Introduction to AppInventor

App Inventor

- Visual blocks language for programming mobile apps.

- Android apps.

What is AppInventor?
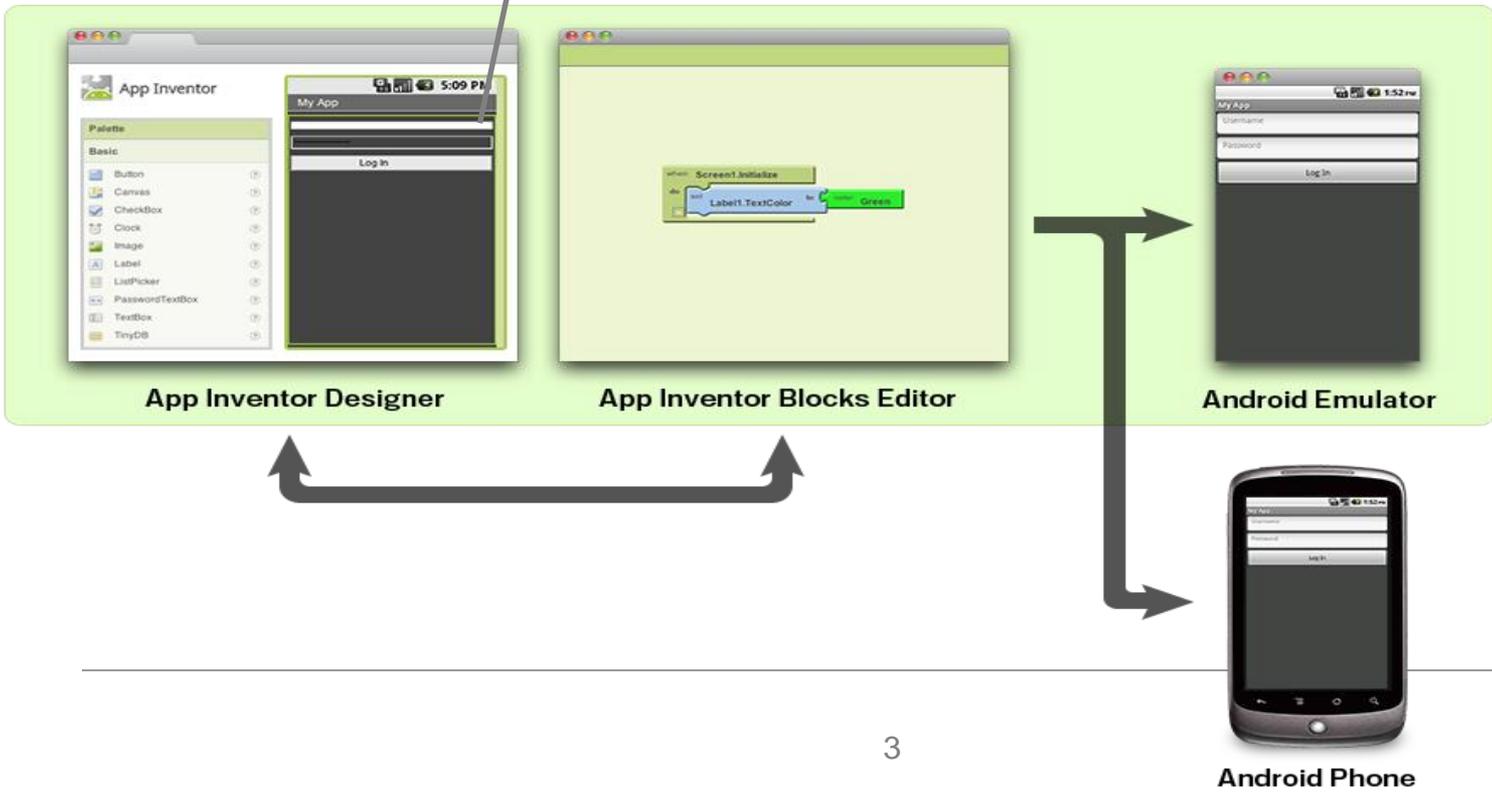

Google App Inventor Servers

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

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

App Inventor Designer

App Inventor Blocks Editor

Android Emulator

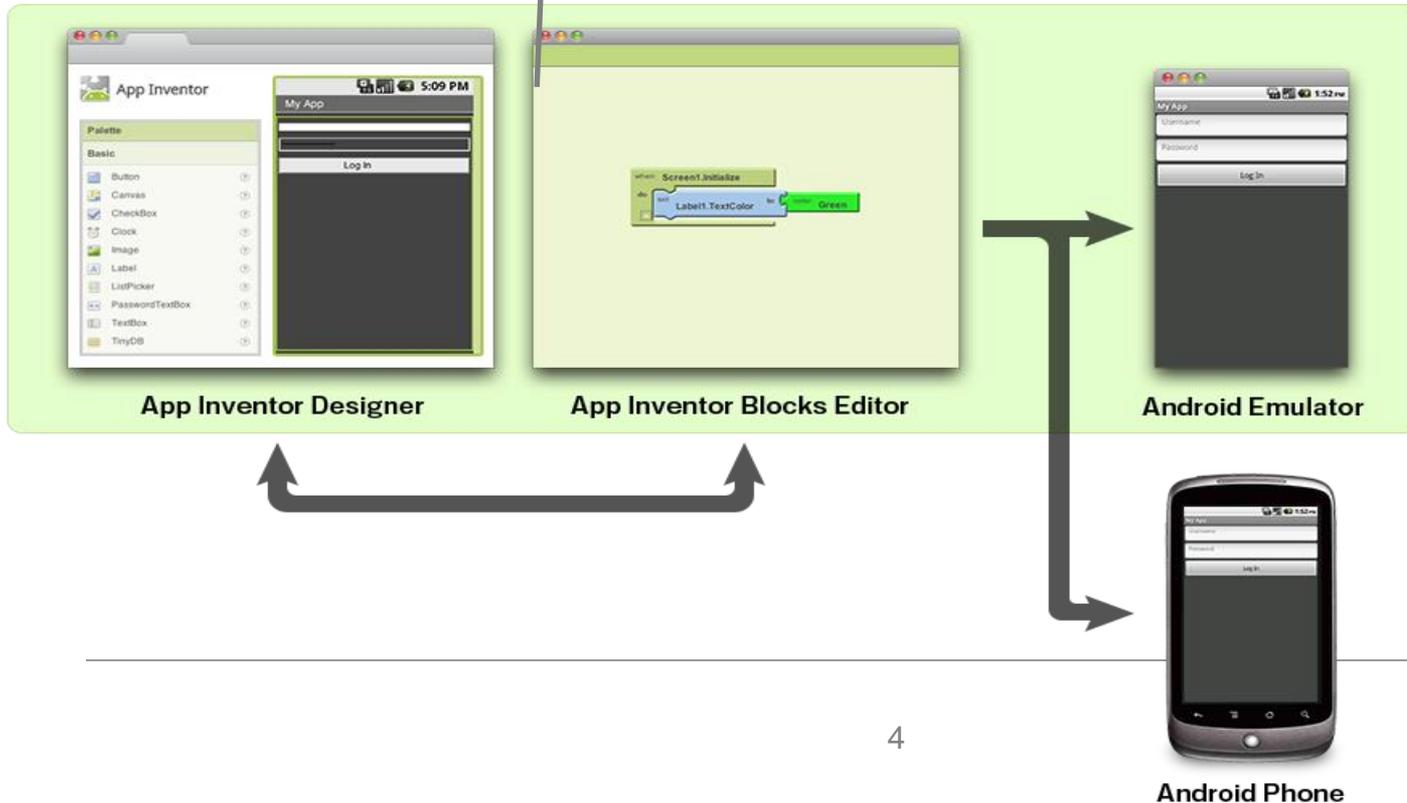Android Phone

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.

App Inventor Designer

App Inventor Blocks Editor

Android Emulator

Android Phone

4

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.
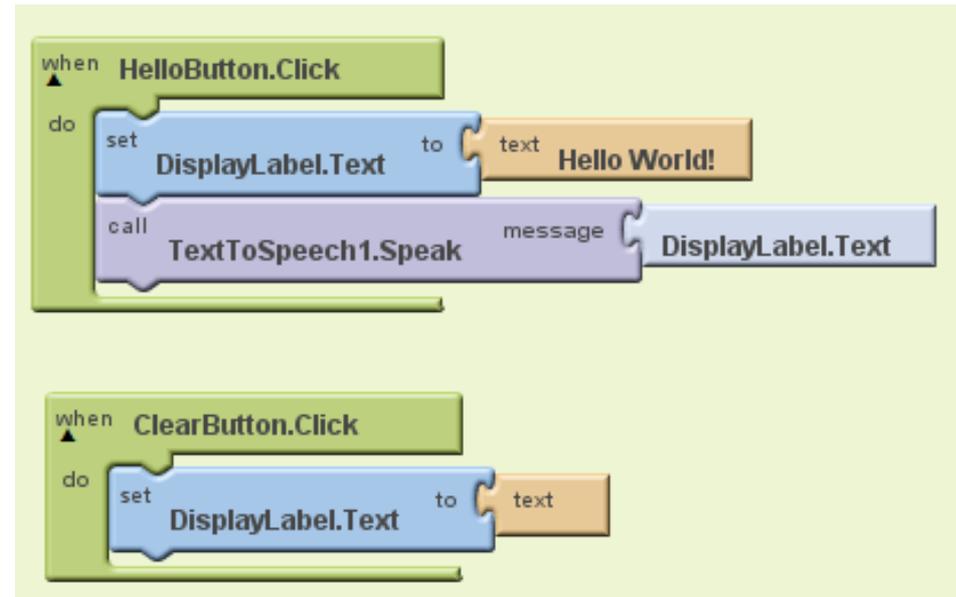

App Inventor Designer

App Inventor Blocks Editor

Android Emulator

Android Phone
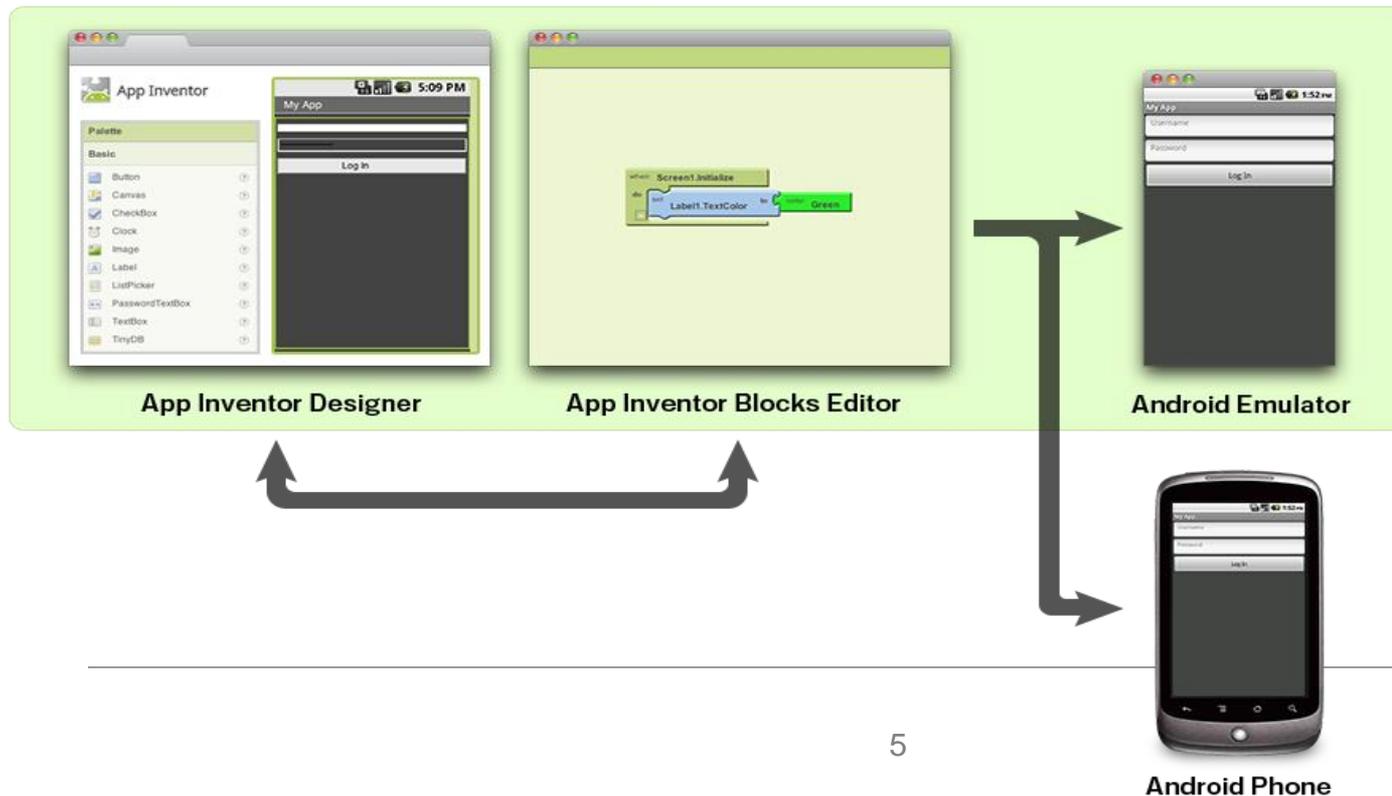
Java vs AppInventor

Java Code

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

AppInventor

Can you guess what these blocks do?
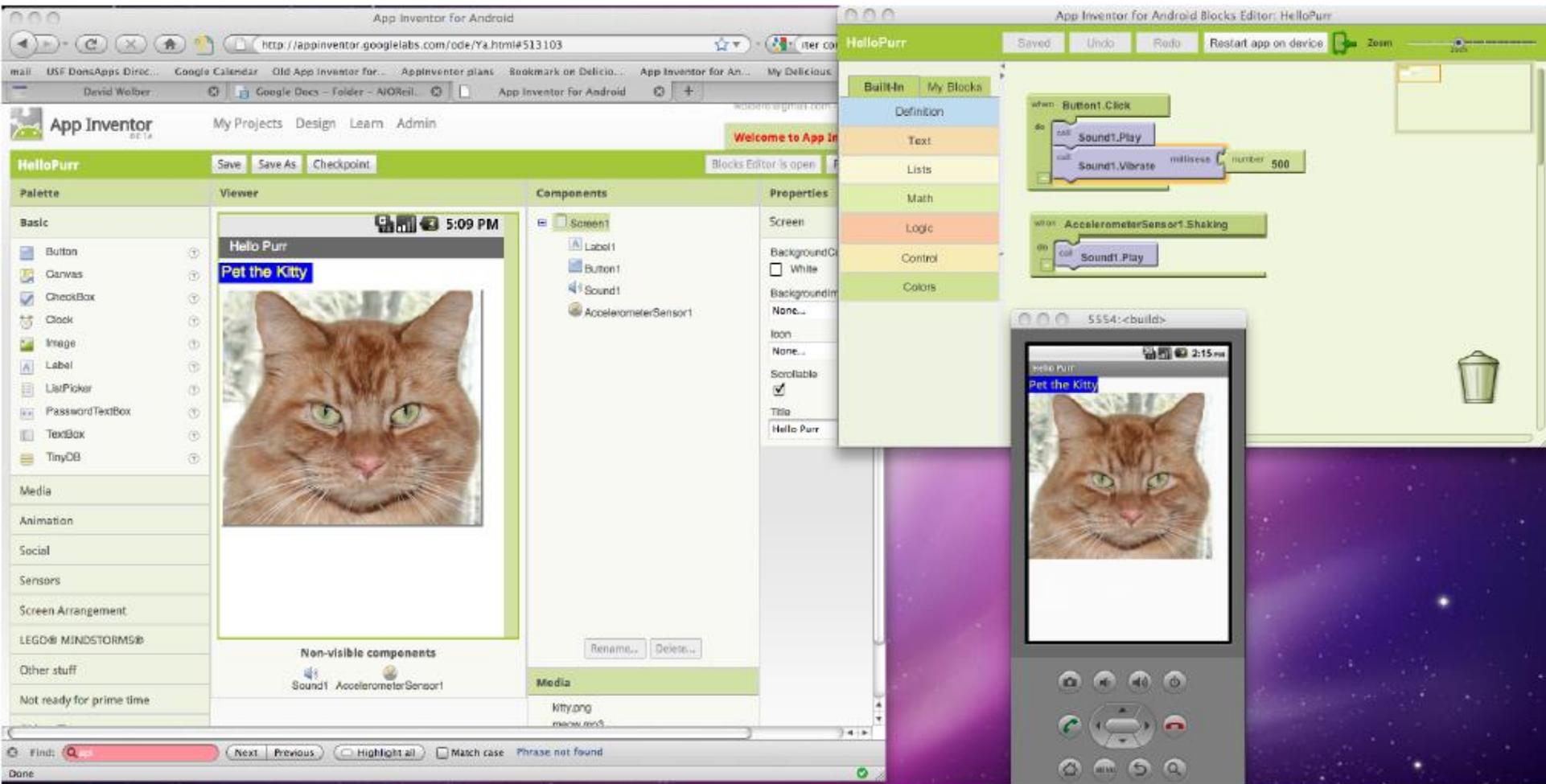
Features of App Inventor

- **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
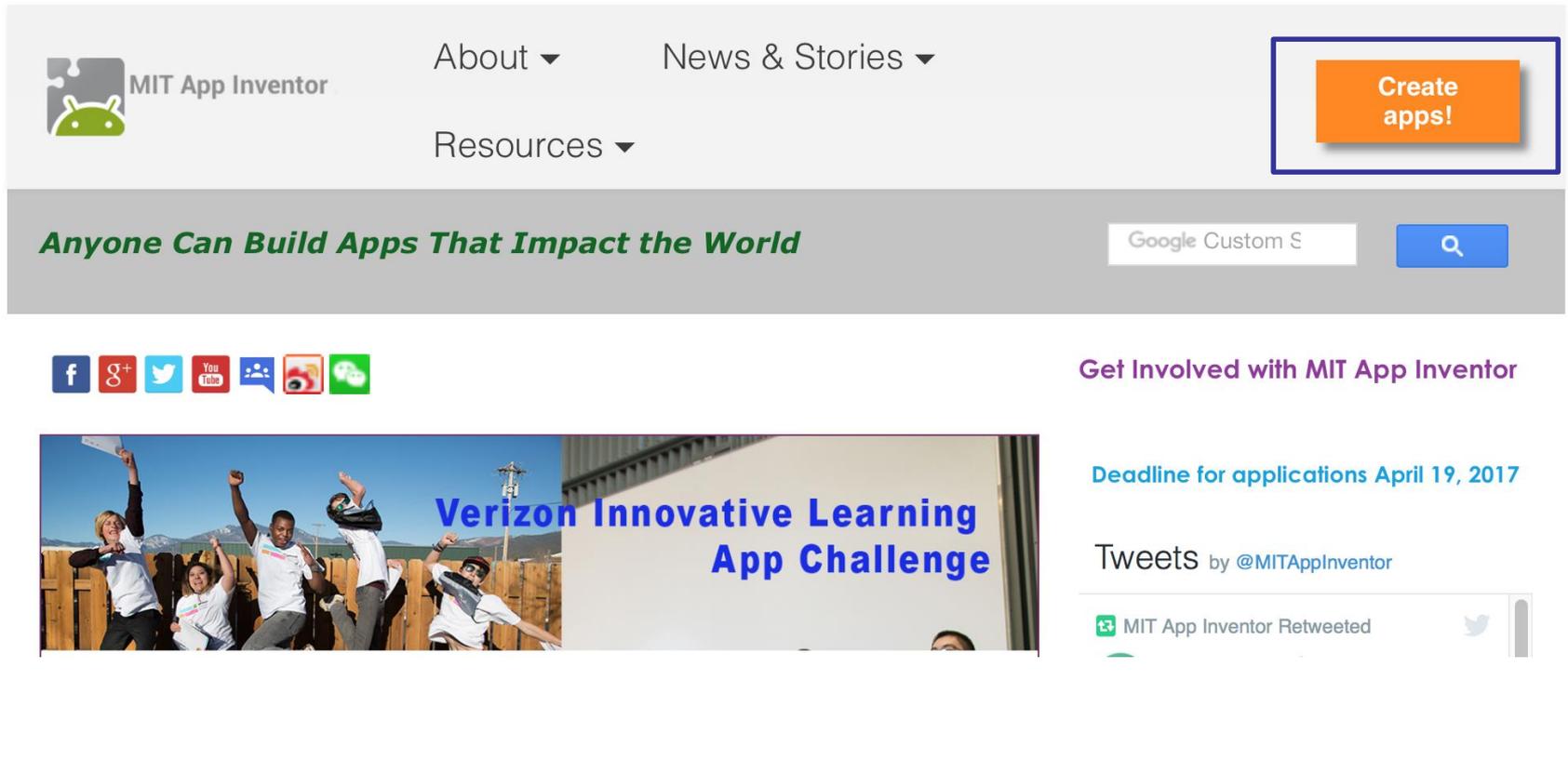 - not all phone features available

- Programming is still hard work!

The component Designer, Blocks Editor and Emulator
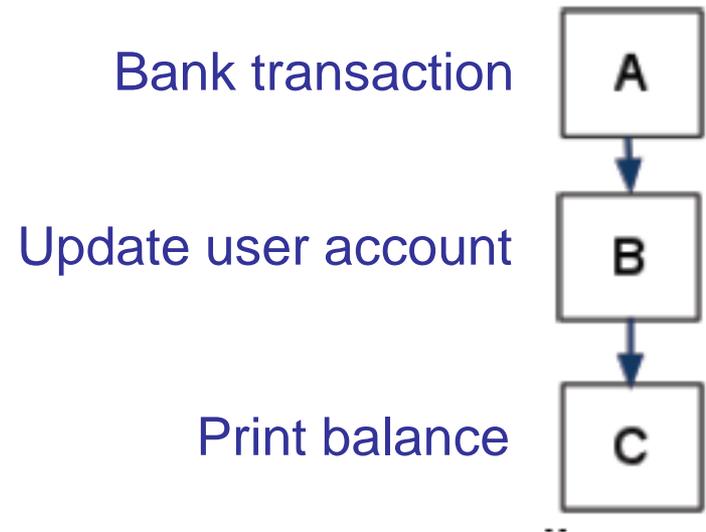
Using AppInventor

Before you try to create an app

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

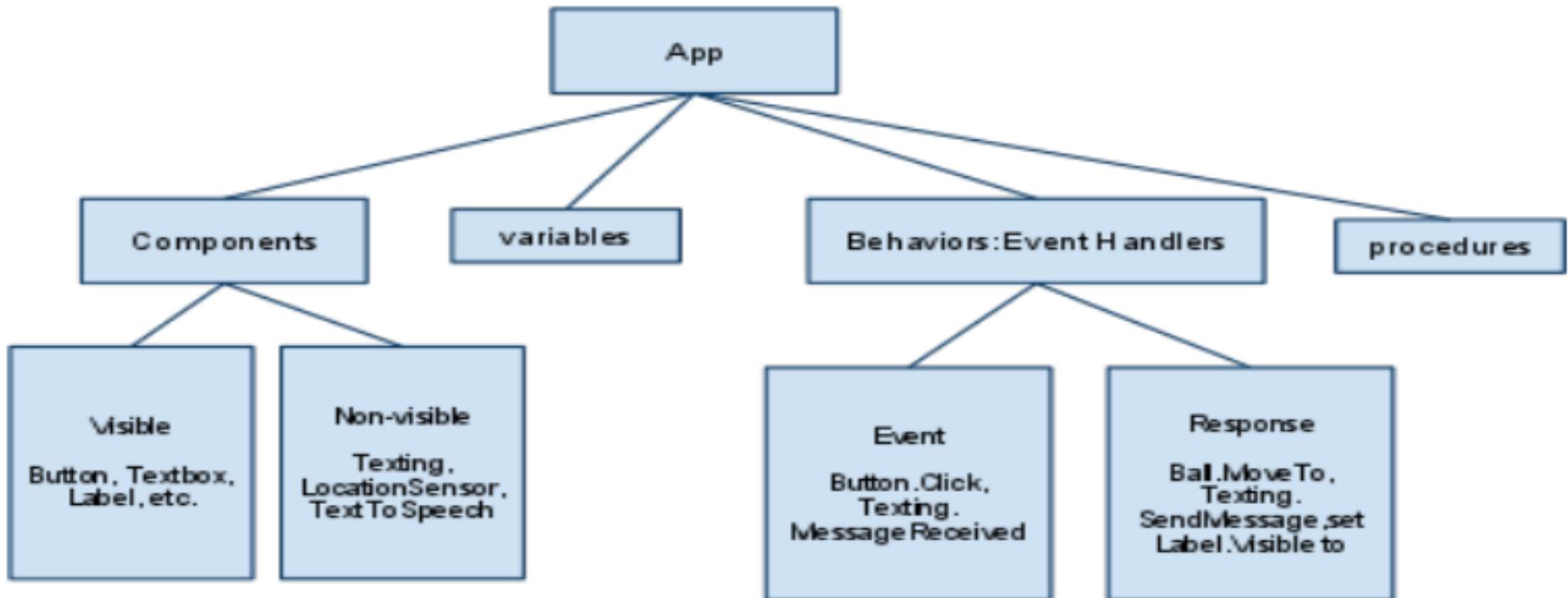# Components

What is an App?

- From the user perspective?

- From the programmer perspective?
  - It is like recipe

Bank transaction $\quad$ A

Update user account $\quad$ B
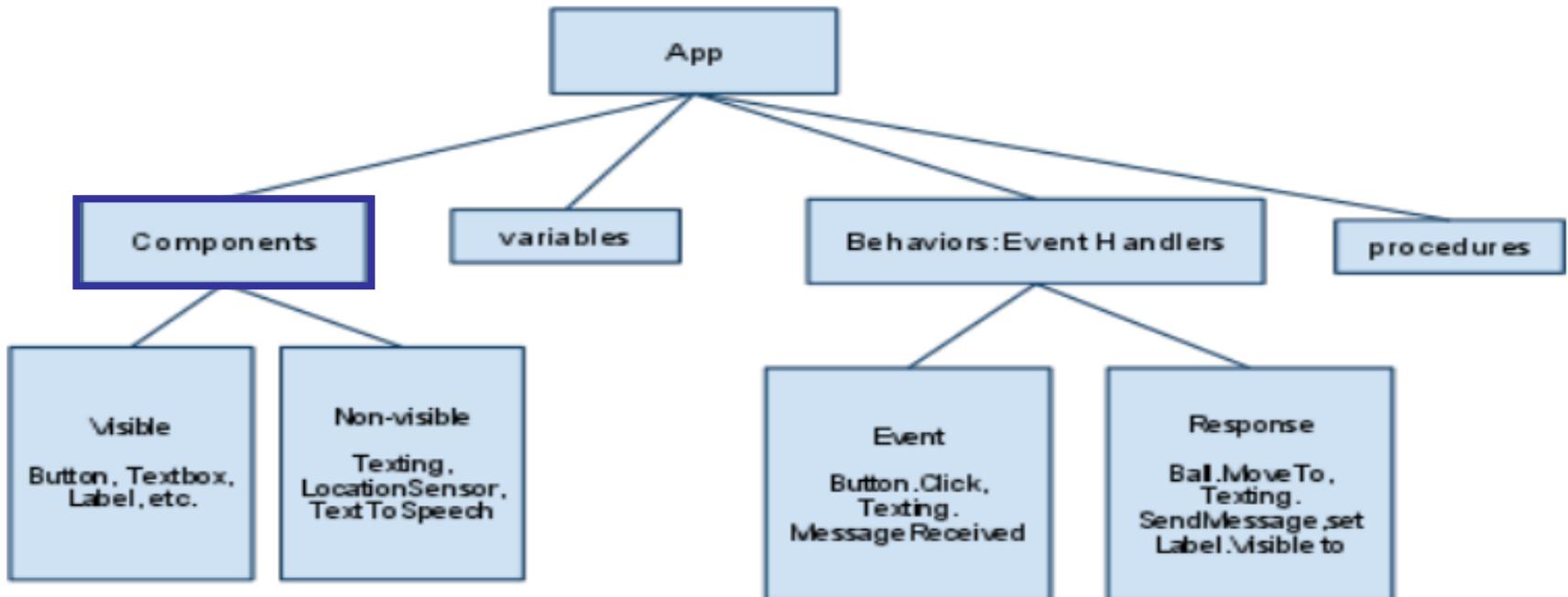
Print balance $\quad$ C

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.
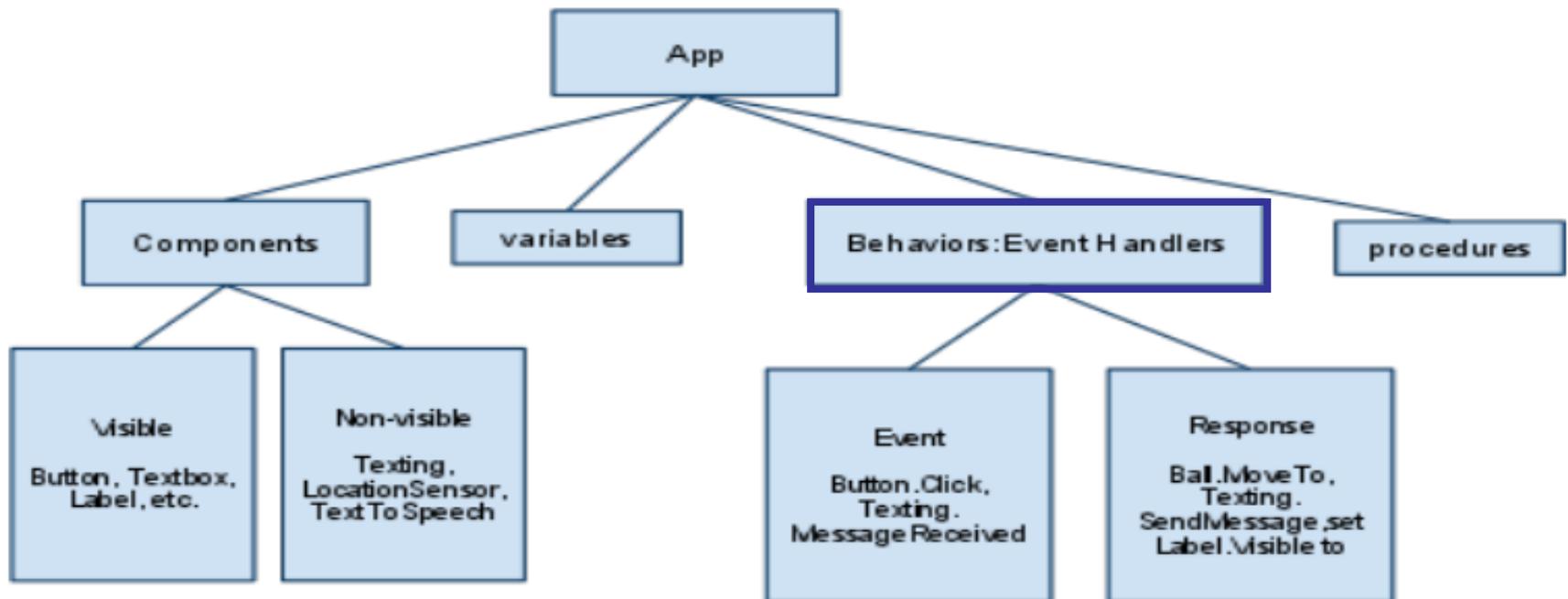
Behaviors

- 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).