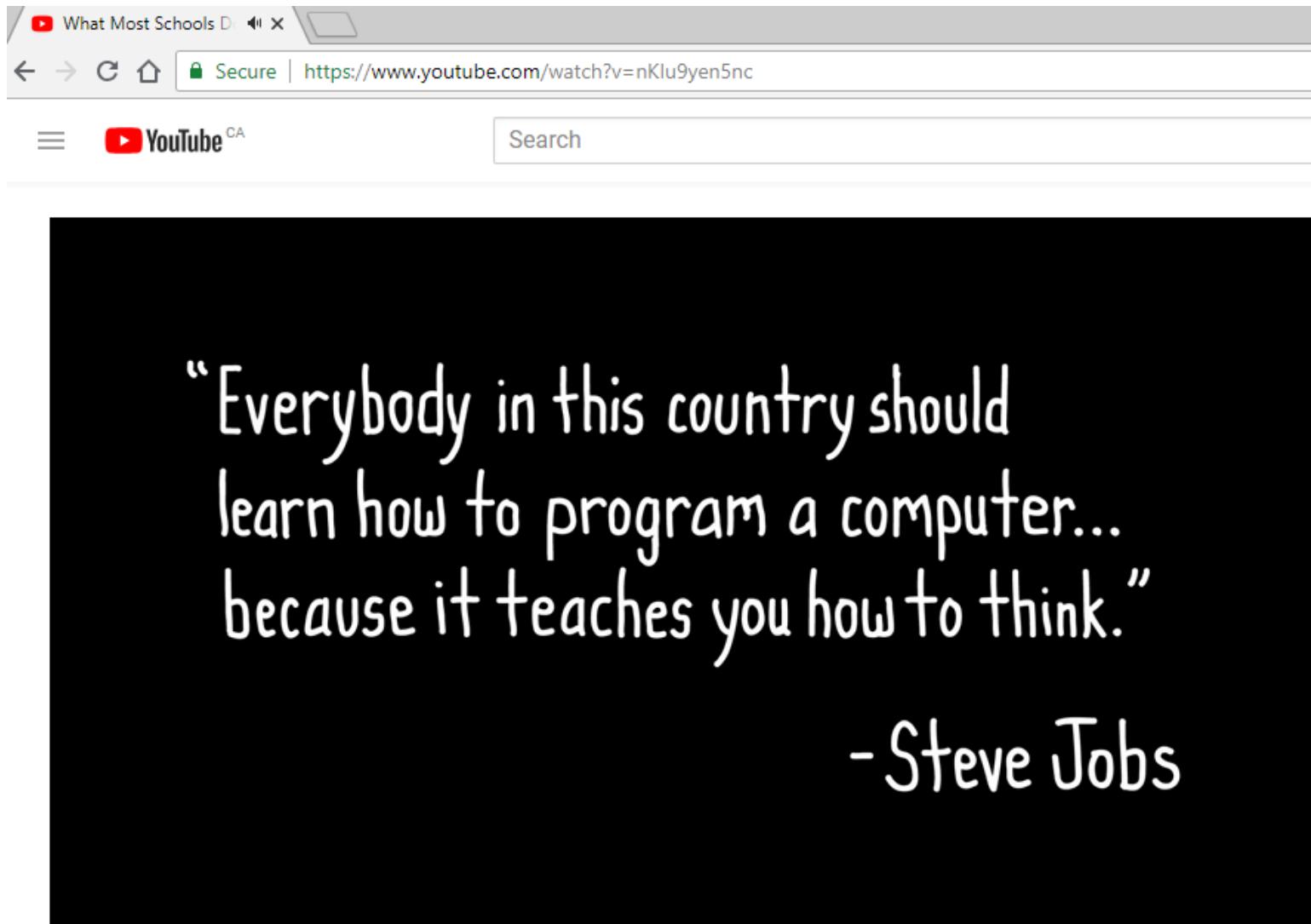


Introduction to AppLab

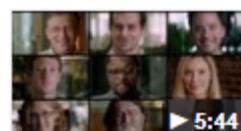
Widgets & Graphical User Interfaces



What Most Schools Don't Teach

14,415,893 views

What Most Schools Don't Teach - YouTube



<https://www.youtube.com/watch?v=nKlu9yen5nc>

Feb 26, 2013 - Uploaded by Code.org

Learn about a new "superpower" that isn't being taught in 90% of US schools.

Starring Bill Gates, Mark ...

In 2013, the tech industry was concerned about the shortage of good programmers.

This video started circulating.

<https://www.youtube.com/watch?v=nKlu9yen5nc>



To train the needed programmers, many tech leaders have given money and time to get code.org's on-line courses running.



Code.org - Projects

Secure | https://studio.code.org/projects#/

My Dashboard Course Catalog Projects Professional Learning Hi Gorski

Projects

Over 24 million projects created

My Projects

Public Projects

Start a new project



Play Lab



Artist



App Lab



Game Lab

▼ View full list

	Name	Updated ▾	
	Suduko	6/26/18 4:03 PM	<button>Rename</button> <button>Publish</button> <button>Delete</button>
	SomethingSomething	6/26/18 4:01 PM	<button>Rename</button> <button>Publish</button> <button>Delete</button>

Design Mode – setting up the widgets on the screen

Suduko
Saved 2 months ago

Rename Share Remix Create New My Projects Hi Gorski Version History

Design

Code Data

screen1

Sudoku

Fill the grid so that each row, column and 4-square box contains one of each sea-creatures.

Check Reset

Run

Design Toolbox

Drag the elements into your app!

Button Text Input Dropdown Label Radio Button Checkbox Image Canvas Screen Text Area Chart Slider

Workspace

Click on an element or choose it from the dropdown below to edit its properties. Create code in Events.

PROPERTIES EVENTS

id: a

width (px): 65

height (px): 65

x position (px): 12

y position (px): 94

image: b0.png Choose...

fit image: contain

hidden:

Delete Duplicate

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Code Mode – setting up blocks for the program

Suduko
Saved 2 months ago

Rename Share Remix Create New My Projects Hi Gorski Version History Show Text

Code Design Data

screen1

Sudoku

Fill the grid so that each row, column and 4-square box contains one of each sea-creatures.

Check Reset Run

Toolbox

- UI controls
- Data
- Control
- Variables
- Canvas
- Turtle
- Math
- Functions

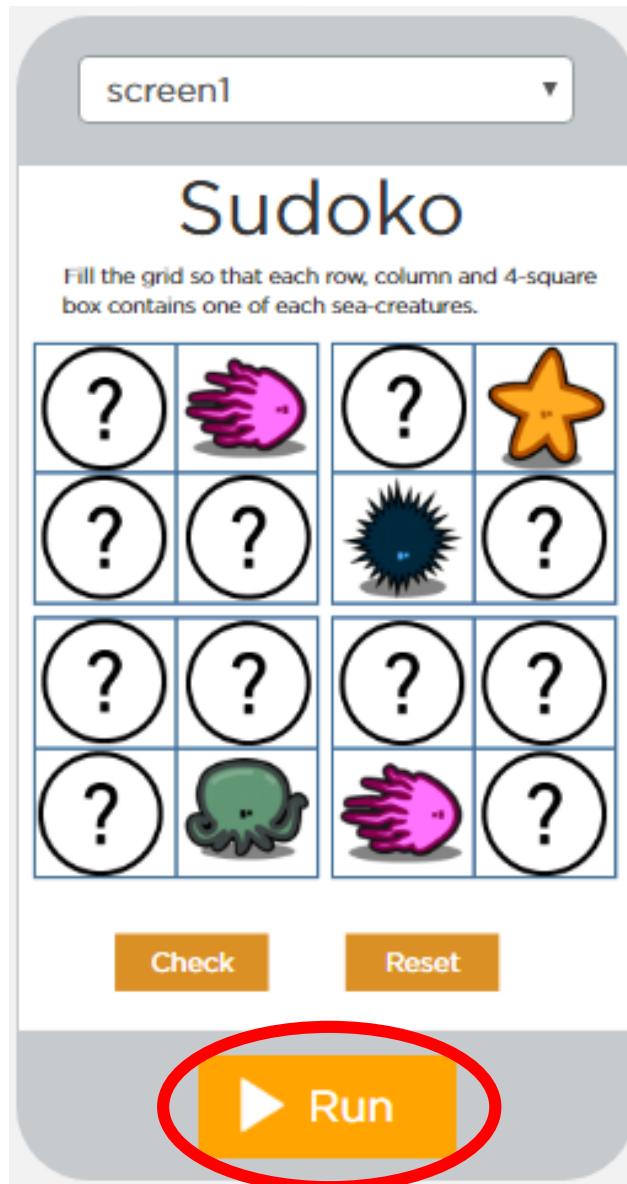
Workspace:

```
--  
13 onEvent("a", "click", function(event) {  
14     a++;  
15     if(a>4){  
16         a=1;  
17     }  
18     setImageURL("a", "b"+a+".png");  
19 } );  
  
20 onEvent("c", "click", function(event) {  
21     c++;  
22     if(c>4){  
23         c=1;  
24     }  
25     setImageURL("c", "b"+c+".png");  
26 } );  
  
27 onEvent("e", "click", function(event) {  
28     e++;  
29     if(e>4){  
30         e=1;  
31     }  
32     setImageURL("e", "b"+e+".png");  
33 } );
```

Show Debug Commands Debug Console Clear Watch

Privacy Policy Copyright More ▾

Run Mode – seeing if your code works



Not Knots

Only one of these ropes would make a knot if you pulled both ends. Which one?

A B
C D

Answer

Click the above button to answer.

Built on Code Studio ▾

How many widgets are on this screen?

Which widget types are on this screen?

How many widget types are on this screen?

Widget Types:

Button

Button



Text Input



Dropdown

abc

Label



Radio Button



Checkbox



Image



Canvas



Screen



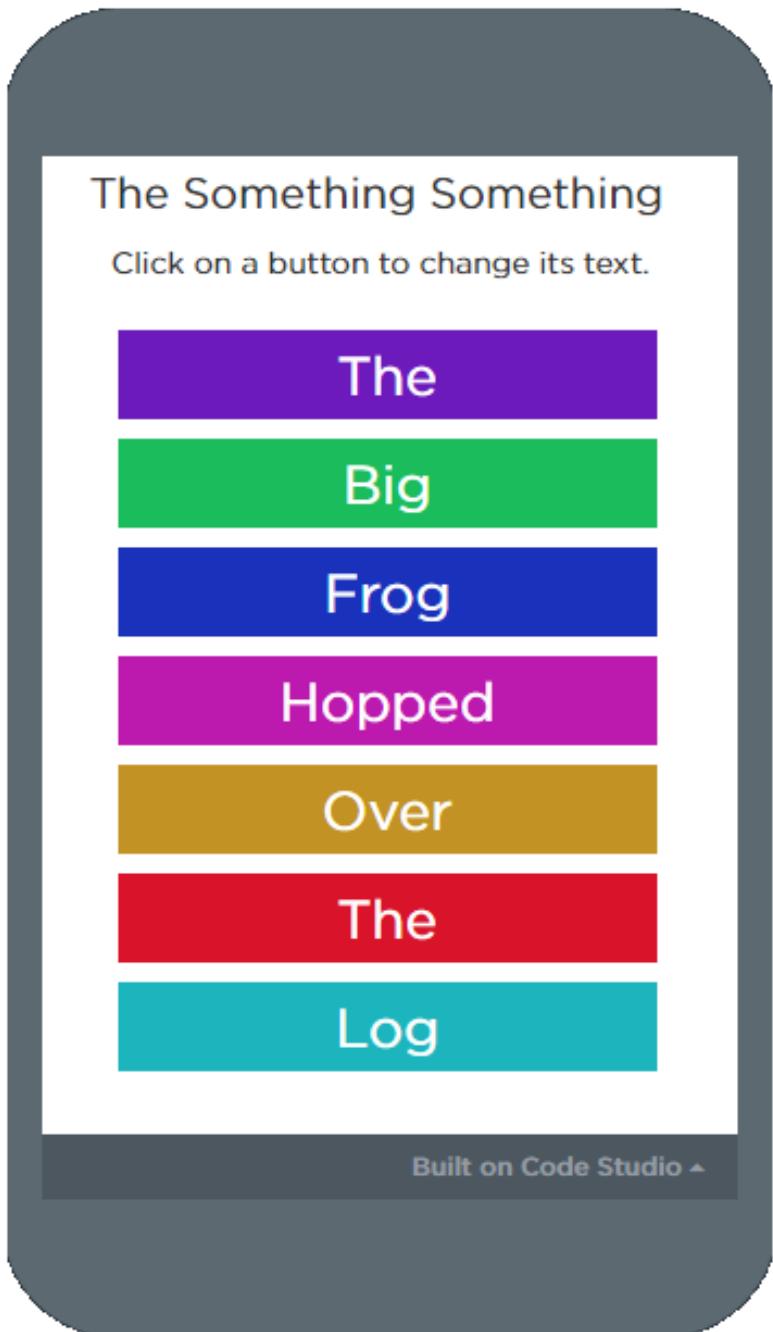
Text Area



Chart



Slider



How many
widgets are on
this screen?

Which widget
types are on
this screen?

How many
widget types
are on this
screen?

Widget Types:



Button



Text Input



Label



Dropdown



Radio Button



Checkbox



Image



Canvas



Screen



Text Area



Chart



Slider



How many
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Which widget
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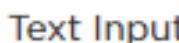
How many
widget types
are on this
screen?

Widget Types:

Button



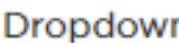
Button



abc



Label



Radio Button



Image



Canvas

Screen



Text Area

Chart



Slider

screen1

CE <- x^y $x!$

7 8 9 /

4 5 6 X

1 2 3 -

0 . = +

Run

PROPERTIES EVENTS

id
b8

text
8

width (px)
60

height (px)
55

x position (px)
95

y position (px)
180

text color
#ffffff

background color
#1abc9c

Each widget has properties that can be altered.

Identify a button properties on this screen.

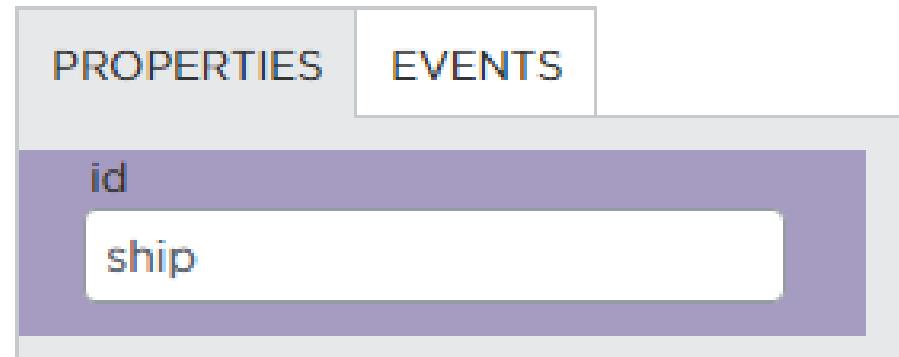
What widget type is the spaceship?

What is its widget id?



The image shows a Scratch workspace. At the top, a dropdown menu is set to "screen1". The stage background is a dark space scene with stars and a distant planet. A small blue and white spaceship is positioned in the center of the stage, enclosed within a red rectangular frame. Below the stage are three buttons: "< Left" and "Right >" in green, and a large yellow "Run" button with a play icon. On the right side of the interface, there is a "PROPERTIES" tab and an "EVENTS" tab. The "PROPERTIES" tab is active, displaying the following settings for the selected object:

- id**: ship
- width (px)**: 48
- height (px)**: 48
- x position (px)**: 135
- y position (px)**: 345
- image**: spaceship.png [Choose...](#)
- fit image**: fill



The id is an important property.

It is the name of the widget inside the code.

If the widget is a button OR it will change, it needs a meaningful id.

A meaningful id make the code easier to read.

```
onEvent("Right", "click", function(event) {
    var shipX = getXPosition("ship") + 15;
    var shipY = getYPosition("ship");
    setPosition("ship", shipX, shipY, 48, 48);
})
```

The image shows a Scratch script attached to a green 'onEvent' hat. The event is set to 'Right' key with a 'click' sensor. Inside the script, three blocks are present: a purple 'set position' block with 'ship' as the target, and two yellow 'get position' blocks that return the current x and y coordinates of the 'ship' sprite. The 'get position' blocks are highlighted with a red rectangle. The 'set position' block has its x parameter set to the sum of the current x position and 15, and its y parameter set to the current y position. The entire script is enclosed in a green brace at the bottom.

Not all ids are possible choices.

Which of the following are valid?

multiply

@school

Kitty_cat

2Price

First name

Last.name

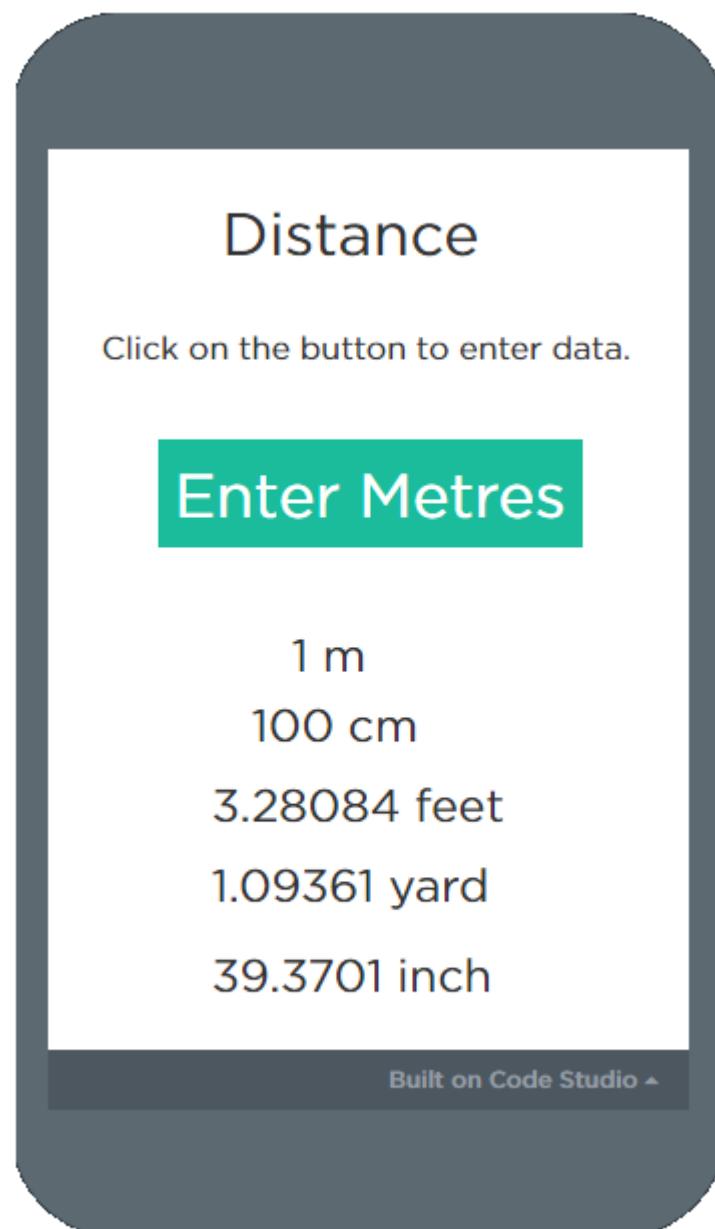
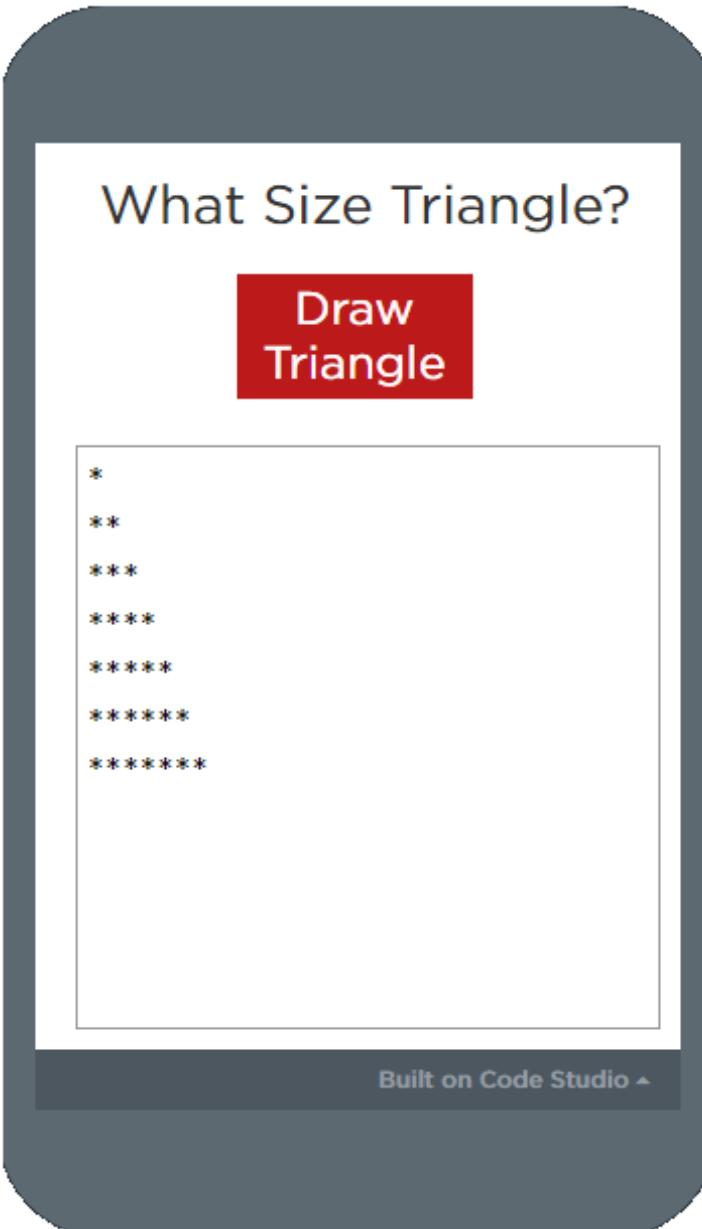
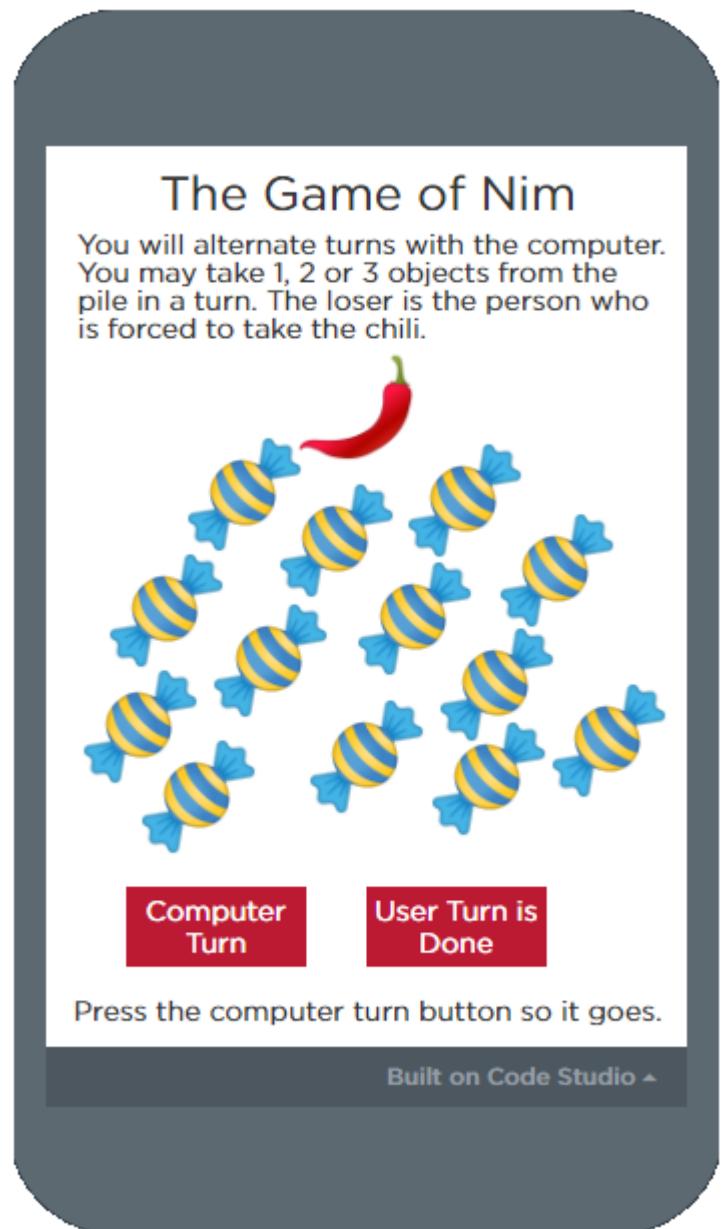
Price\$

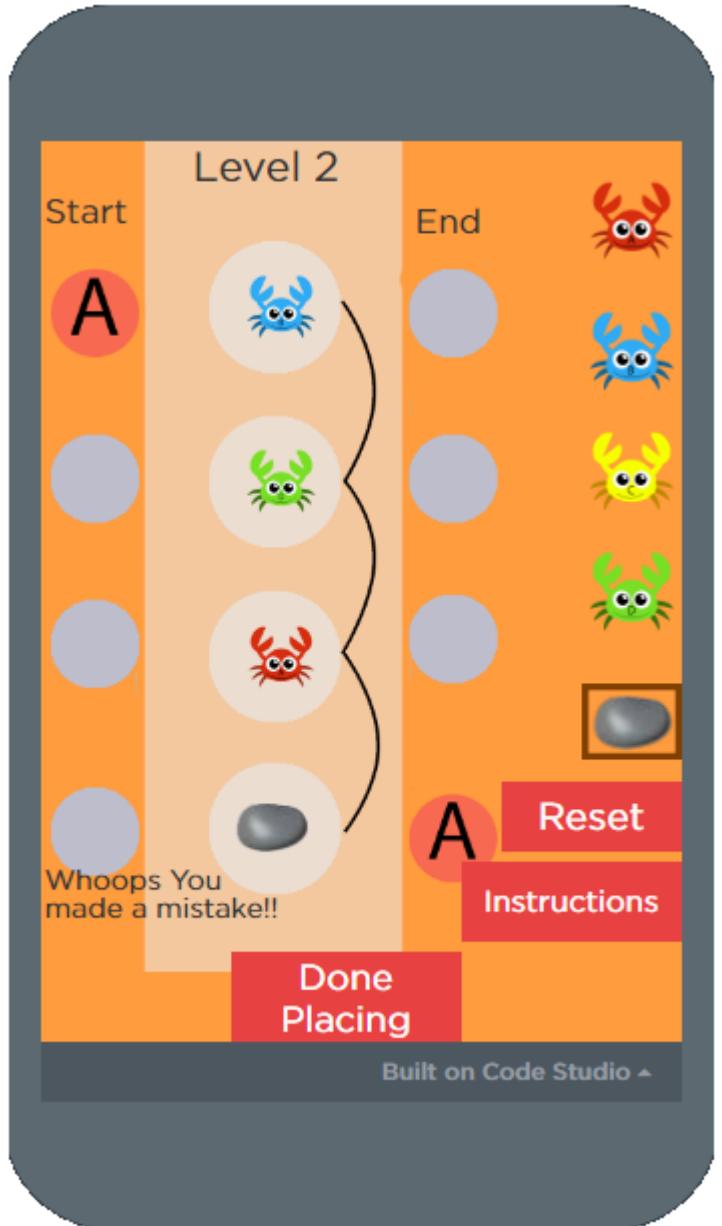
Price2

Id Naming Rules

1. Can't begin with a number
2. Can't have a space
3. Can't have odd characters. _ is NOT an odd character.
4. Should be meaningful

Some other AppLab Programs we will make:





Still more
AppLab Programs
we will make:

What
types of
widgets?

