



Wanna See Something Cool?



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About Me

- CS Teacher at TJHSST
- APCS Exam Reader, 2007-13
- Educational Consultant, Google's K12 Outreach Team
- Teacher Advisor, CS Education Week
- CSTA Board of Directors, 9-12 Representative from 2011-13

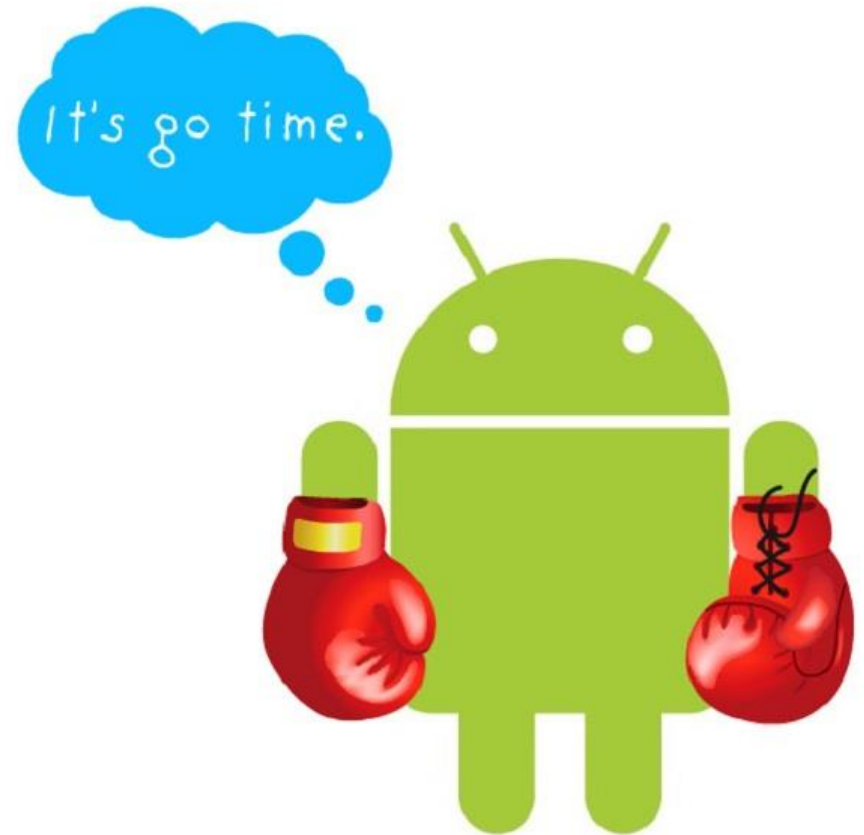


What is App Inventor?

- Free, cloud-based, open source platform for developing apps for mobile platforms that run the Android OS
- Developed by Google and MIT, released to public in December 2010
- Two parts
 - Component Designer / Layout Manager – design the user interface
 - Blocks Editor – add behavior by snapping blocks together like a puzzle

Drag-and-Drop != Programming

- Event driven programming
- Variables
- Conditionals, Iteration
- Random numbers
- Procedures and parameters
 - Creating your own blocks
- Lists
- Recursion
- User interfaces
 - Model, view, controller



So, What's It Good For?

- To dispel myths about the computing profession
- To show kids that:
 - they can be creators (not just consumers) of technology
 - they have the power to help change the world
 - computing is creative, collaborative, relevant, and personal
- To integrate computing with other subjects (CS + X)
- To get them excited to learn more!
 - Next step → [Processing w/ Android](#) or straight to Eclipse



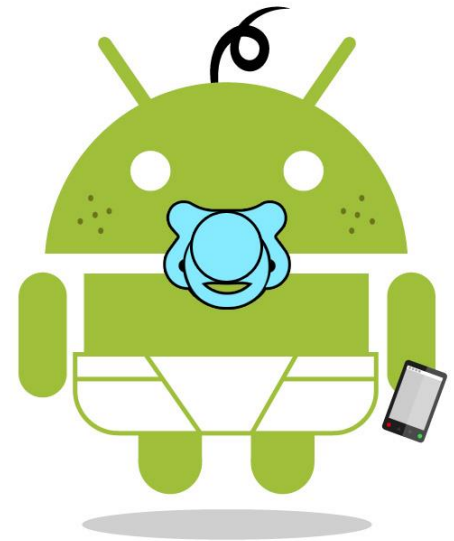
What Will We Need?

- Internet w/ a non-IE web browser (did I say that out loud?)
- Software
 - [JDK](#)
 - [App Inventor](#)
- [Google account](#)
- Phones/Tablets (Android OS 2.1+)
 - Device drivers
 - Enable phone to accept non-market sources
- Micro USB to USB cables
- Useful apps – [MIT AI Companion](#), [Barcode Scanner](#), [Androidify](#)



My First App

- Recommend a quick win – 20 min or less
- Send home with app on phone
- Demo – avoid tutorial for this
- Visit appinventor.mit.edu – Log in
- Hello World? No, [Hello Purr](#)
- [Cowbell](#), Maracas, or Ode to the Vuvuzela



Keep Your Fingers Crossed

To test your app:

➤ Emulator

- good for testing some functions
- can't shake computer (or at least you shouldn't)
- slow to boot up, don't close emulator until you are done for the day

➤ Phone connected via USB

- immediate results, you can see changes as you make them
- does not install app on phone
- turn up the volume
- need device drivers

Look Ma, I Made an App for That!

Now, to show off to friends and family:

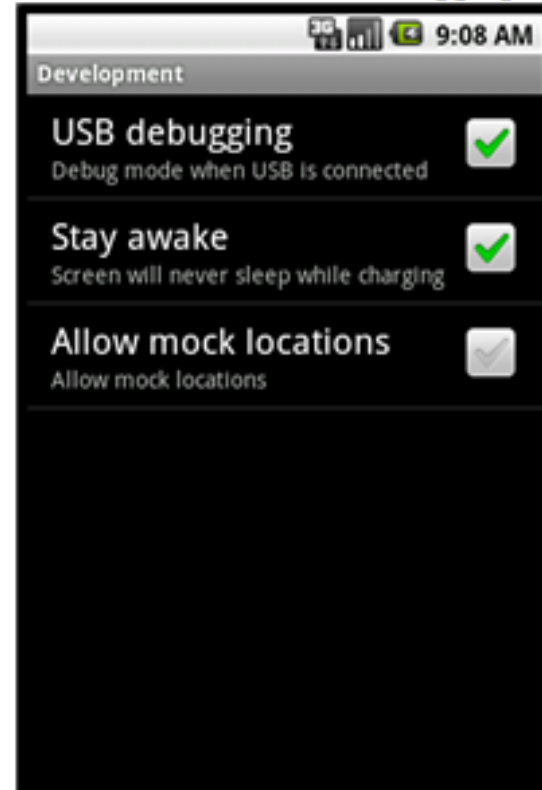
- Download to connected phone via cable – actually installs
- Barcode – cool factor, but emails must match
- Download to computer – saves APK file to computer. You can send out via email or post for people to download.
- Install wirelessly – must use MIT AI Companion app, computer and phone must be on same wireless network

Setup Phone

➤ Settings - Applications



➤ Settings - Development



Moving On

- Demos – Tip Calculator, Magic 8 Ball (variables, lists)
- Tutorials – PaintPot (fun with features), Mole Mash, Quiz Me
- Tutorial – Pong
 - 1: <http://screencast.com/t/Zta3eaaC>
 - 2: Initializes ball, <http://screencast.com/t/9vjcT1kX>
 - 3: (Paddle), <http://screencast.com/t/Veeptu2vme>
 - 4: <http://screencast.com/t/l4nkswbh>
 - 5: (Ball collide with paddle), <http://screencast.com/t/tppvOmnP>

Keeping score in the pong game:

- 1: <http://screencast.com/t/s5clzhdm>
- 2: <http://screencast.com/t/zFgJ2LfXrc>

Show Me the Money!

- Apps made with App Inventor can be put in the Google Play Store (formerly known as the Android Market)
- \$25 one-time fee to register as a developer
 - <https://play.google.com/apps/publish/v2/signup/?pli=1>
- Prepare app for Play Store
 - http://beta.appinventor.mit.edu/learn/reference/other/appsto_play.html



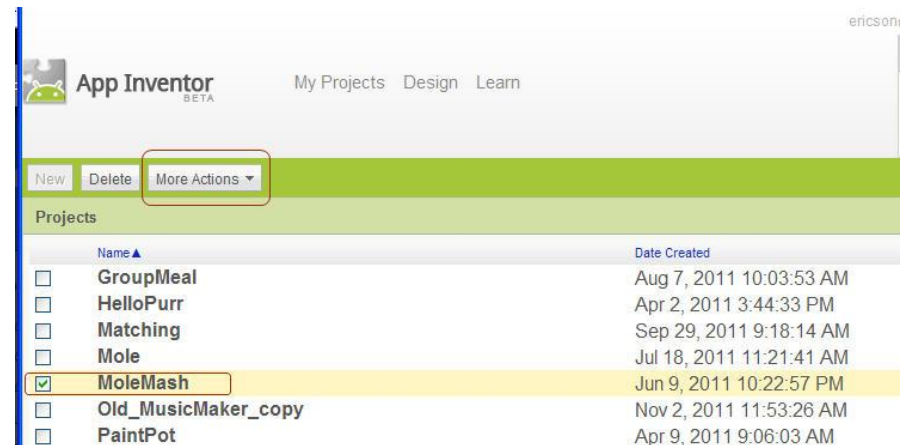
Freecycle..Regift..Just Get Us Phones

- Call for donations in school newsletter
- Visit local cell phone repair stores
- Leverage social networking
- Utilize DonorsChoose.org
- Pool together to create a lending library



Share and Share Alike

- Go to *My Projects*
- Check the app to share
- Click on *More Actions* and then *Download Source*
- This will download a zip file to your computer
- Send zip file to whomever you wish
- They click on *More Actions* and *Upload Source* to select the zip file



A Place in the Curriculum?

➤ Curricular

- middle school
- proposed AP CS Principles course
- CS0
- grad course in UI design, accessibility

➤ Co-curricular

- integrated units – Contagion, feral hogs
- alternative to multimedia presentations

➤ Extracurricular

- after school programs, clubs, summer camps

Which Students Could We Target?

- Beginners (even as young as late elementary school)
 - Get them excited about creating something using programming
- Advanced students
 - Expose them to user interface design, design thinking, and a different programming paradigm
- Students in after school programs, clubs, and summer camps
 - Get them hooked on computing so that they will then enroll in your courses

Contests and Hackathons

- [Verizon Innovative App Challenge](#)
- [Technovation Challenge](#) (Girls only)
- [MIT App Inventor Contest](#)
- [College Student Competition](#)
- [Apps4VA](#)
- [HAC4EDU](#)
- [Stanford's Imagine Mobile Contest](#)
- [Booksmash Challenge](#)
- [Siemens' We Can Change the World Challenge](#)



Resources

- [Book](#)
- Tutorials
 - [App Inventor Tutorials](#)
 - [Snippets](#)
 - [David Wolber's Tutorials](#)
- [Forum](#) – check out the category *App Inventor in Education*
- [Gallery](#)

Resources Cont'd

➤ Teacher Websites

- Ralph Morelli's Mobile CS Principles website -

<http://mobile-csp.org/resources>

- Trinity College -

<http://www.cs.trincoll.edu/~ram/cpsc110/syllabus.html>

- University of San Francisco -

<https://sites.google.com/site/appinventorcourse/>

- Georgia Tech -

<https://sites.google.com/site/cs1803poc/home>