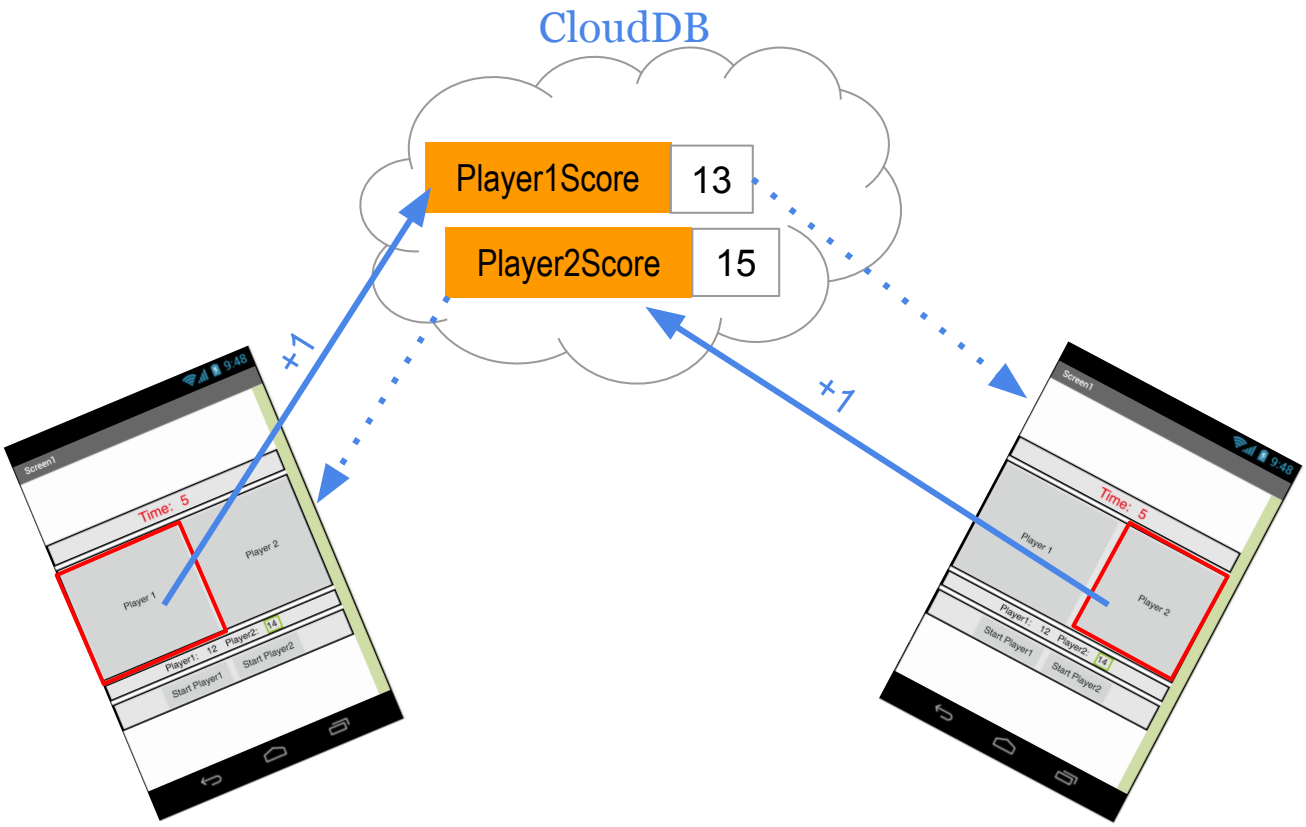
TWO-BUTTON GAME: PART 3

In this lesson, you will be adding functionality to make this a two player game over two devices.

HOW CLOUDDB WORKS

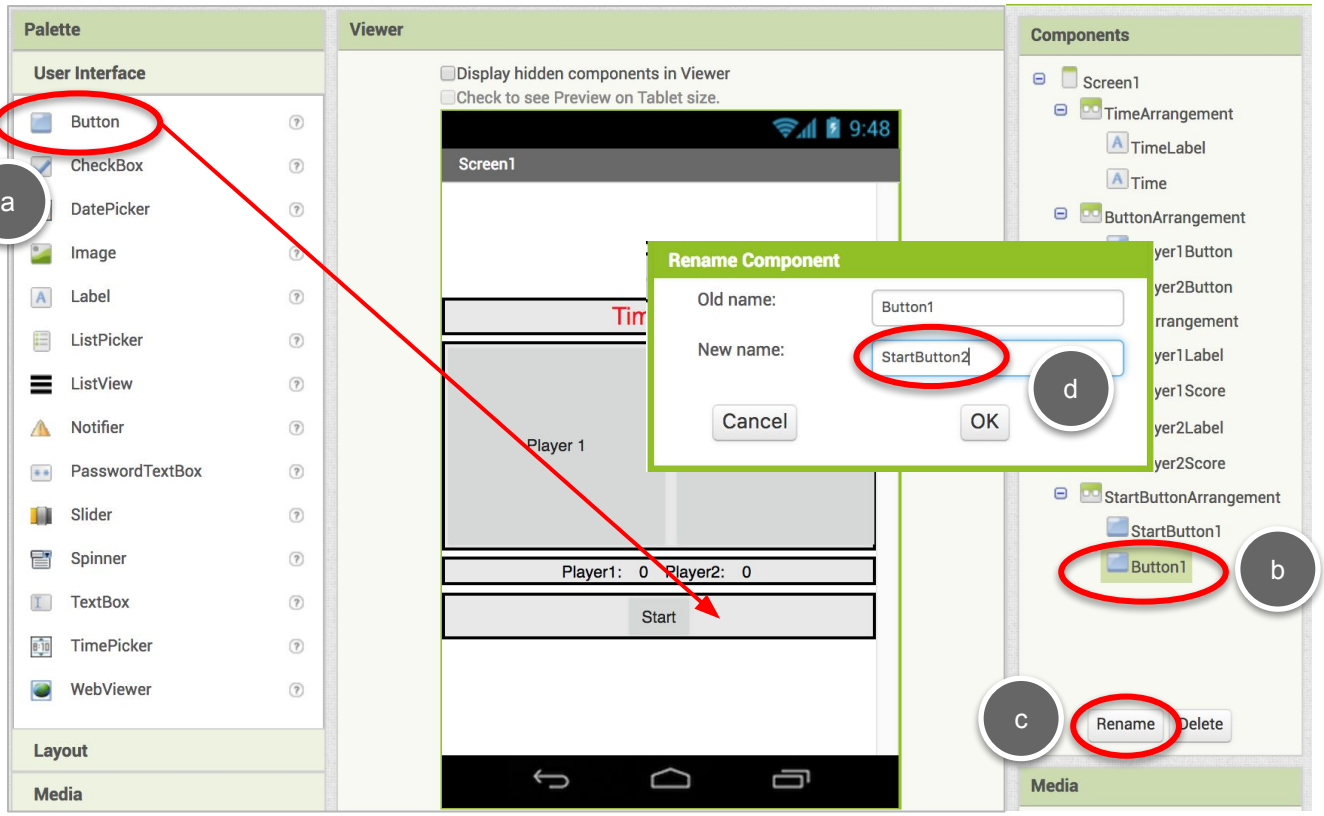
You will use CloudDB in the app to update each player's score on the other player's tablet by adding code to do the following. When a player clicks on their button, they'll store their new score in CloudDB. The DataChanged event will be triggered every time that happens, and that will signal the other player to update the score on their tablet.



START HERE

1 Open your TwoButtonGame app from Part 2, and switch to the Designer.

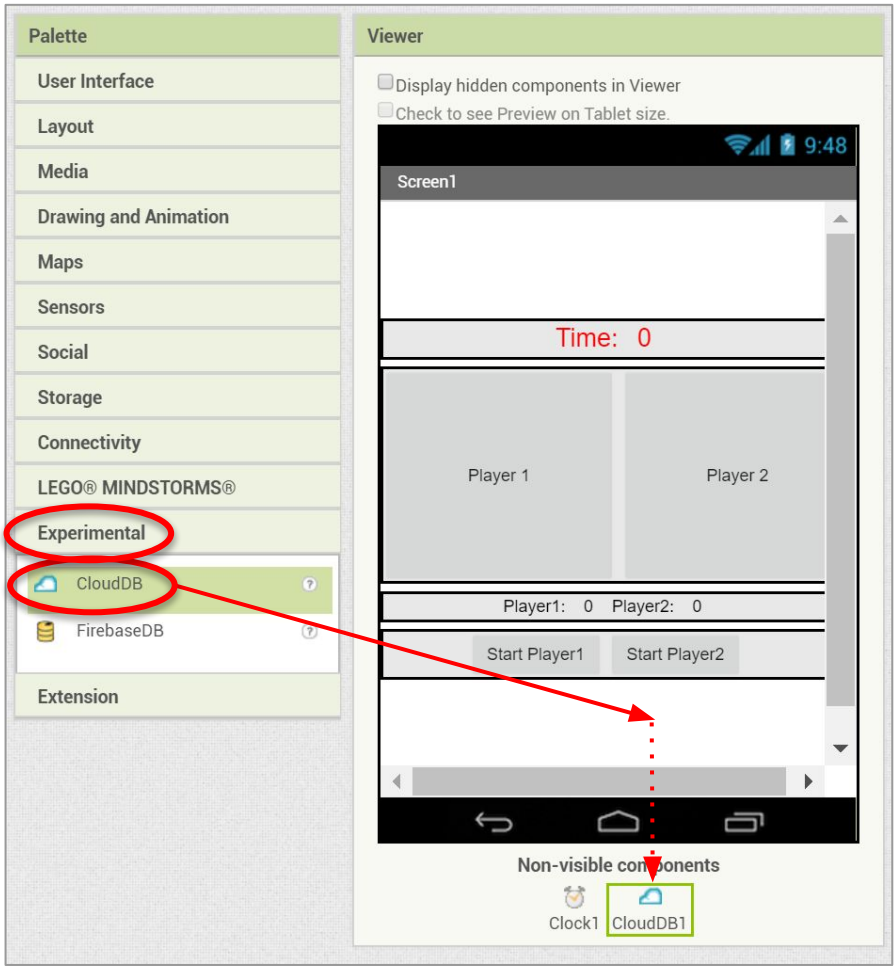
2 Drag in a second button to **StartButtonArrangement** and rename it **StartButton2**.

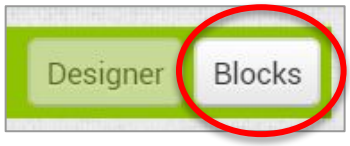


3 Change the *Text* of **StartButton1** to "Start Player1" and change the *Text* of **StartButton2** to "Start Player2".

ADD CLOUDDB

4 Drag in a **CloudDB** component from the Experimental drawer.
It's a non-visible component so it will appear below the Viewer screen.

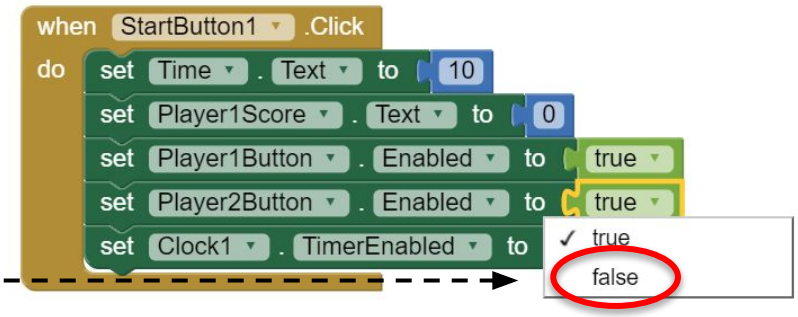


5 Switch back to the Blocks Editor. 

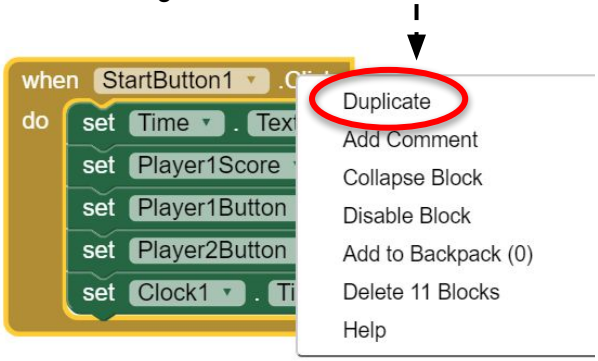
BLOCKS EDITOR

The first thing to do is update the Start buttons. **StartButton1** should be mostly correct already.

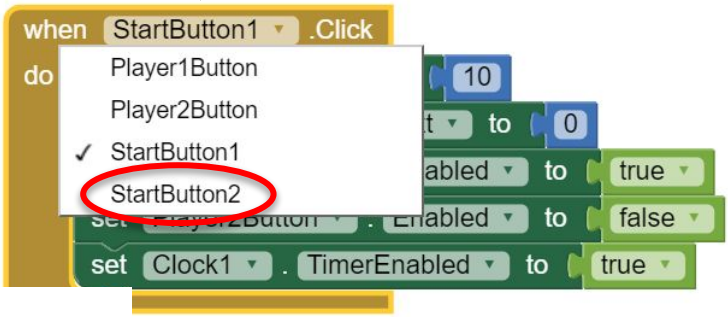
6 **Player2Button** should **not** be enabled for Player 1. Change **Player2Button.Enabled** to **false** by clicking on the arrow next to **true** and selecting **false**.



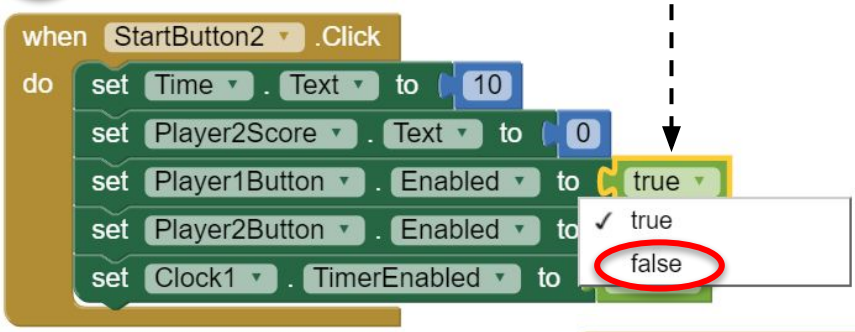
7 Rather than rewrite all the code, you can *Duplicate* **StartButton1.Click** and change it. Right click on **StartButton1.Click**, and select **Duplicate**.



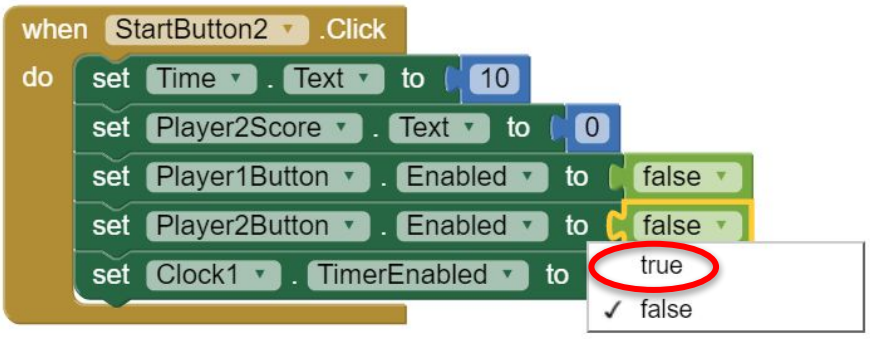
8 Click the drop down menu of **StartButton1** and change it to **StartButton2**.



9 Change **set Player1.Enabled** to **false**.



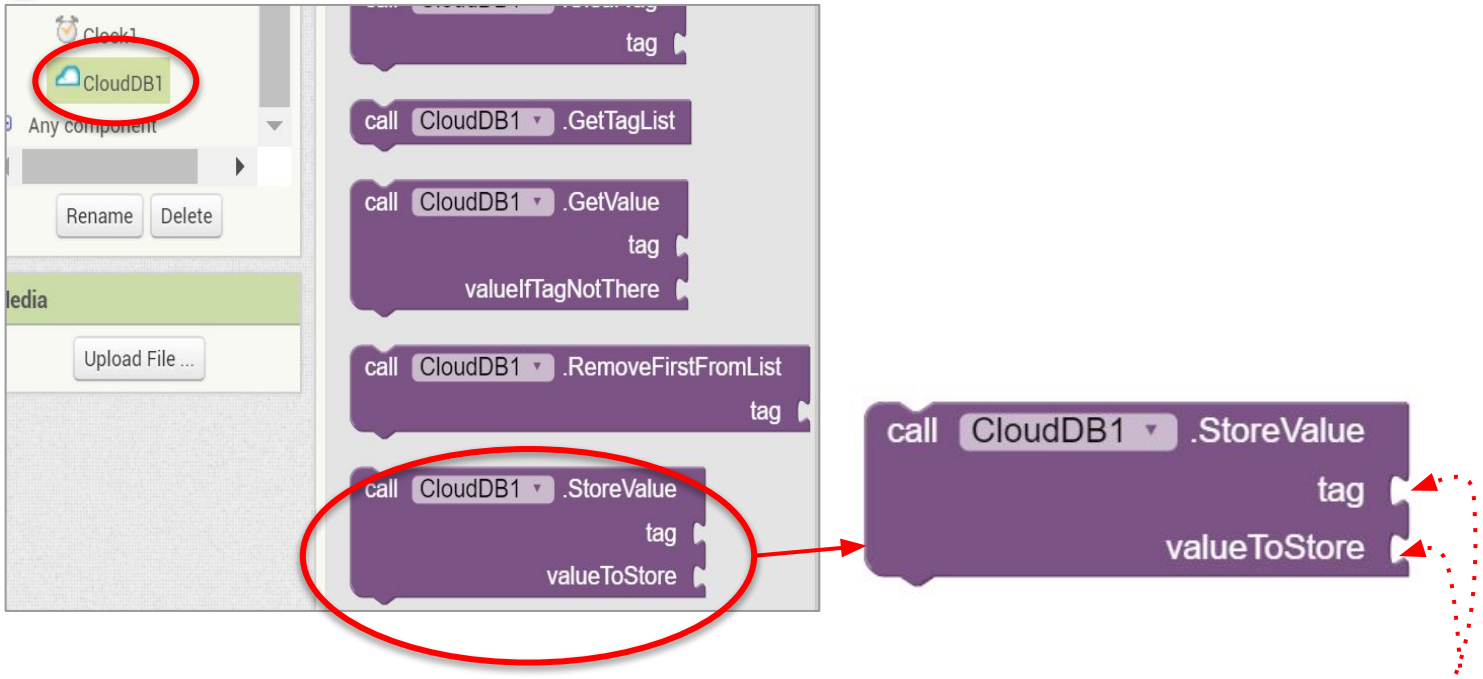
10 Nown change **set Player2.Enabled** to **true**.



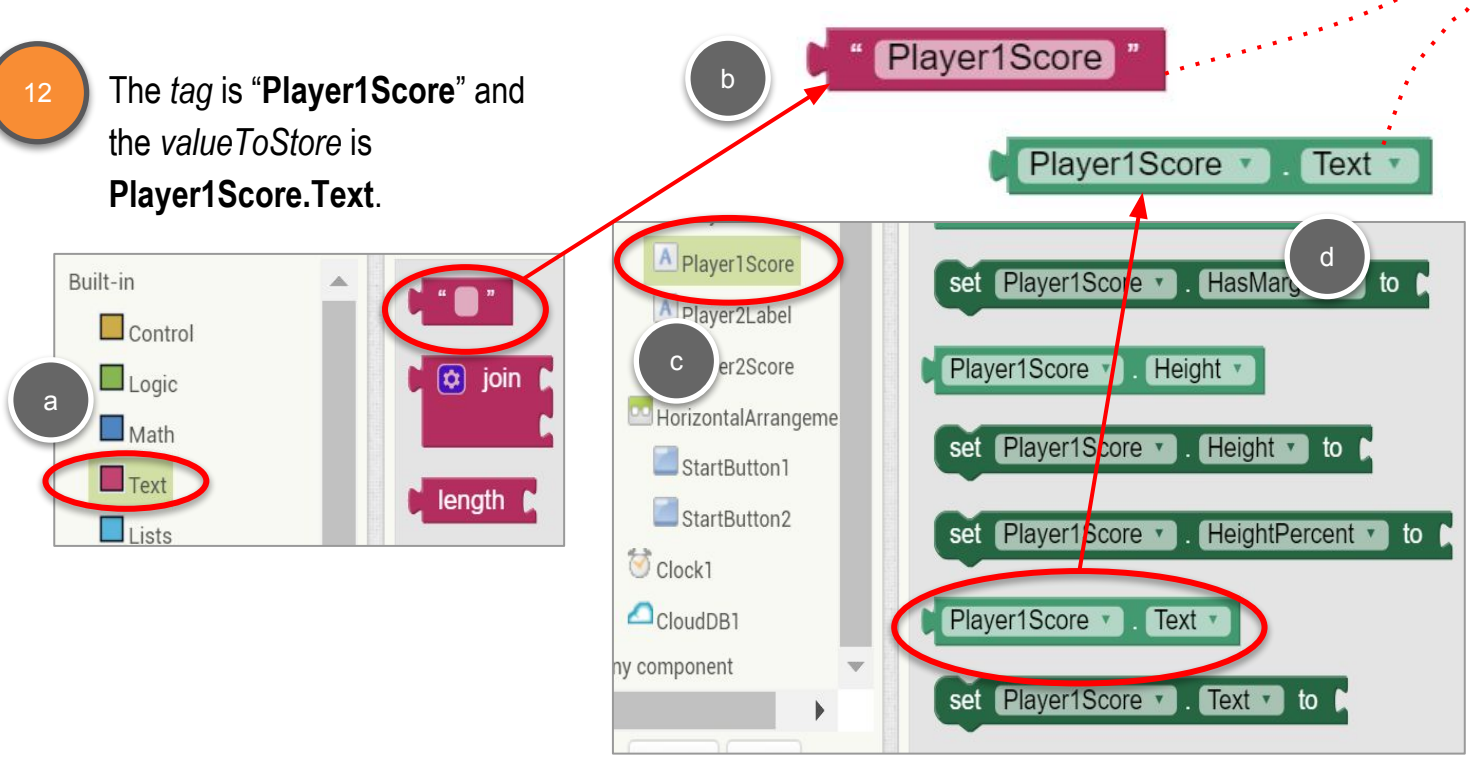
CLOUDDB STORE VALUE

Every time a player scores a point, save the new score in **CloudDB**.

11 Drag out a **CloudDB1.StoreValue** block.

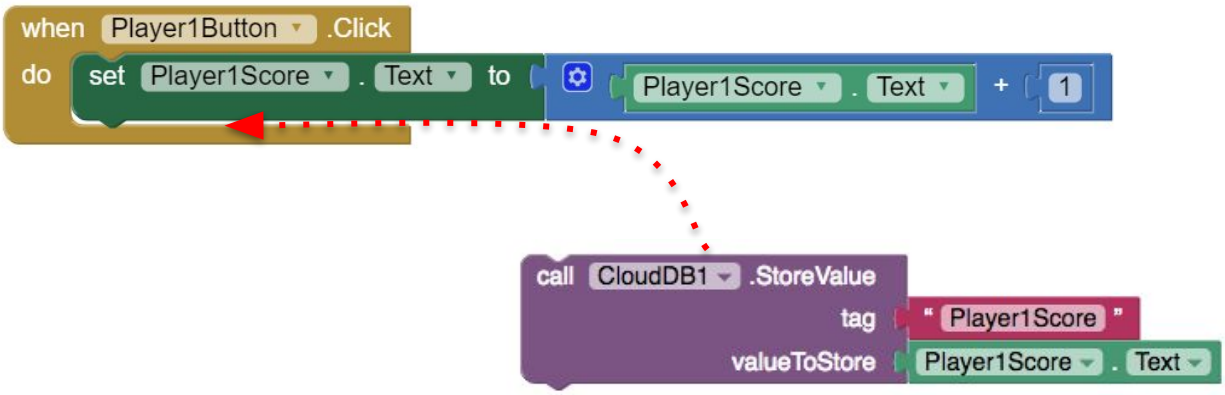


12 The *tag* is "**Player1Score**" and the *valueToStore* is **Player1Score.Text**.

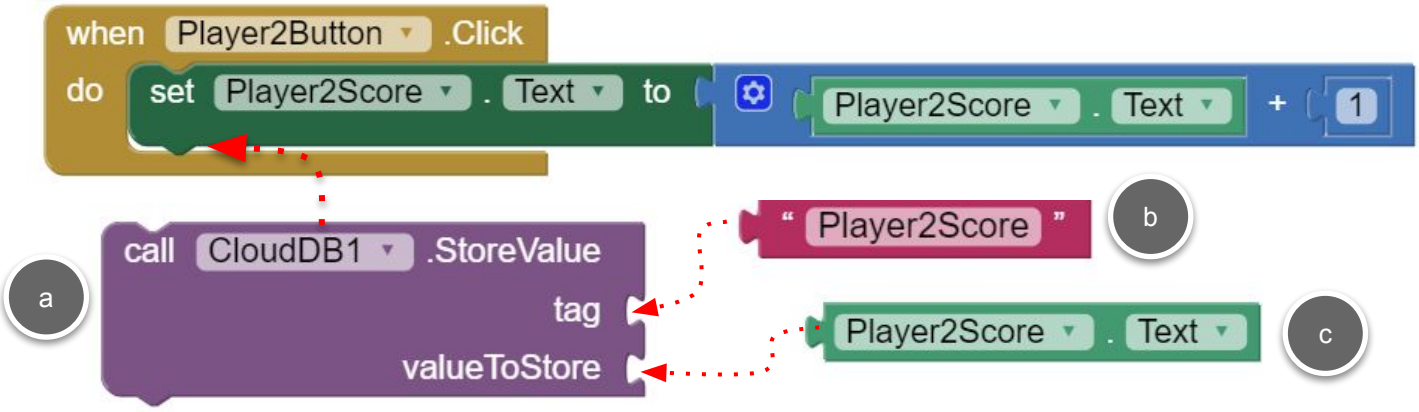


STORING VALUES

13 Drag the **CloudDB.StoreValue** block int the **Player1Button.Click** event block.



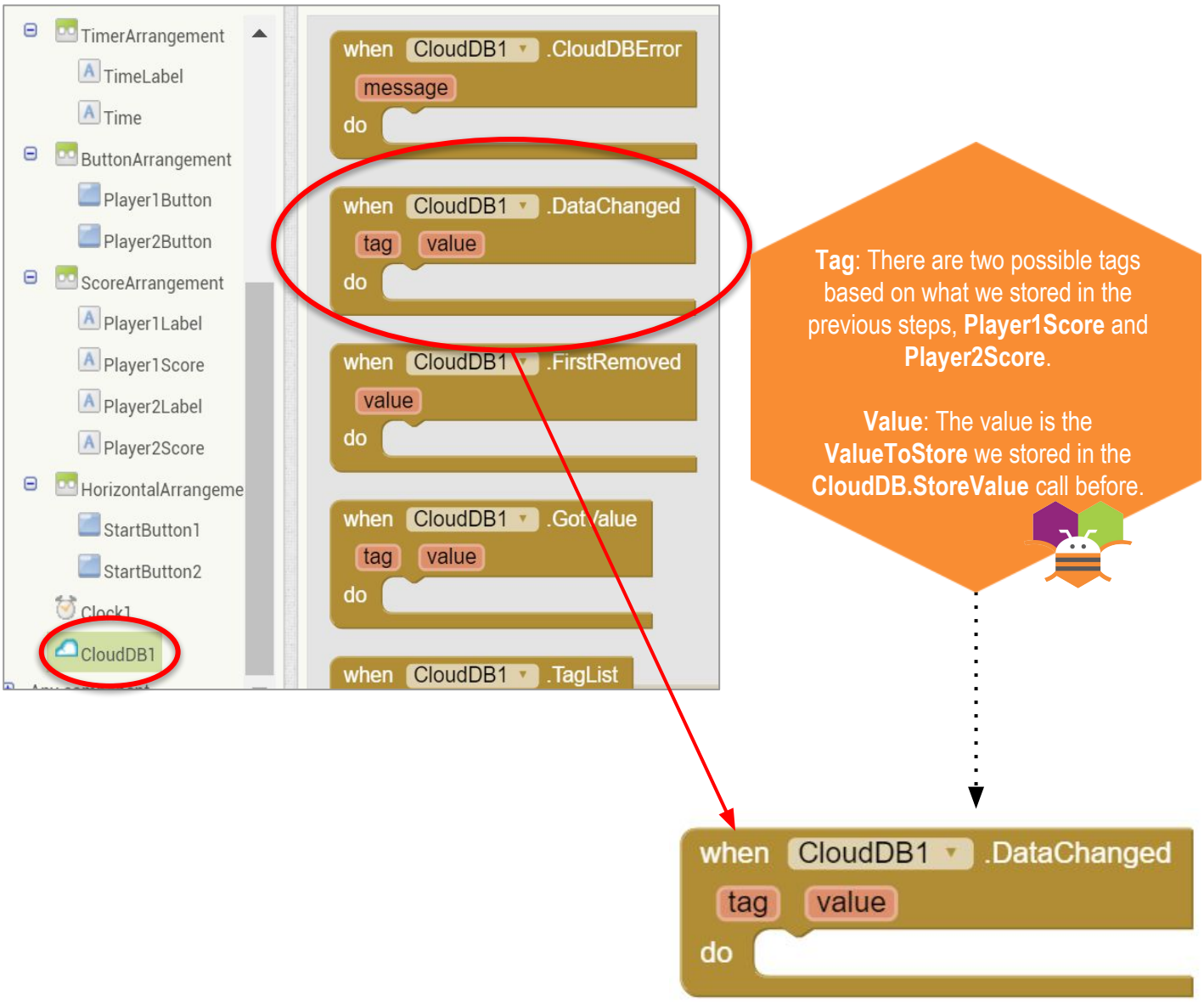
14 Repeat steps 11-13 for **Player2Button.Click,** using appropriate tag and valueToStore..



DATA CHANGED

Every time a player's score is saved in CloudDB, that generates a **CloudDB.DataChanged** event.

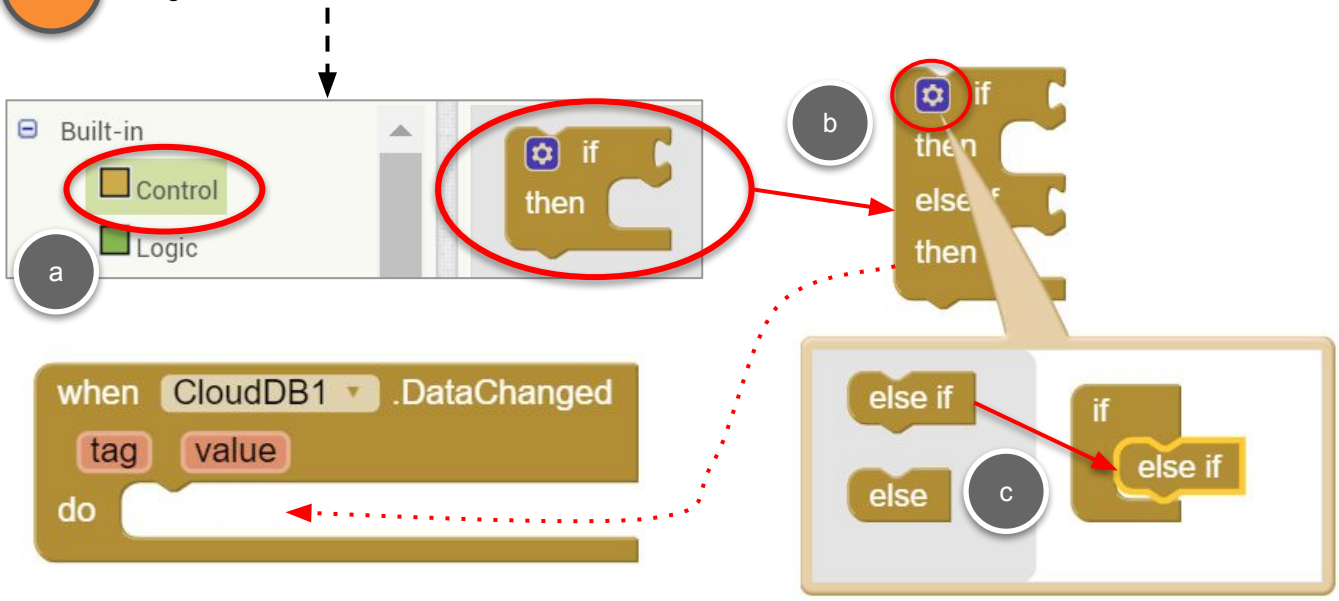
15 Drag out a **CloudDB1.DataChanged** block.



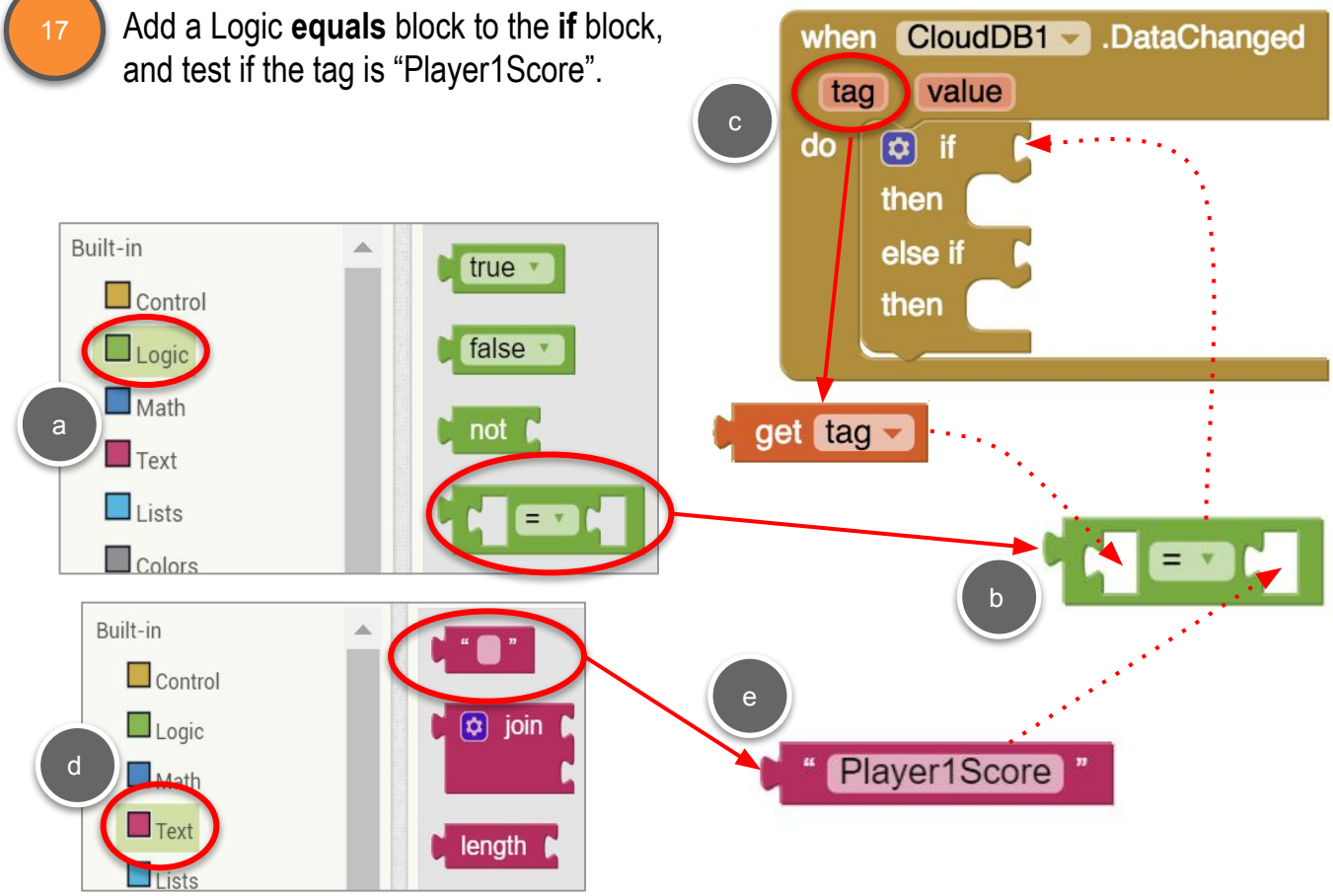
DATA CHANGED

You need to check which tag has been changed.

16 Drag out an **if** block, and then use the blue mutator to make an **if-then-else if** block.

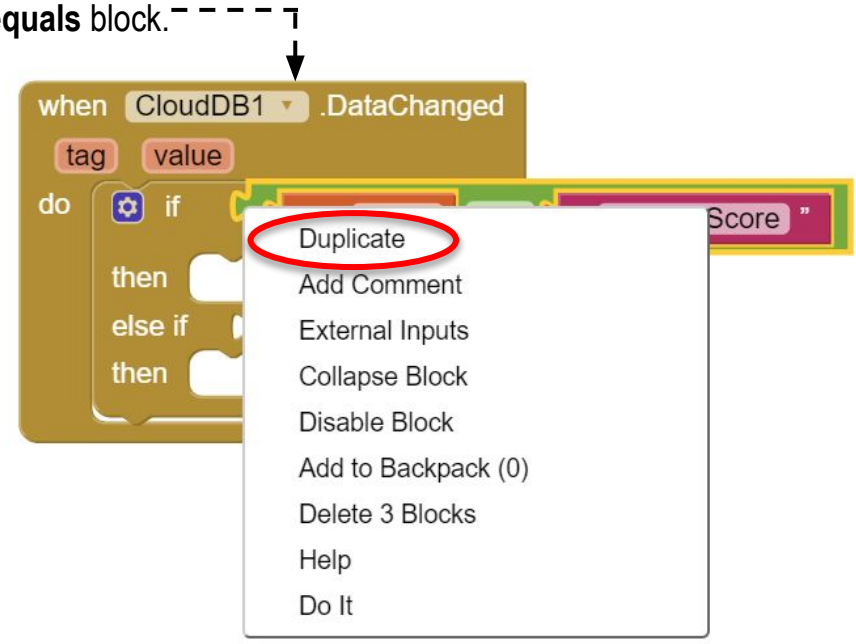


17 Add a Logic **equals** block to the **if** block, and test if the tag is "Player1Score".

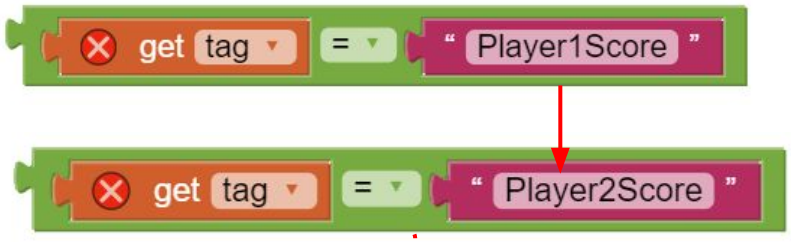


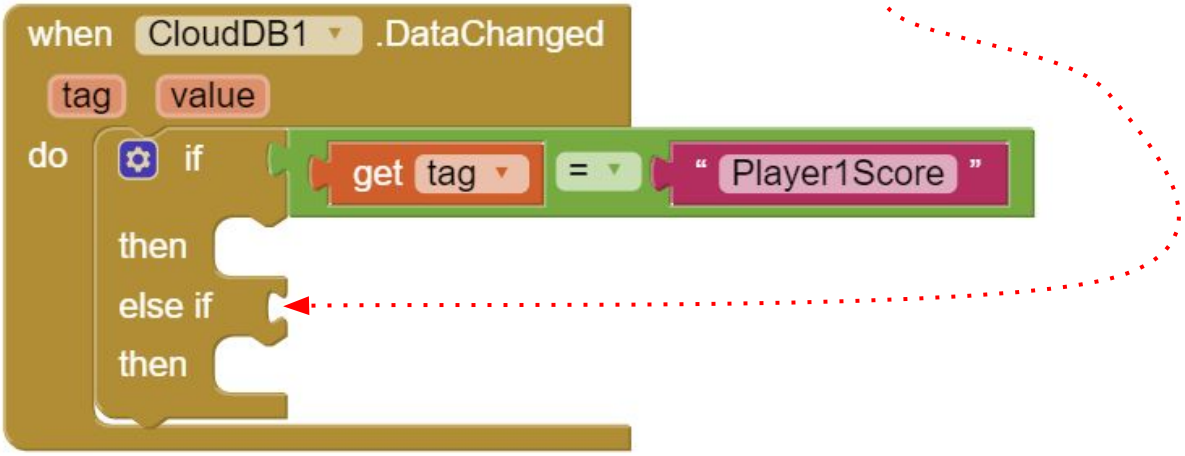
DATA CHANGED (continued)

18 **Duplicate** the green **equals** block.



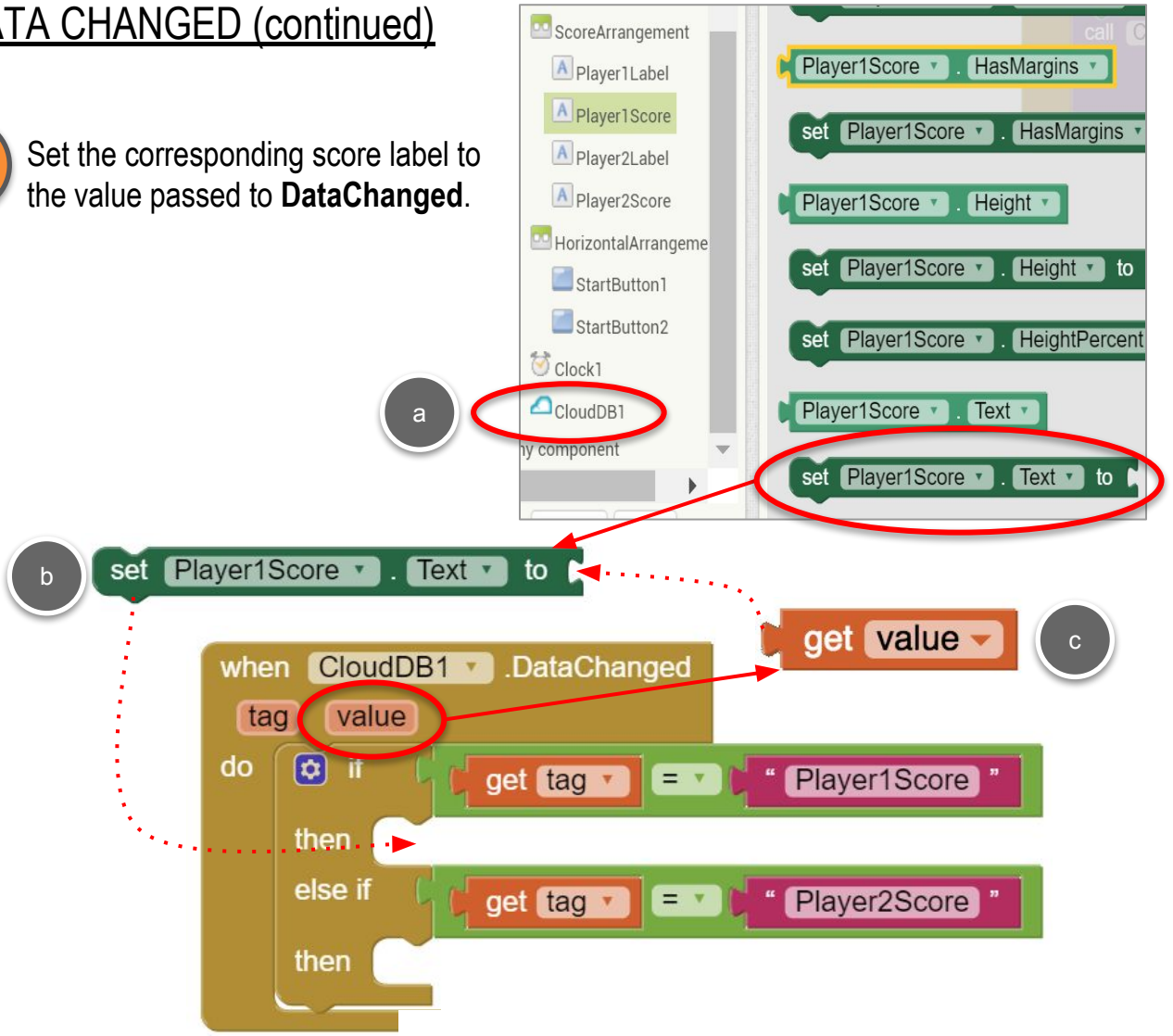
19 Change "Player1Score" to "Player2Score" in the text block, then snap it into the **else if**.



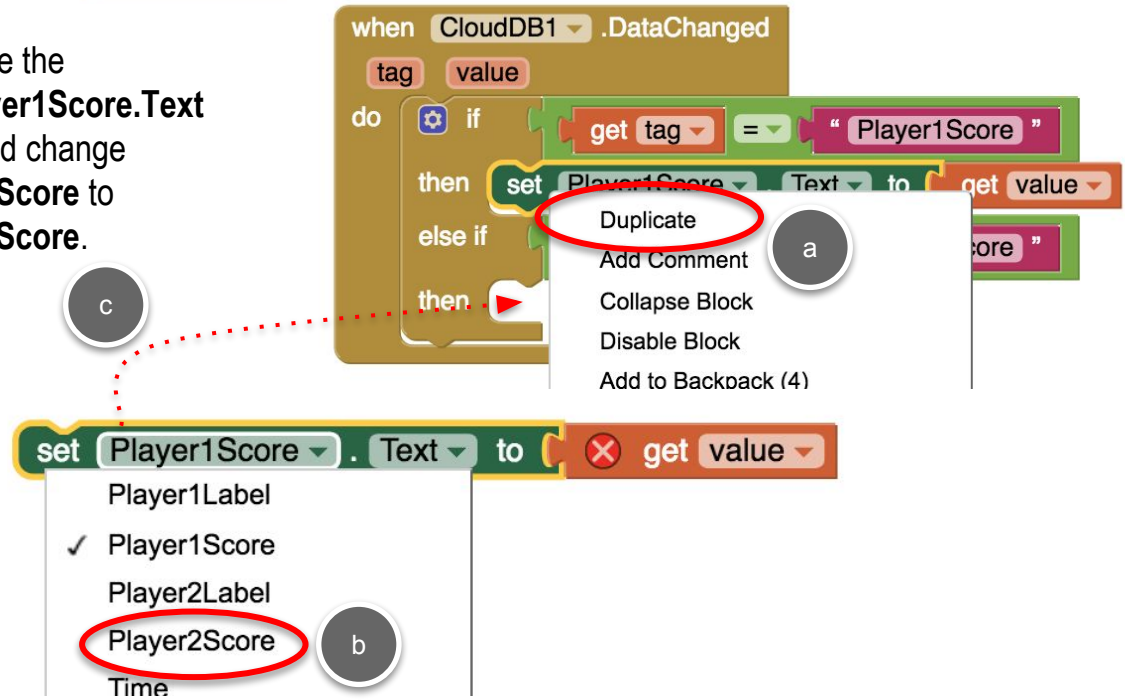


DATA CHANGED (continued)

20 Set the corresponding score label to the value passed to **DataChanged**.



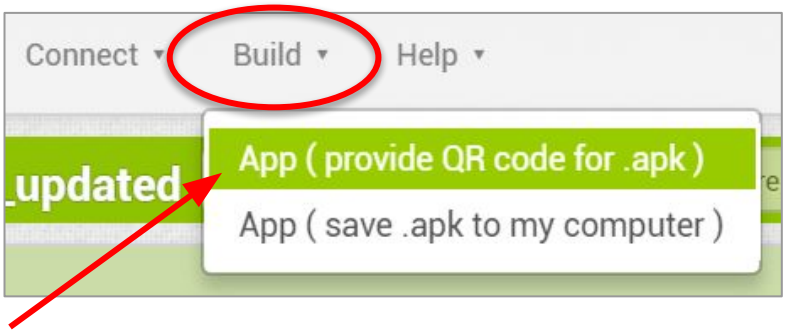
21 Duplicate the **set Player1Score.Text** block and change **Player1Score** to **Player2Score**.



TESTING

Time to test! Because this game app sends scores to the cloud, it's helpful to test using two devices, so you can see that each player sees the other's updated score. You can only test with one AI2 Companion, so you'll make your project an apk file and install the app on two separate tablets.

22 Go to the "Build" menu at the top of the screen, and click on "App (provide QR code for .apk)". This will start the process of building the app so that it can be installed on any tablet.



23 A QR code will appear in a pop-up window once the app is built. When it appears, both you and your partner should scan it using your devices. Follow the prompts to download and install the .apk on your tablets.

24 Play the game against your partner on your own device. Does it work correctly? Do the scores update correctly?

Choose Ways to Extend Your App

Here are a few features you could add if you want to expand your app

Add sounds! One for Player1 and one for Player2!

Add a label to display who is currently leading

Add a High Score that is saved in CloudDB

What other ideas do you have?

TWO-BUTTON GAME: PART 3

COMPUTATIONAL THINKING CONCEPTS

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

Two-Button Game
1. Events: 
2. Conditionals: 
3. Data Manipulation: