

Unit 1 Coding Summary

AppLab

- Created by code.org
- Endorsers: Bill Gates (Microsoft), Mark Zuckerberg (Facebook), Drew Houston (Dropbox), Gabe Newell (Valve).

AppLab is made of 3 Pieces:

<p align="center">(a) Design Mode</p> <ul style="list-style-type: none"> • Set up the screen. • Give items their ID's • Choose the widgets you want. • Set up their properties the way you want. 	<p align="center">(b) Code Editor</p> <ul style="list-style-type: none"> • Drag blocks into place. • Set up the onEvent blocks. • Use mutators (sets) to make the screen respond. 	<p align="center">(c) Run Mode</p> <ul style="list-style-type: none"> • Test things out. • See if they work.

Program, id and variable naming rules

- No spaces in the names
- No special characters (a, *, %, \$)
- Don't use keywords (onEvent, setText)
- Don't start with a number (2more)
- Choose meaningful names

Widgets

<p>Button</p>	<pre>onEvent (▼ "id", ▼ "click", function(event) { // ... });</pre>	<p>The most important property is the id, as it tells us which button is which.</p> <p>The only button block we use is onEvent. That's where the code that responds to the button's click goes.</p>
<p>Label</p>	<pre>setText (▼ "id", "text");</pre> <pre>setText("id", "text");</pre>	<p>The most important property is the id, as it allows us to distinguish labels when we need to change their text.</p> <p>The only block we have used is setText. It changes the text. It is a mutator.</p>
<p>Image</p>	<pre>setImageURL (▼ "id", ▼ "kitty.png");</pre> <pre>setImageURL("id", "kitty.png");</pre>	<p>(id is still important, as above.)</p> <p>The mutator to change the picture is setImageURL.</p>
<p>Screen</p>	<pre>setScreen (▼ "screen1");</pre> <pre>setScreen("screen1");</pre>	<p>(id is still important, as above.)</p> <p>The mutator to change the screen is setScreen.</p>

Variables

- Are a space in RAM. They have a name and a type. They storage things until we need them again.
- Types are needed because they save RAM (numbers are smaller) and because each type has different functions (numbers can do math).
- There are two types: Text and Number.
- Numbers include: -2, 3.456, 23432.
- Text always has quotes around it. It includes phone numbers and postal codes.

All of these variables are text variables.





<pre>var name = "Bob"; var name = "Bob";</pre>	Makes a string variable for the first time. Has VAR in the front to show it is the first time.
<pre>name = "Sarah Soda"; name = "Sarah Soda";</pre>	Changes the value of the variable. No VAR in the front. This isn't the first time we use the variable.
<pre>var lastName = prompt("Enter your last name: "); var lastName = prompt("Enter your last name: ");</pre>	This line inputs text.
<pre>var greeting = "Welcome, "+name+". How are you?" var greeting = "Welcome, "+name+". How are you?"</pre>	This line uses the name variable to build up a complex output line.
<pre>setText(▼"id", greeting); setText("id", greeting);</pre>	This line outputs the greeting variable in a label (using a mutator). Notice that greeting doesn't have quotes around it. That means it is a variable.

All of these variables are number variables.

<pre>var price = 34; var price = 34;</pre>	Makes a num variable for the first time. Has VAR in the front to show it is the first time.
<pre>price = 76; price = 76;</pre>	Changes the value of the variable. No VAR in the front. This isn't the first time we use the variable.
<pre>var amount = promptNum("How many apples do you want? "); var amount = promptNum("How many apples do you want? ");</pre>	This line inputs numbers.
	These lines do math with variables.
<pre>var output = "The price is \$" + price; var output = "The price is \$" + price;</pre>	This line uses the price variable to build up a complex output line.
<pre>setText(▼"id", output); setText("id", output);</pre>	This line outputs the price variable in a label (using a mutator). Notice that output doesn't have quotes around it. That means it is a variable.

Math Blocks

- They are used for Processing.

			
Addition (for text and numbers)	Subtraction	Multiplication	Division

Input-Processing-Output

<p>Input</p> <ul style="list-style-type: none"> • Have prompts in their block 	<pre>var amount = promptNum("How many apples do you want? "); var amount = promptNum("How many apples do you want? "); var lastName = prompt("Enter your last name: "); var lastname = prompt ("Enter your last name: ");</pre>
<p>Processing</p> <ul style="list-style-type: none"> • Have math (+-/*) in their block 	<pre>var output = "The price is \$" + price; var output = "The price is \$" + price var area = 3.14159 * (radius * radius); var area = 3.14.159 * radius * radius;</pre>
<p>Output</p> <ul style="list-style-type: none"> • Change a widget in their block • Mutators 	<pre>setText(▼"id", "text"); setText("id", "text"); setScreen(▼"screen1"); setScreen("screen1"); setText(▼"id", output); setText("id", output); setImageUrl(▼"id", ▼"kitty.png"); setImageUrl("id", "kitty.png"); setText(▼"answer", "The area is " + area); setText("answer", "The area is " + area);</pre>