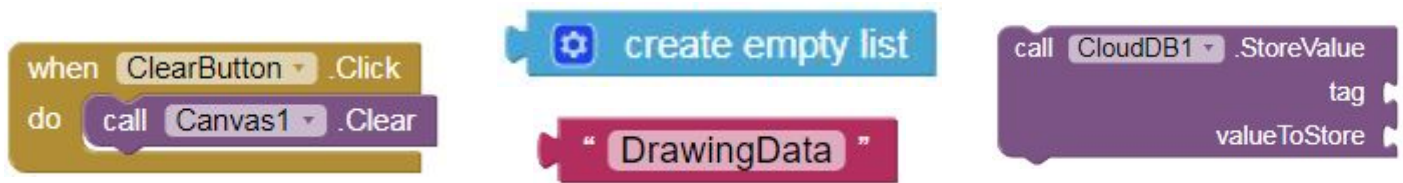
Use the blocks below.
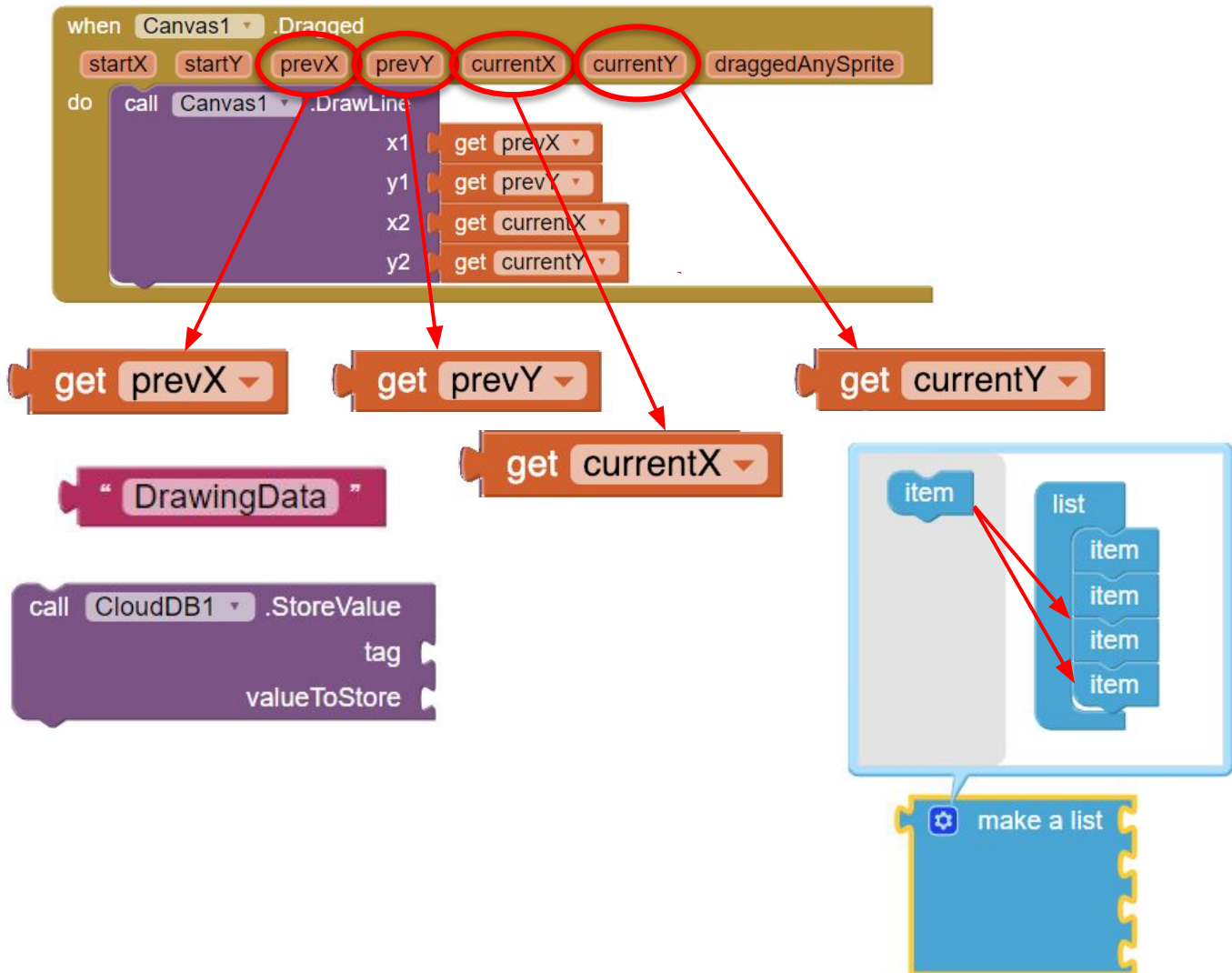
CLEAR THE CANVAS

When the Sketcher clears the screen, they need to send a message to the other device to clear that screen too.

9 Update ClearButton.Click to store information to signal clearing of the Canvas. A suggested way to do this is to use an empty list as the "DrawingData".

Use the blocks below.

GET DRAWINGDATA IN GUESSERSCREEN

10 Switch to GuesserScreen.

11 CloudDB sends out updated information in the DataChanged event. Code that event block to:
- ○ Test if the tag is "DrawingData".
- ○ If so, test if the value sent is an empty list.
  - ○ If an empty list, clear the Canvas.
  - ○ Otherwise, use the items in the value list as the start and end points to draw a line on the Canvas.
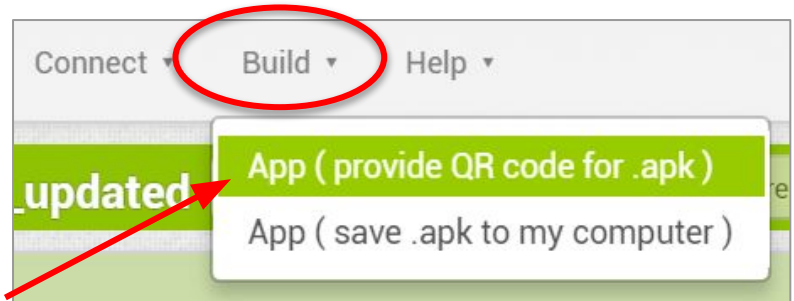
Use the following blocks.

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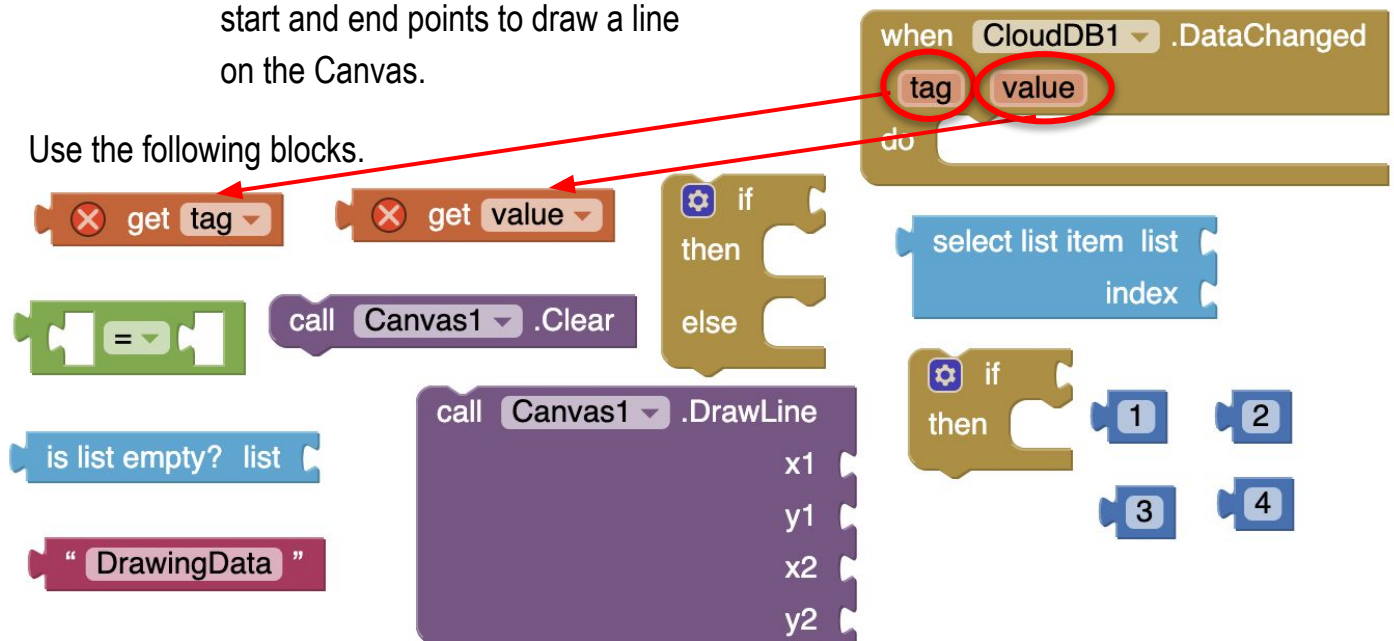
TEST THE APP

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. One person click the "I want to draw" button and the other click the "I want to Guess" button. Can one person draw and the other see it being drawn on their device?

COMPUTATIONAL THINKING CONCEPTS

Sketch And Guess Part 3

1. Events
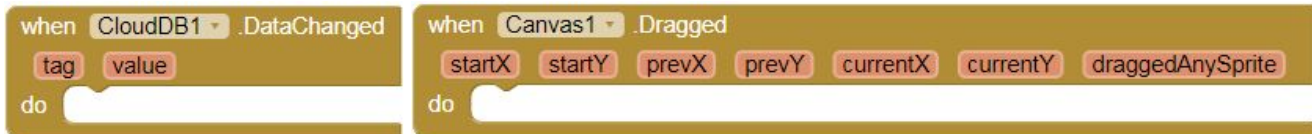
2. Conditionals

3. Naming / variables

4. Manipulation of data and elementary data structures