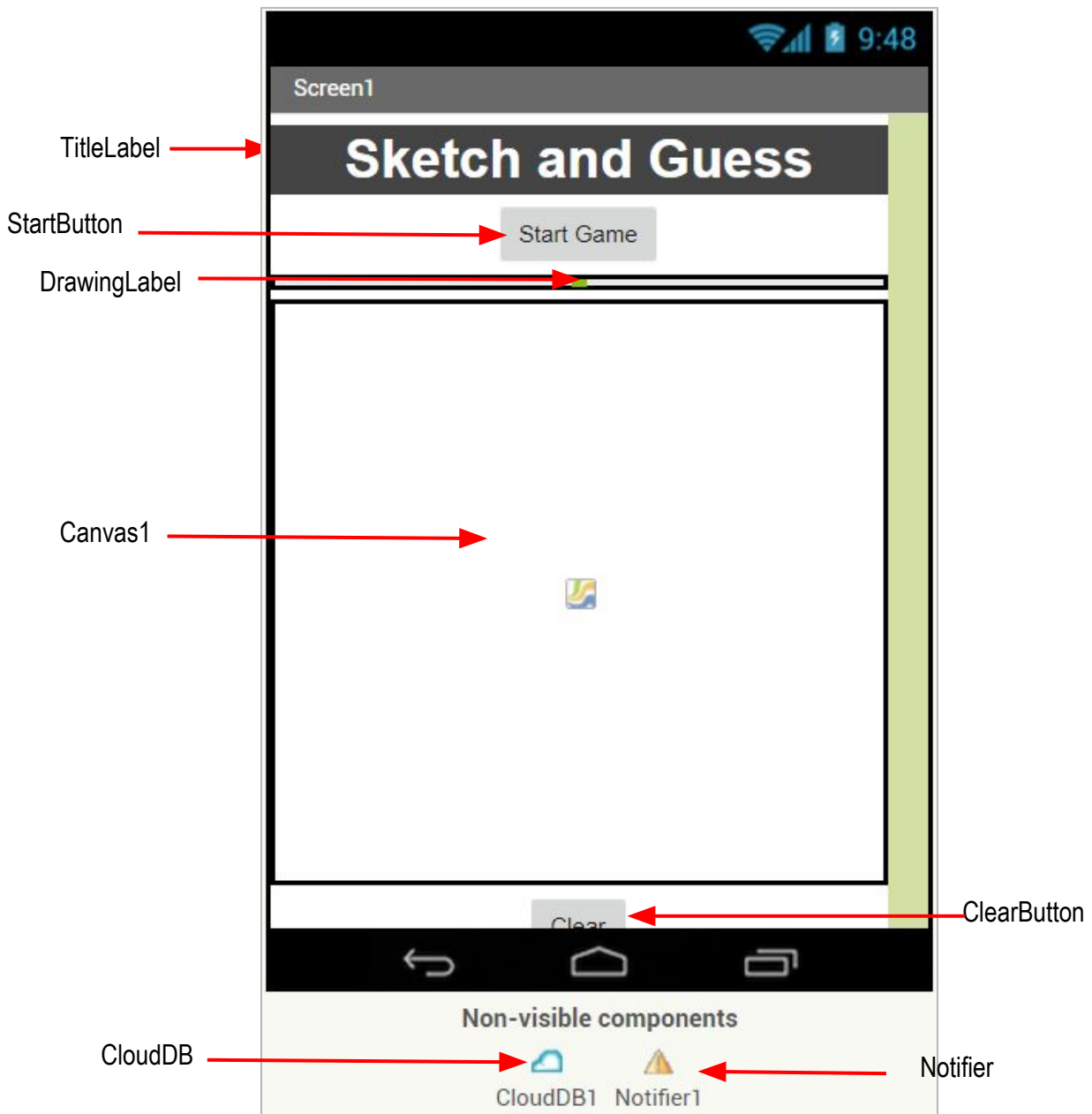


SKETCH & GUESS: PART 1

START HERE

In this lesson, you will make a simple drawing app.

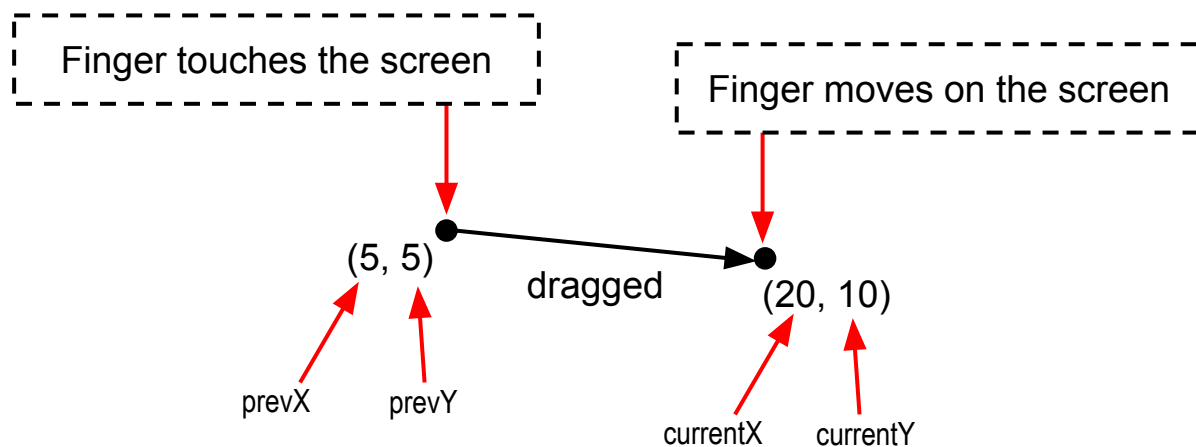
- 1 Open the SketchAndGuess_template project.
- 2 With your partner, look at the user interface components that are included in the template. Try to figure out what all the components do.



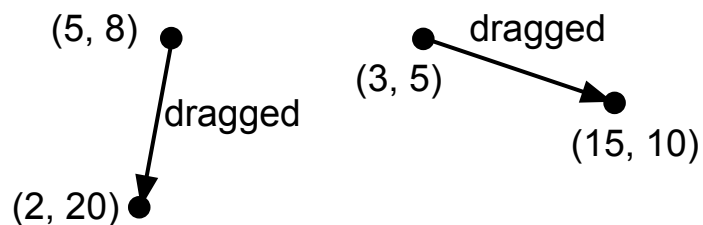
HOW TO DRAW A LINE IN THE APP

To draw something on the Canvas, you need to use the **when Canvas.Dragged** block and the **call Canvas1.DrawLine** blocks.

The diagram below shows how to use coordinates to draw a line in the app. A line is drawn by joining two points. Using **Canvas1.DrawLine**, you need to specify the position of the start point (x1, y1) and the position of the end point (x2, y2).



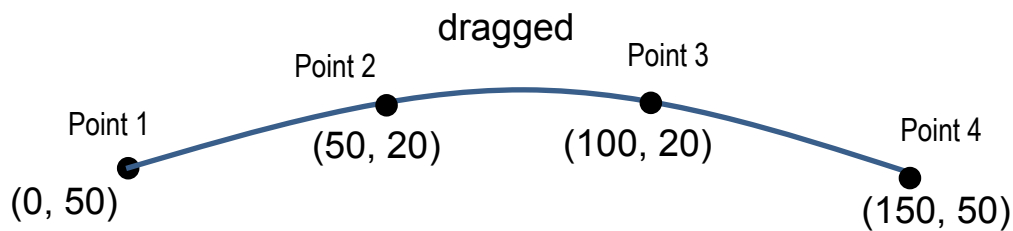
If you want to draw a line in the app, you need to use **prevX**, **prevY** and **currentX**, **currentY**. Below please work with your partner to fill in the blanks.



prevX		
prevY		
currentX		
currentY		

HOW TO DRAW A CURVE IN THE APP

A line is formed by connecting many dots. Each of the dots is represented by its coordinate (x,y).



If you want to draw a curve in the app, you need to draw many lines, each with its own **prevX**, **prevY** and **currentX**, **currentY**. Below please work with your partner to fill in the blanks.

	segment 1 (Point 1-Point 2)	segment 2 (Point 2-Point 3)	segment 3 (Point 3-Point 4)
prevX			
prevY			
currentX			
currentY			

DRAW WHEN USER DRAGS ON THE CANVAS

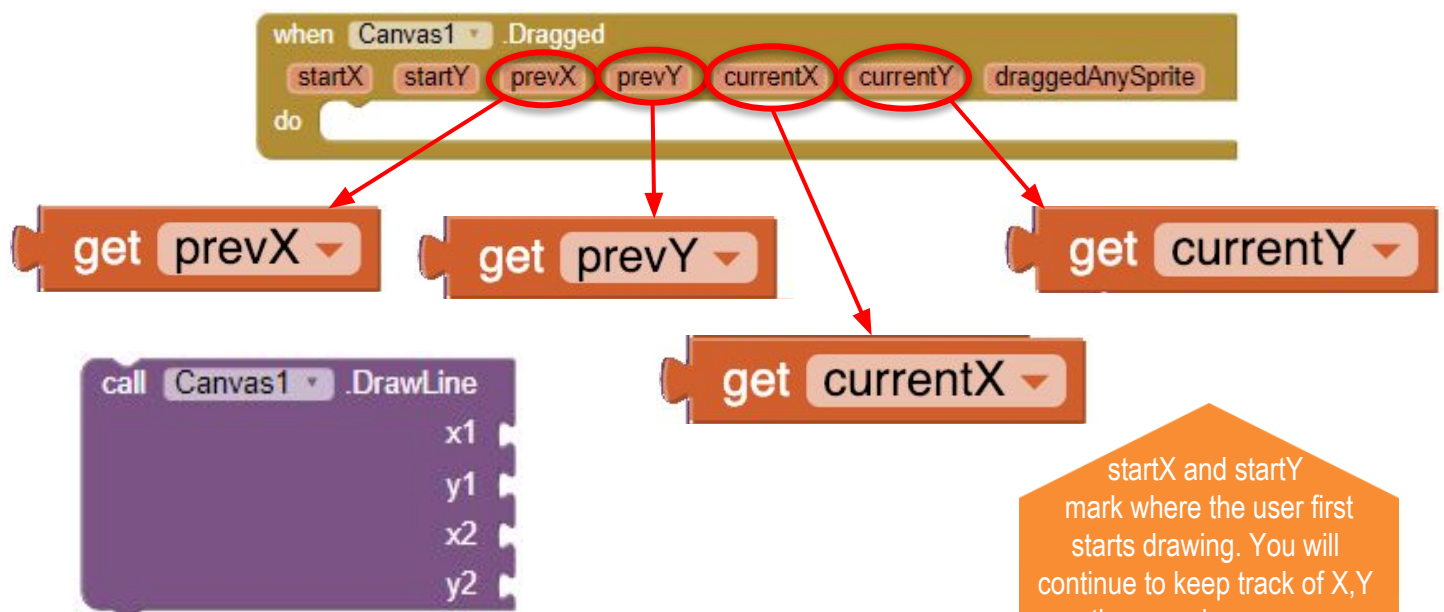
3

Switch to the Blocks editor from the Designer. — — — — ►



4

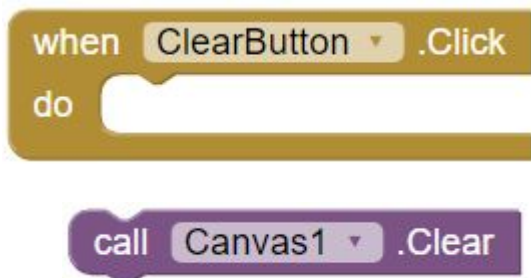
First step is to write the code to draw a line when the user drags their finger on the screen. Use the blocks below.



startX and startY mark where the user first starts drawing. You will continue to keep track of X,Y as the user draws, so use prevX, prevY to currentX, currentY.

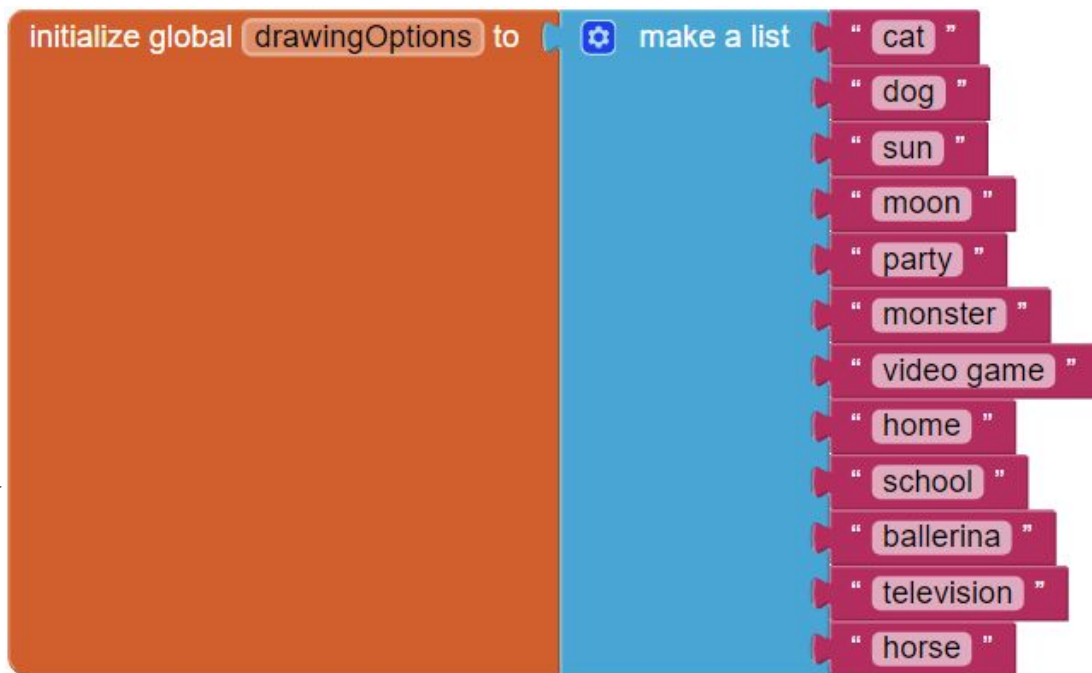
5

And clear the Canvas when the user clicks the ClearButton. Use the blocks below.



TELL THE SKETCHER WHAT TO DRAW

- 6 There is a list variable in the template, calling **drawingOptions**, that has a list of possible objects to draw. Modify the items as you wish.



- 7 Also note there is a **currentDrawing** variable, which will be used to save a random item from the **drawingOptions** list.



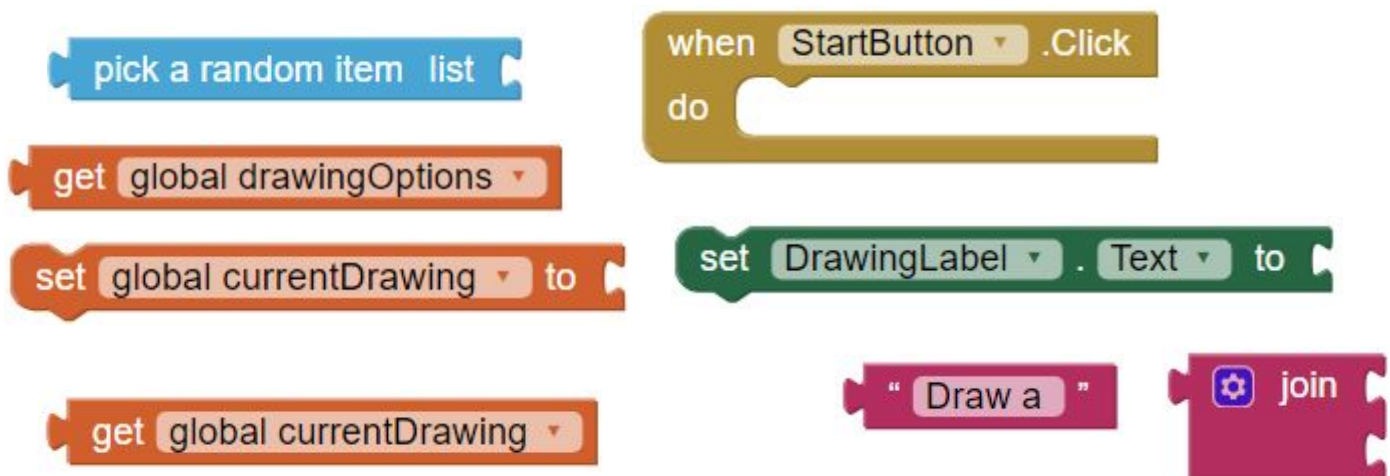
STARTBUTTON

8

When the StartButton is clicked, do the following:

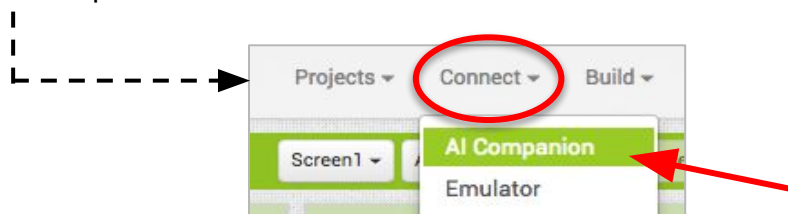
- Pick a random item from the drawingOptions list and store it in the variable currentDrawing.
- Tell the user what to draw by displaying it in the DrawingLabel.

Use the following blocks.



9

Test using the MIT AI2 Companion.



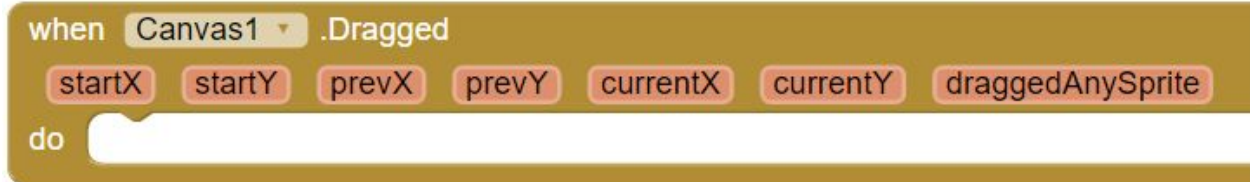
COMPUTATIONAL THINKING CONCEPTS

Sketch And Guess Part 1

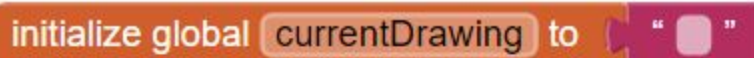
1. Sequences



2. Events



3. Naming/Variables



4. Manipulation of data and elementary data structures

