

SPECIAL TOPICS IN CS: TEACHING WITH MOBILE DEVICES

NCSU Tapestry Workshop

Friday, July 19 10:45 am - Noon

THE SET UP

Apex High School

Academy of Information Technology

Sponsors & Partnerships

- National Academy Foundation and Lenovo
- National Pilot of five Academy of Information Technology schools to compete in creating Android applications
- Received:
 - 30 Android ThinkPad Tablets
 - 6 Touch Screen Computers
 - Projector with Cart
- Business Alliances/Mentors
 - Leveraged industry contacts

Mobile App Development Project

- Student Volunteers
- Self-Guided Learning Project
- 12 Weeks
- Groups of 4
 - Include at least one programming track student, preferably upper level, to serve as technical advisor
- Teacher Advisor

Mobile App Development Project

- Online, Self-Guided Curriculum
- Industry Volunteers
 - Extracurricular!
- Final Product
 - Marketing Plan, 3 pages
 - Presentation
 - Video of Abbreviated Presentation (3 min)
 - Functioning or Wireframe App

Mobile App Development Project

- Projects
 - Student Choice
 - Industry Requests
 - HVAC Calculator
 - Jimmy V Golf Tournament
 - Shop Local Raleigh

The Students

- Committed
- Motivated
- Team Work
- Time
- Student Attrition
 - Extra-Curricular
 - Time
 - Other Commitments



CURRICULUM

App Development Project

Using Java

- Carnegie Mellon University
 - Open Learning Initiative
 - Free course
 - Introduction to Programming
 - <https://oli.cmu.edu/courses/free-open/media-programming-course-details/>
 - DrJava
 - IDE for Java
 - 12 Modules
 - Key Concepts
 - Basics – Variables, Casting...
 - Loops
 - Arrays
 - Classes
 - And much more.

Using Eclipse (Java)

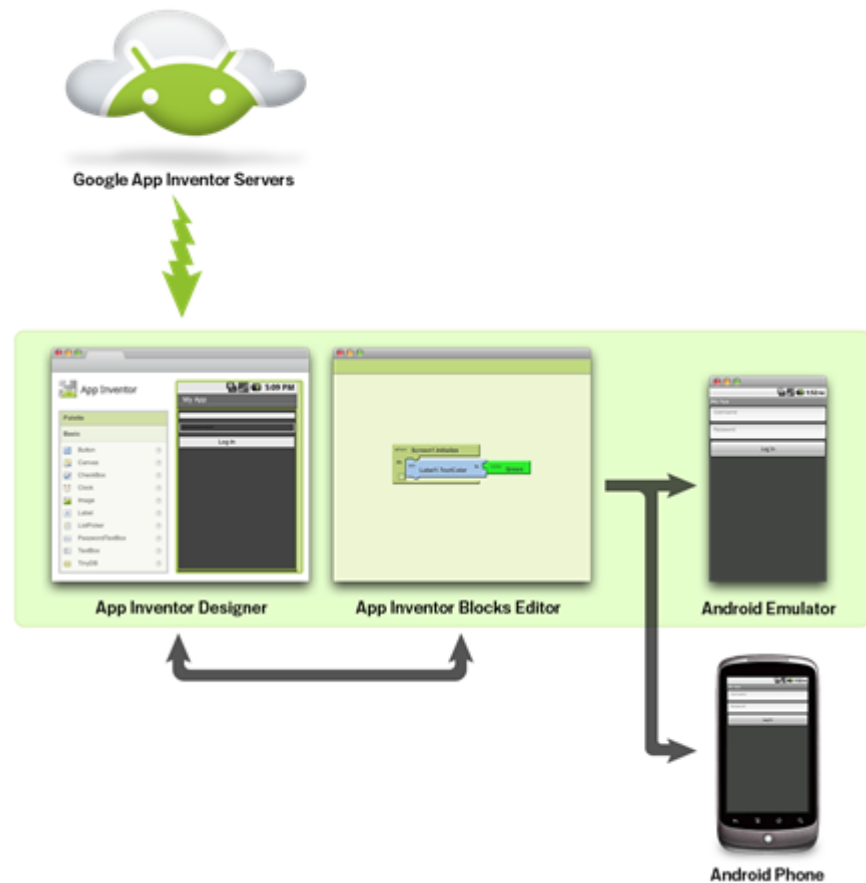
- For Android development, you will need the plug-in for the SDK and Eclipse.
- Eclipse
 - The Java IDE that supports the plug-in for Android
 - Eclipse Classic – recommended
 - <http://www.eclipse.org/downloads/>
- Android SDK
 - SDK Link
 - <http://developer.android.com/sdk/index.html>
 - Installing the SDK
 - <http://developer.android.com/sdk/installing.html>

MIT App Inventor

- Use a web browser and connected phone or emulator to develop a Droid app.

- Tools

- App Inventor Designer
- App Inventor Blocks Editor
- Android Emulator



MIT App Inventor

- Sample Resources

- <http://beta.appinventor.mit.edu/learn/>
- <http://www.youtube.com/playlist?p=PL2D27126F35E50A1B>



Android Developer

- Site for Android developers
 - <http://developer.android.com/training/index.html>
- Resources
 - Set Up
 - Lessons
 - Basic
 - Advanced
 - Technical Resources
 - More



Top Projects

- Shop Local Raleigh
 - Worked with local non-profit organization that promotes and supports locally-owned, independent business.
 - Wanted an app to provide a mobile directory.



Top Projects

- Lab App
 - App developed for students to use when doing science labs.



LAB APP

Sifron Benjamin, Amanda Bizune,
Chris Miller, Logan Brown

CONCLUSION

Special Topics in CS:
Teaching with Mobile Devices

Conclusion

- Many Resources
 - Android Developer
 - MIT App Inventor
 - CMU Introduction to Programming
- Our Experience

Sponsor Conclusion

"It was truly inspiring to see the enthusiasm for the application development program. We definitely picked the right partners in NAF, MIT and the five academy sites. The students' work was amazing! I think the success of this program highlights this fundamental belief: if projects are relevant, interdisciplinary and promote collaboration, students will be more engaged and learning outcomes will be increased."

Michael J. Schmedlen
Director, Worldwide Education
Lenovo

THANK YOU

Leslie Keller

lkeller@wcpss.net