# Unit 1

*Description of Material:*

Welcome to the first unit of a 6-week online App Inventor and Design Course. In this unit mentors will learn: what App Inventor is and what you can do with it, how to set it up and connect on your machine & device(s), how to build and edit an app, and what Events based programming is. This unit will include video, tutorials, and readings.

*Learning Objectives:*
- identify some of the types of apps available in the Android Marketplace & what features these apps have
- label the major parts of an App Inventor program
- understand how the components and blocks work and interact
- understand the difference between download a source and package an apk and be able to do both
- Give examples of events and a definition of event-based programming

*Let's Begin!*

We first recommend that you all read through the [Course Syllabus](). In there, you'll find a brief summary of the topics that will be covered, details on how to get help, and about how much time to spend per unit.

After reading the Course Syllabus think about the following:

- What are your goals for this course?
- Identify some of the types of apps available & what features these apps have.

We'd also like you to join the App Inventor Forum. The Forum is the best place to learn and share information about using App Inventor and using App Inventor with students. It is also a great place to find answers to bugs or problems you may run into while using with App Inventor. To join the Forum, follow [this link to the App Inventor Forum](). Once you've joined, you can adjust your membership/email settings by clicking the link called Membership and email settings found at the top. If you look along the left, you'll see a list of sub-topics for this forum. One of them is App Inventor for Educators. This thread holds ideas, problems, and suggestions educators have run into or thought of while teaching App Inventor to students

*Setting Up!*

Setting up to App Inventor is super easy. If you've used App Inventor before, you may have used App Inventor Classic. For this course, we are using App Inventor 2: easier to use and better than before. To start the process of setting up App Inventor for your computer, follow the instructions available on the App Inventor website [here]().

## *Making Magic*

App Inventor Setup & Magic Trick Tutorial

[Link to Youtube Video](#)

[Link to Vimeo Video](#)

Once you're all set up. Let's start building an app. Your first app will be a magic trick.
- [Magic Trick Instructions (PDF)](#)
- [Magic Trick Part 2 Instructions (PDF)](#) [*optional*]

After building the app, read through and complete the [associated handout (PDF)](#) ([or in Word/.docx format](#)) suggested for students who complete this app. Next, go back to your app and make a modification to it. Change something about the app by adding different blocks by adding new sounds, shaking the phone, using TextToSpeech or SpeechRecognizer or something of your own invention.

## *Programming Concepts -- Events*

App Inventor is often called events-based programming. What this means is that your app runs and functions based on reactions to events. When you click a button, start the app, shake the phone, swipe the phone, enter into a textbox. These are all events. Apps and App Inventor are event driven which means that events need to happen to cause something else to happen. Shaking the phone will cause the phone to play a sound and getting a text message will cause the phone to vibrate. Events cause or drive actions.

App Architecture includes events but also includes components, event handlers, event types, behavior, and object-oriented programming. App Architecture is extremely important to understanding what an app needs to be built and run. To learn more about this topic, [read the following pdf](#). *Note that the blocks referred to in this reading are from App Inventor Classic, where we are using App Inventor 2. Although the blocks are different, the concepts remain the same so we strongly encourage the reading.*

## *Debugging*

Debugging is a process many programmers use to find 'bugs' or errors in their code. There is currently a bug in [this version of the PaintPot tutorial.](#) (Click on the link to download the .aia, or App Inventor code file, then upload the file to App Inventor by choosing the "Import project (.aia) from my computer…" option from the "Project" menu in the [App Inventor service](#)). Find the bug by testing and using [this corresponding tutorial](#). Then make a modification.

To introduce yourself to the idea of creating and debugging an app, we recommend that you read Chapter 15 from the App Inventor book.

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## *Assignments*

- Join the App Inventor Forum
- Complete "student document" on Magic Trick.app