

Introduction to AppInventor

App Inventor

- Visual blocks language for programming mobile apps.
- Android apps.

What is AppInventor?

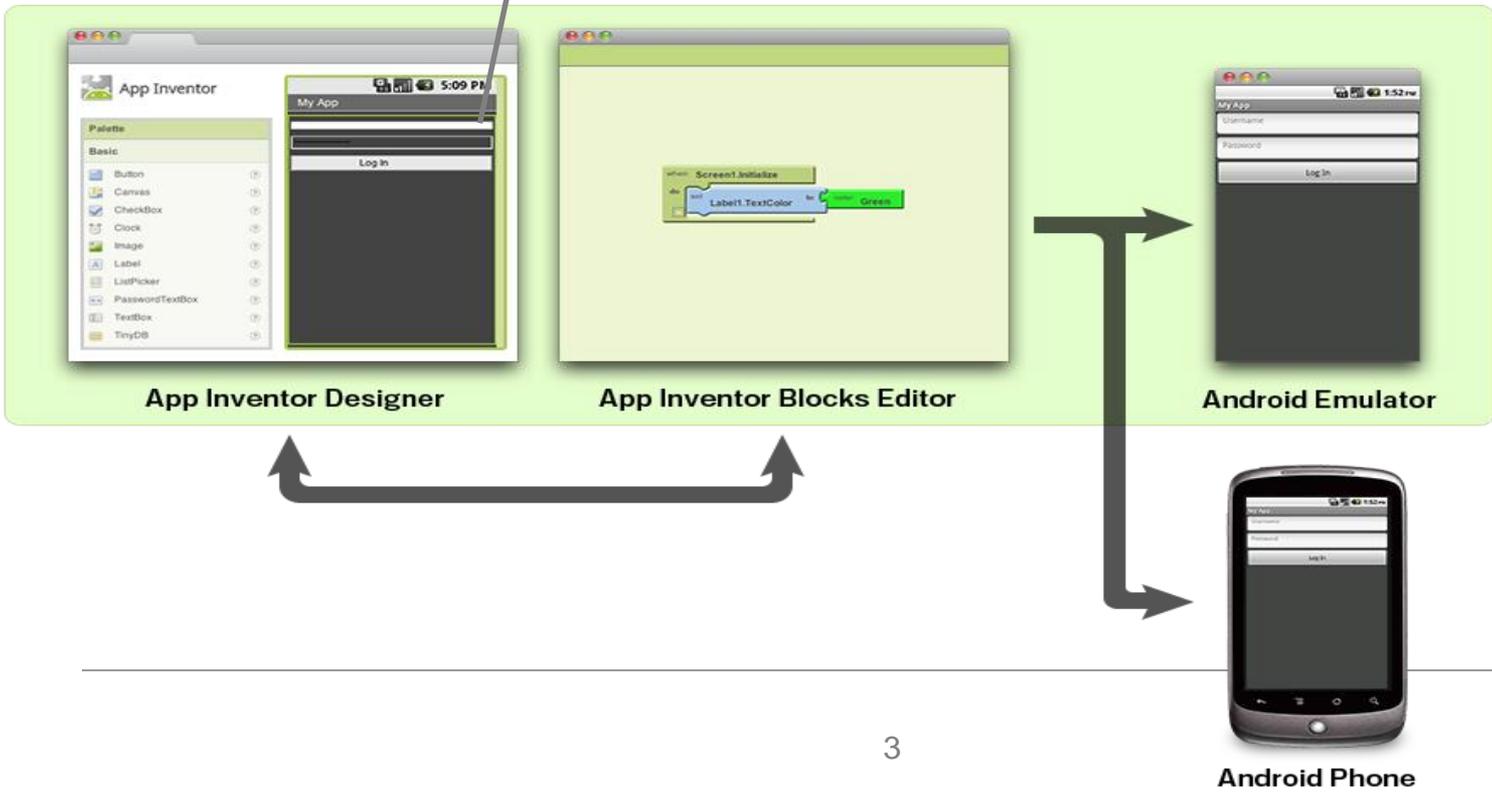
The App Inventor servers store your work and help you keep track of your projects.



Google App Inventor Servers



•App Inventor lets you develop applications for Android phones using a web browser and either a connected phone or emulator.



What is it?

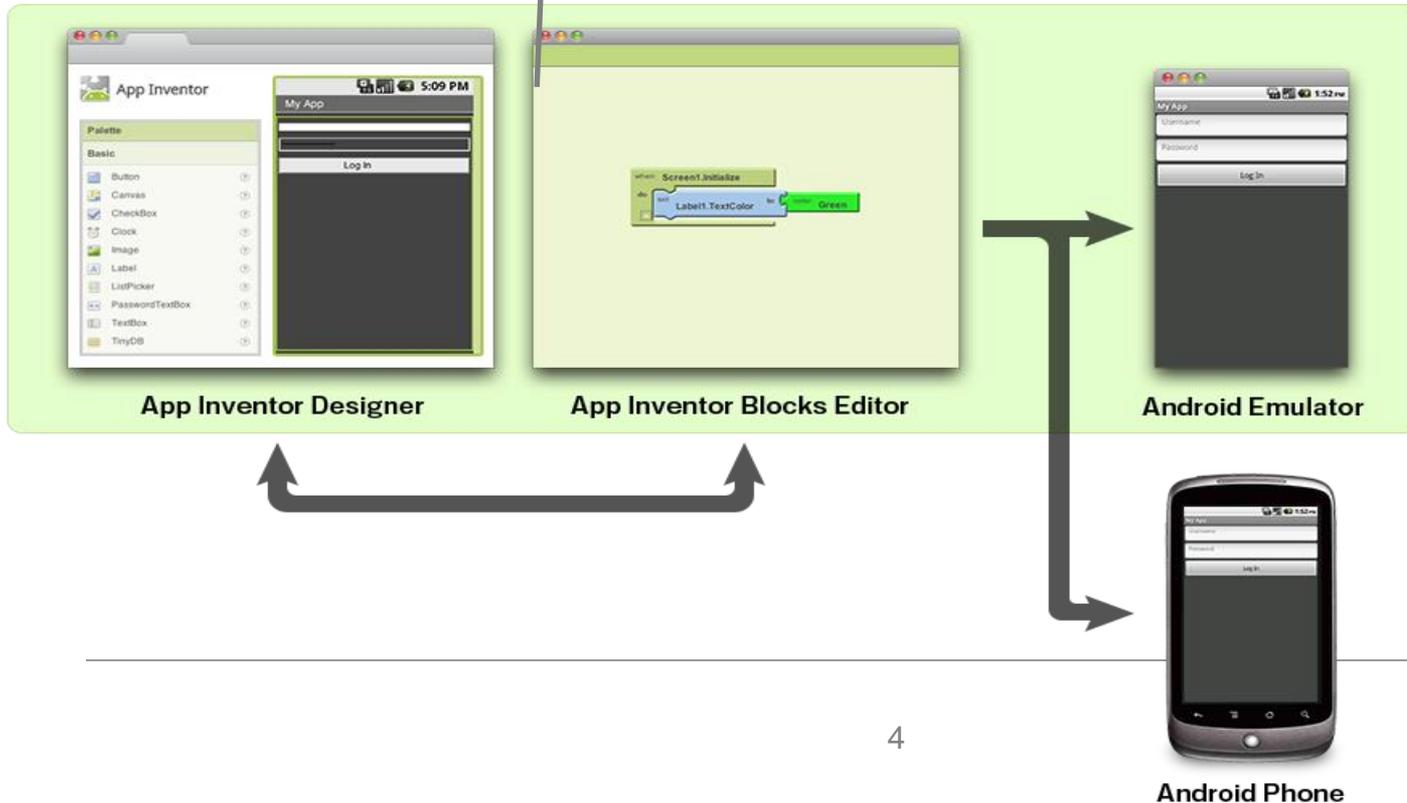


Google App Inventor Servers



You build apps by working with:

- The *App Inventor Designer*, where you select the components for your app.
- The *App Inventor Blocks Editor*, where you assemble program blocks that specify how the components should behave.



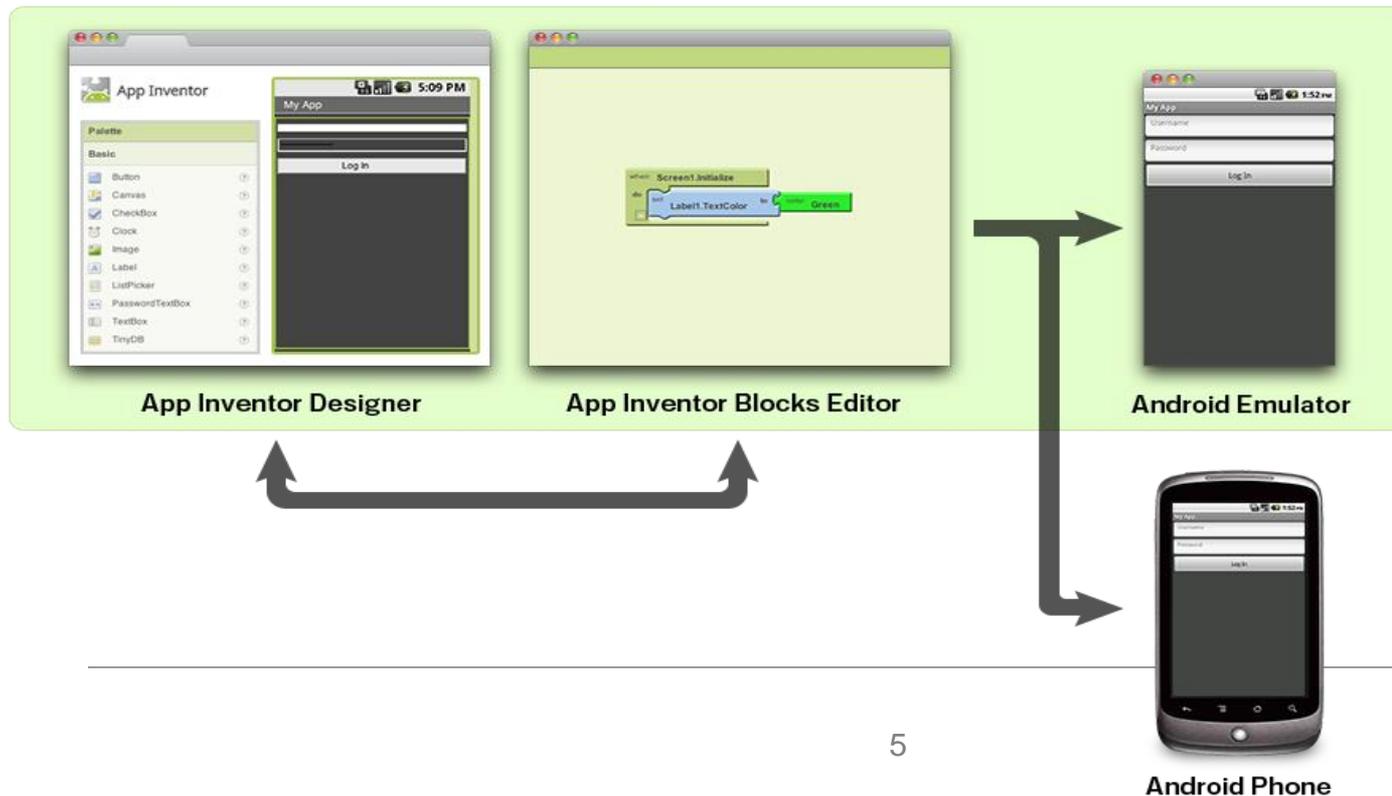
What is it?



Google App Inventor Servers



- Your app appears on the phone step-by-step as you add pieces to it, so you can test your work as you build.
- When you're done, you can package your app and produce a stand-alone application to install.
- If you don't have an Android phone, you can build your apps using the *Android emulator*, software that runs on your computer and behaves just like the phone.

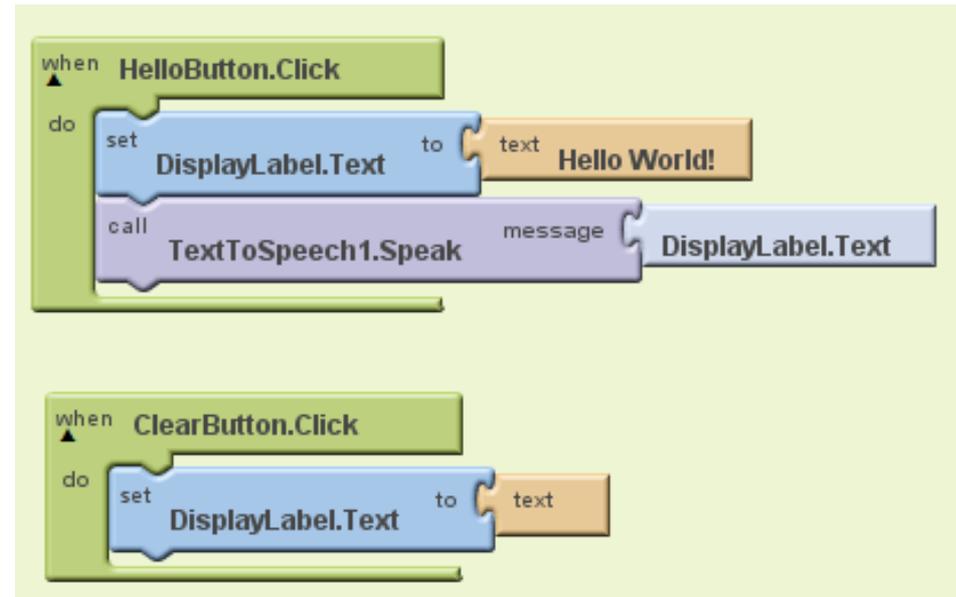


Java vs AppInventor

Java Code

```
public class HelloWorldApp {  
    public static void main(String[] args) {  
        System.out.println("Hello World!");  
    }  
}
```

AppInventor



Can you guess what these blocks do?



Features of App Inventor

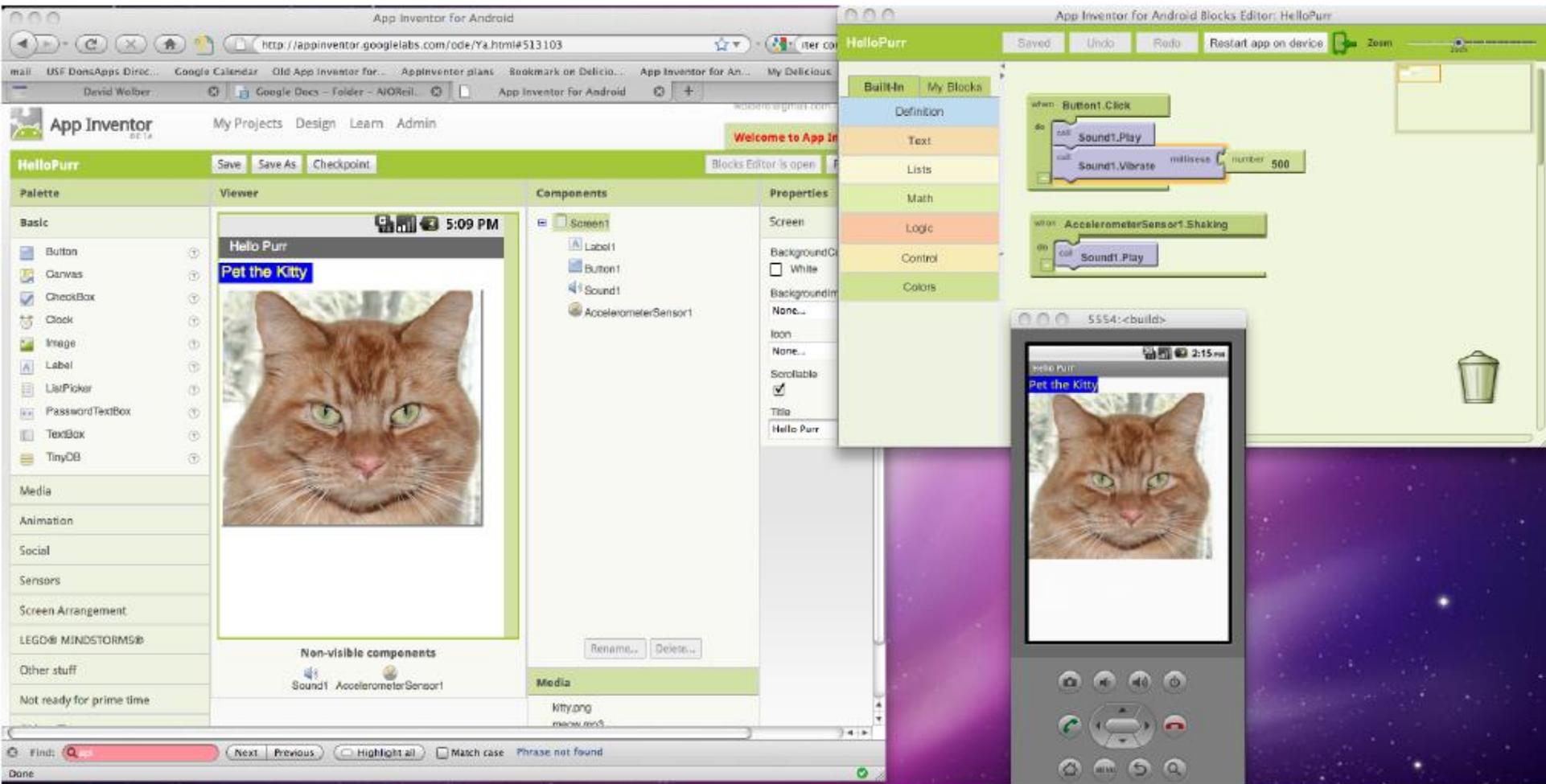
- **No typing** of code, no syntax errors.
- **Events** at first level
- Like putting together a **puzzle** (only some pieces fit)
- **High-level**-- the Google team has put a lot of work in it
- **Concrete**, less abstract

No silver bullet

- Can't build everything
 - user interface
 - not all phone features available

- Programming is still hard work!

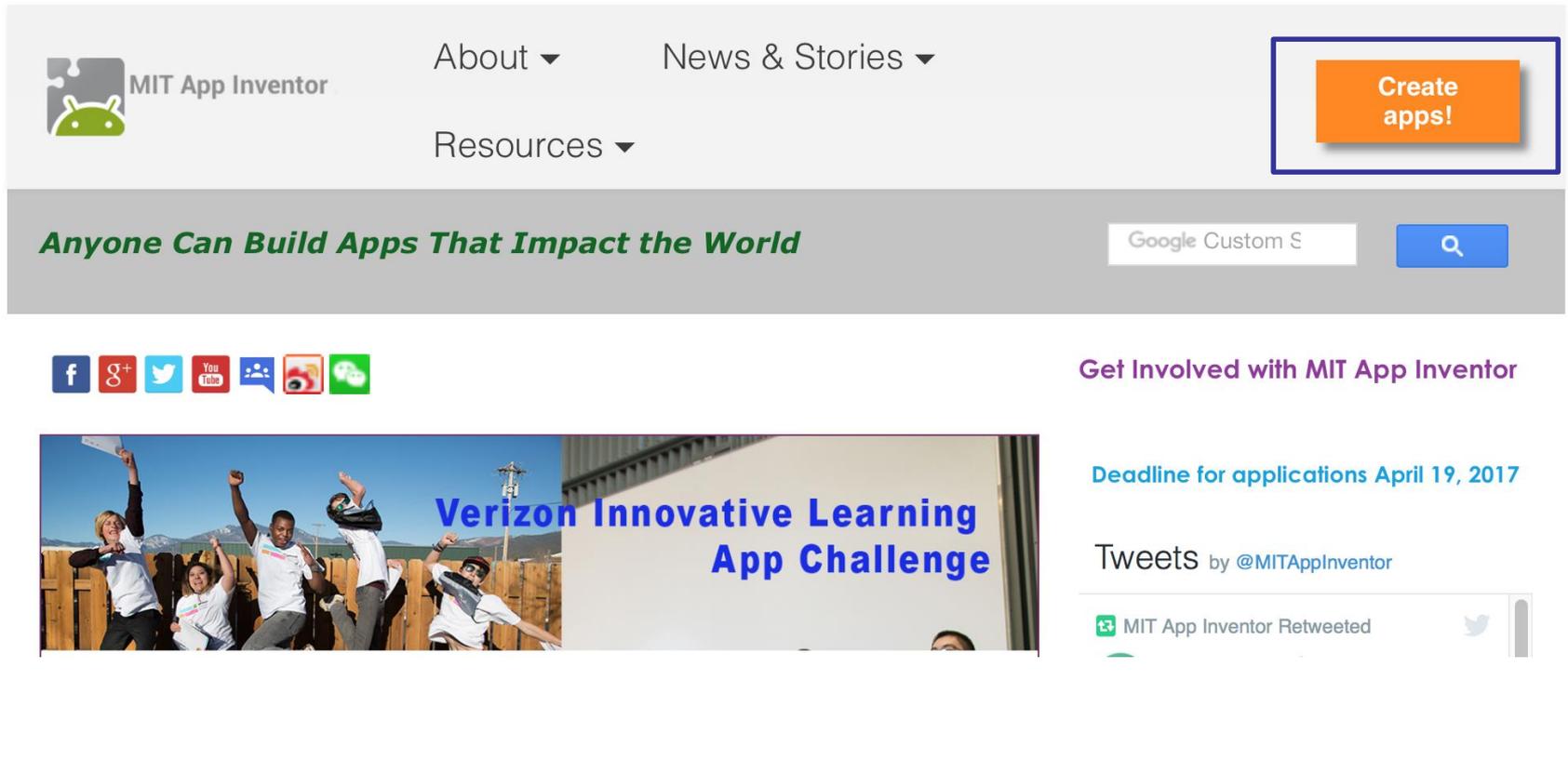
The component Designer, Blocks Editor and Emulator



Using AppInventor

Before you try to create an app

<http://appinventor.mit.edu/explore/>

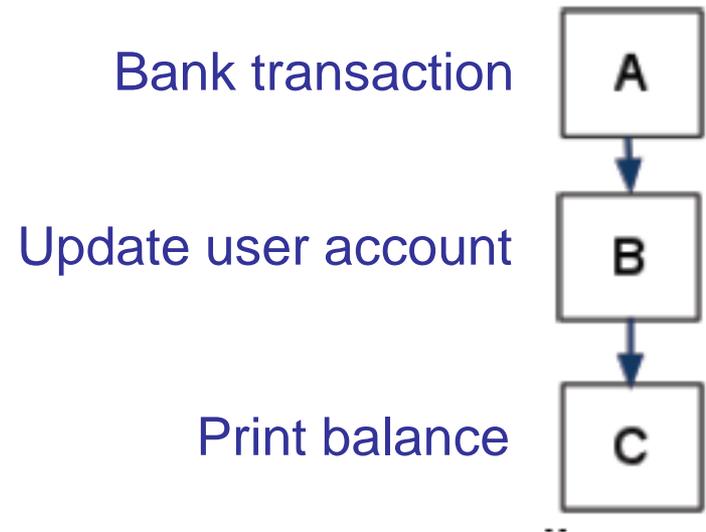


The screenshot shows the MIT App Inventor website homepage. At the top left is the MIT App Inventor logo, which includes an Android robot icon and the text "MIT App Inventor". To the right of the logo are navigation links: "About", "News & Stories", and "Resources", each with a downward arrow. On the far right of the top navigation bar is a prominent orange button with the text "Create apps!". Below the navigation bar is a grey banner with the slogan "Anyone Can Build Apps That Impact the World" in green text. To the right of the slogan is a search bar with the text "Google Custom S" and a blue search button. Below the banner is a row of social media icons for Facebook, Google+, Twitter, YouTube, Messenger, and WhatsApp. On the right side of the page, there is a section titled "Get Involved with MIT App Inventor" in purple text. Below this title is a blue link that says "Deadline for applications April 19, 2017". Underneath is a section for tweets, starting with "Tweets by @MITAppInventor". The first tweet shown is from "MIT App Inventor Retweeted" and includes a small Twitter bird icon.

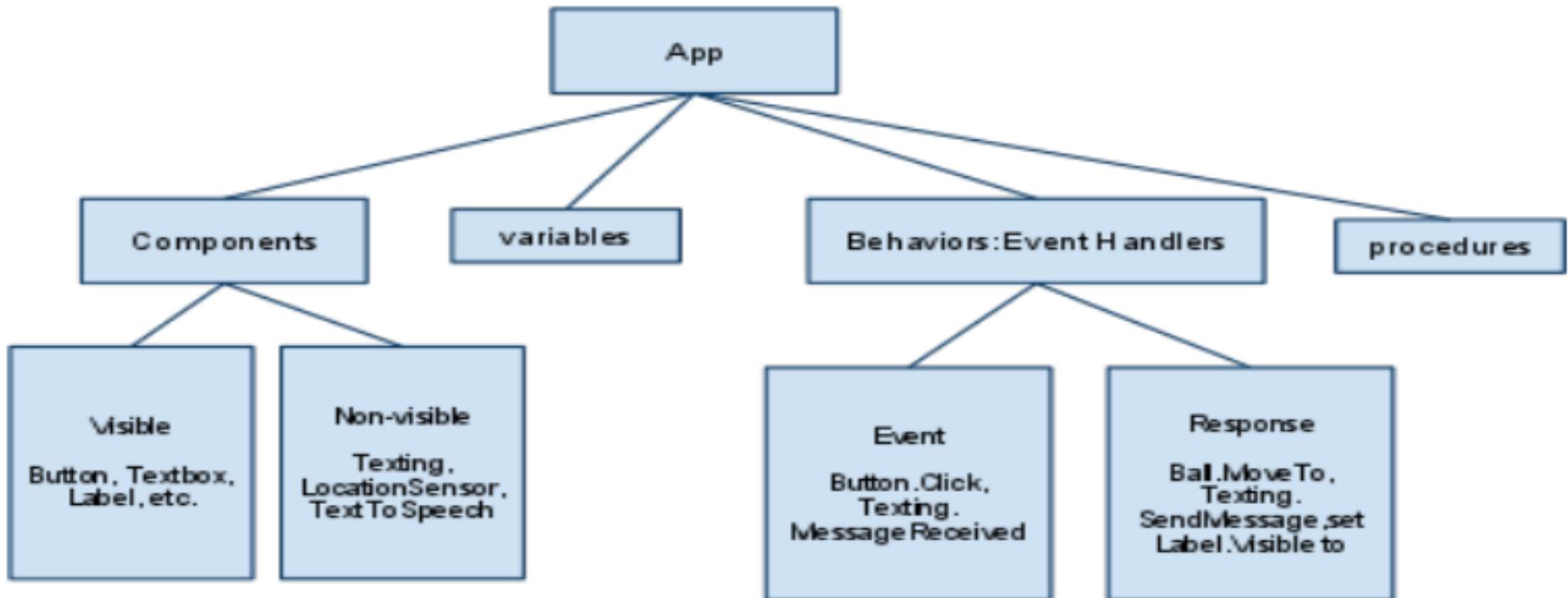
Components

What is an App?

- From the user perspective?
- From the programmer perspective?
 - It is like recipe

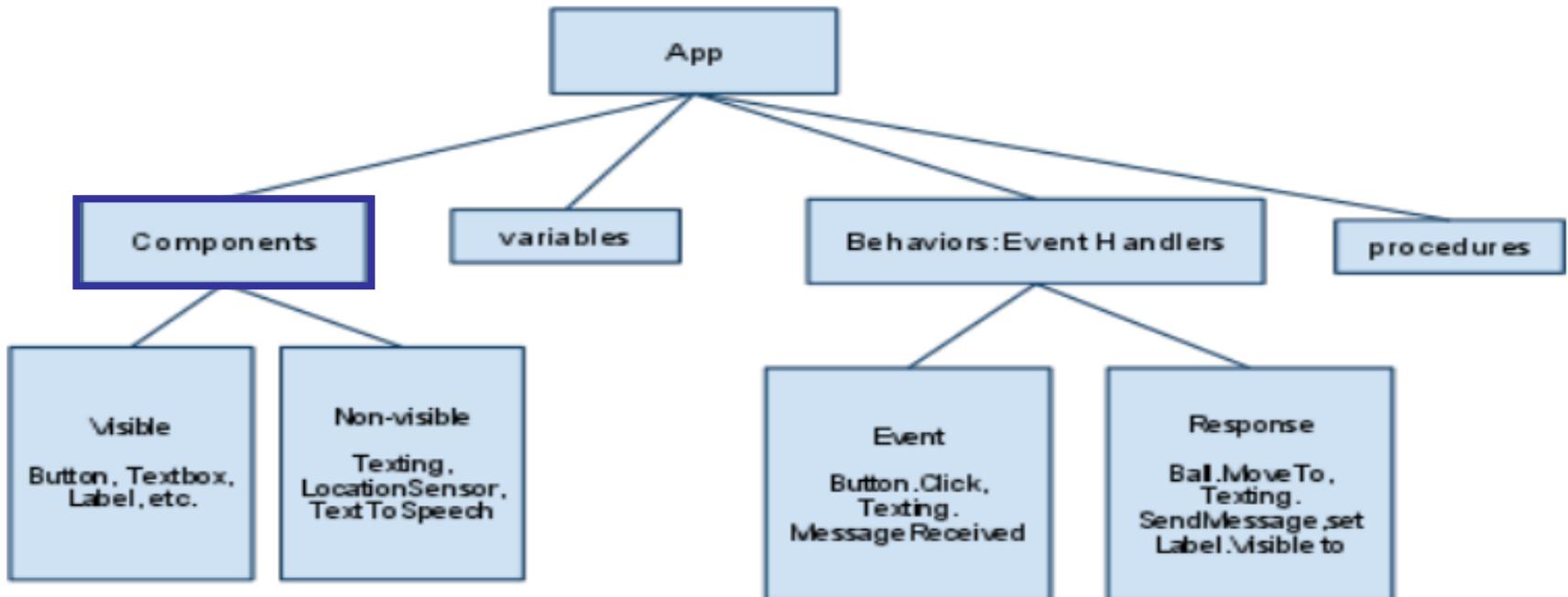


App architecture



Components

- Components are objects or elements used to create an application.



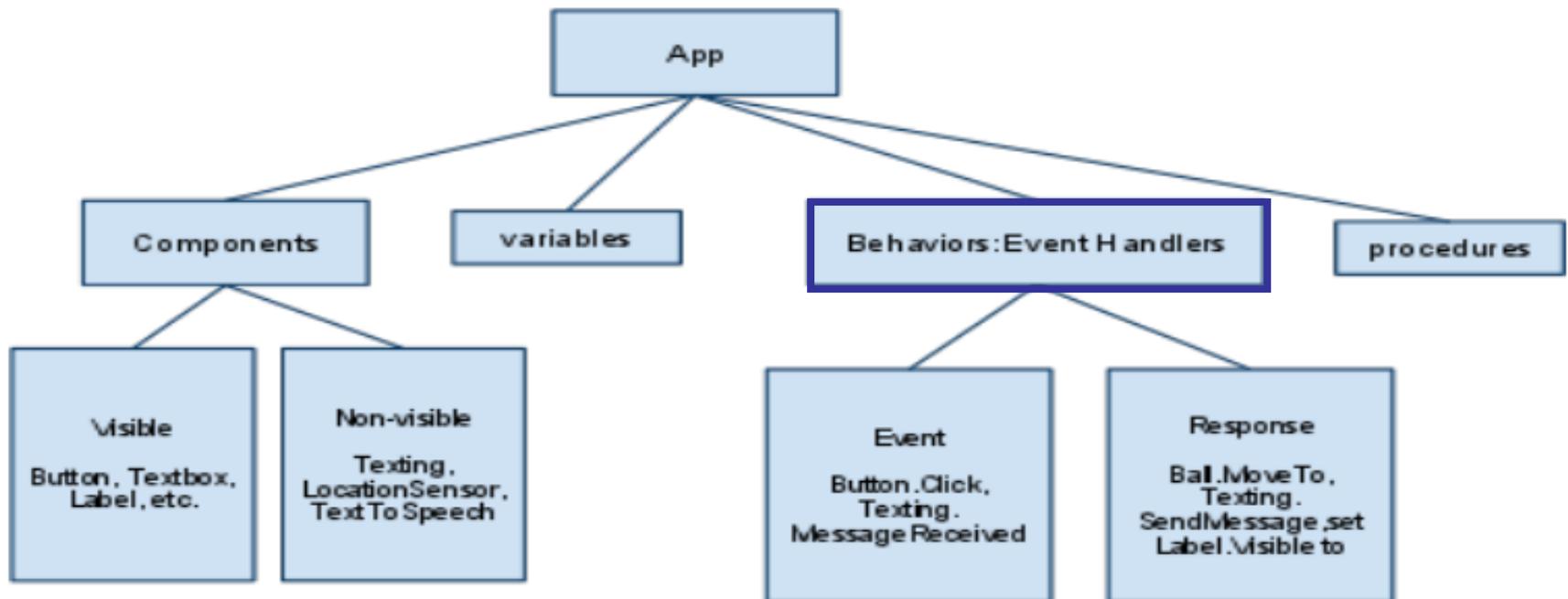
Events

- In computer programming, **event-driven programming or event-based programming** is a programming paradigm in which the flow of the program is determined by events—i.e., sensor outputs or user actions (mouse clicks, key presses) or messages from other programs or threads.

Event Type	Example
User-initiated event	when the user clicks button1 do...
Initialization event	when the app launches do...
Timer events	when 20 milliseconds passes do...
External events	when the phone receives a text do...

Event handler

- The functions performed in response to an event. When an event happens, the corresponding event handler is invoked.



Behaviors

- A behavior defines how the app should respond to the events, both user initiated (e.g., button click) and external (e.g., an SMS text arrives to the phone).

