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Mobile apps software development with Creative Inquiry

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Mobile Apps Software Development with Creative Inquiry

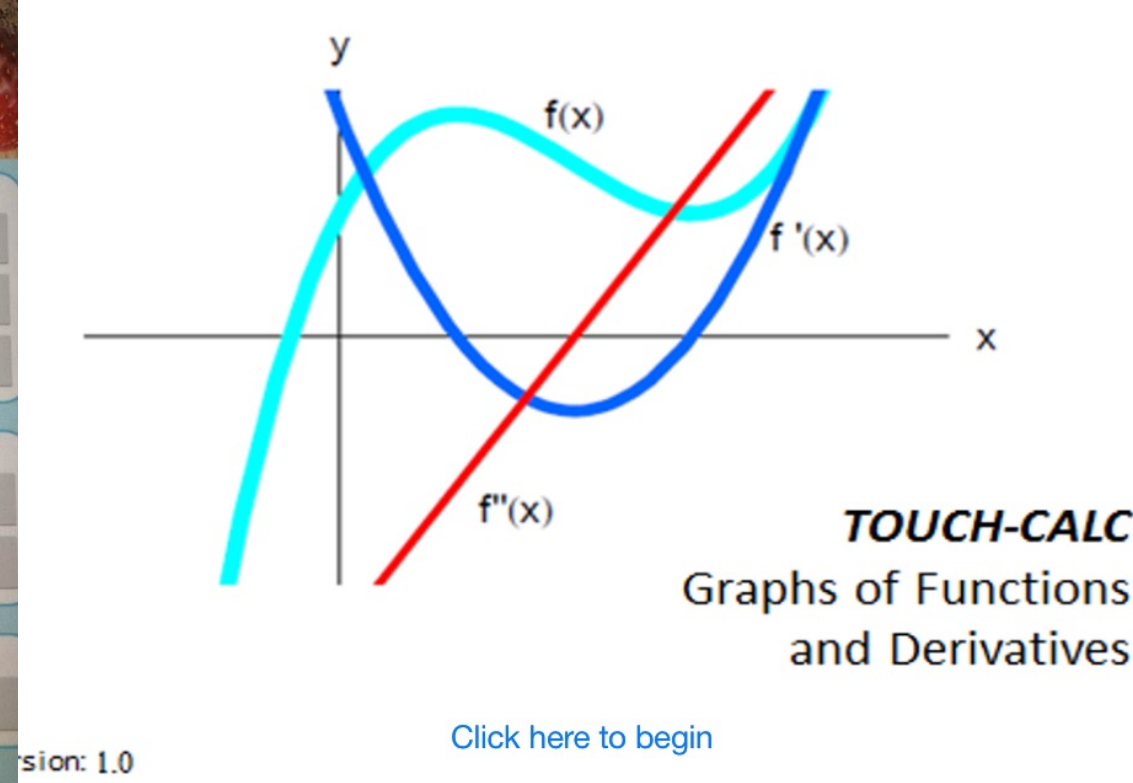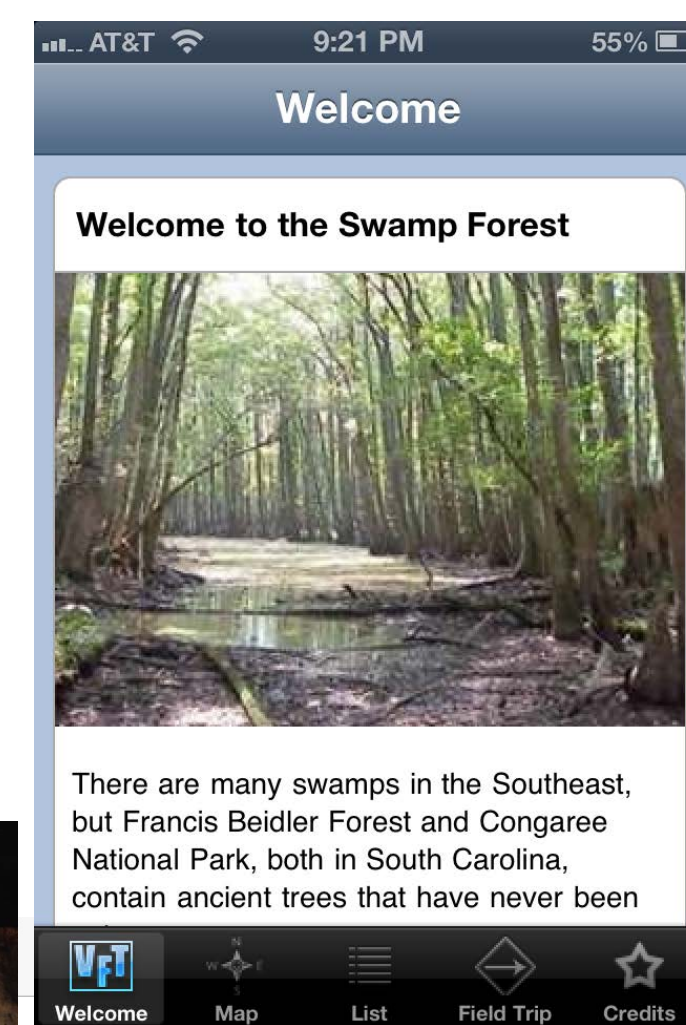Gregory Edison, Punit Kulkarni
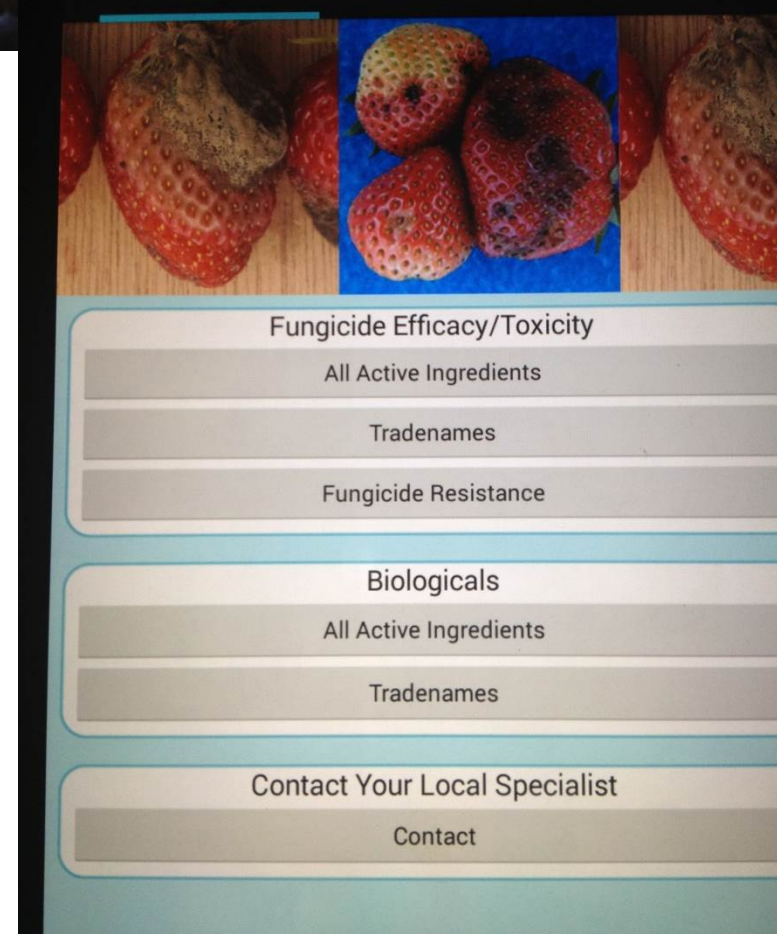{ gedison, punitk } @clemson.edu
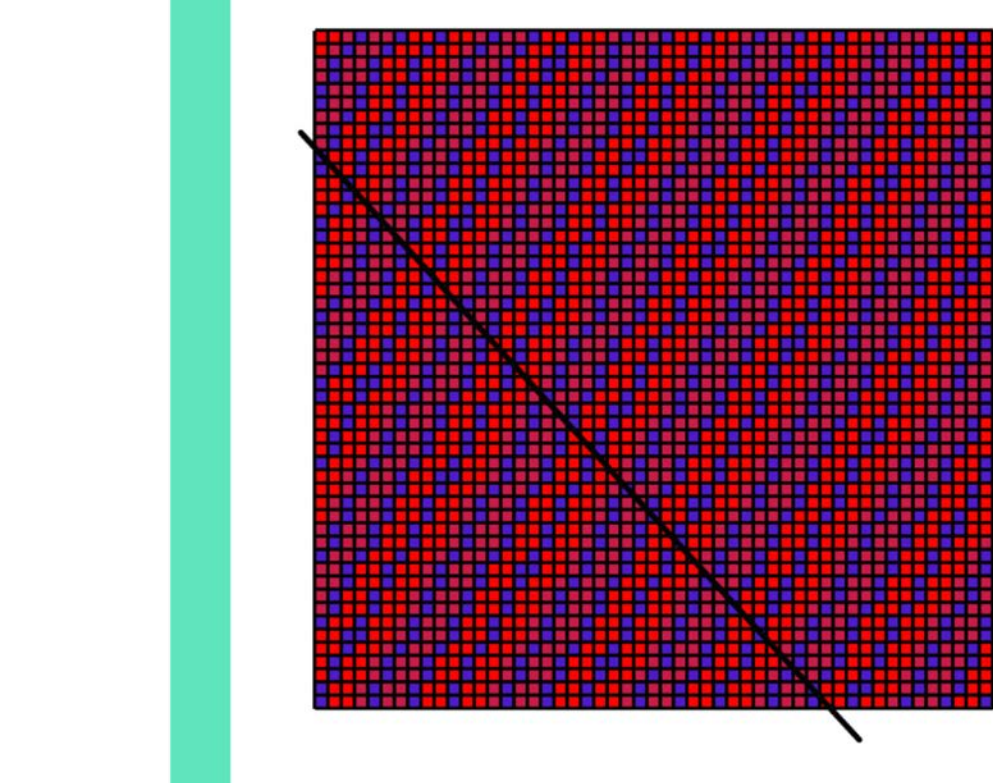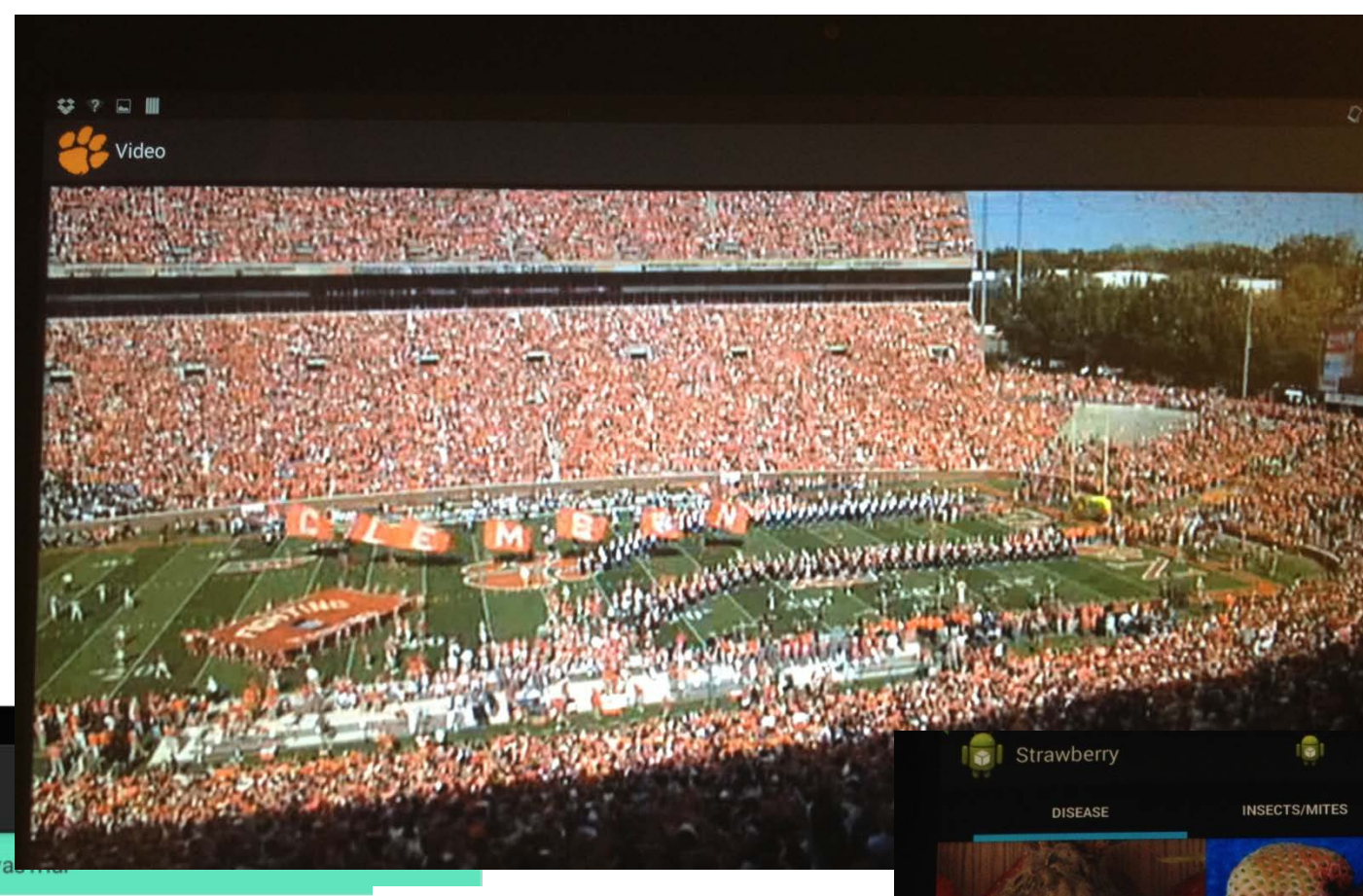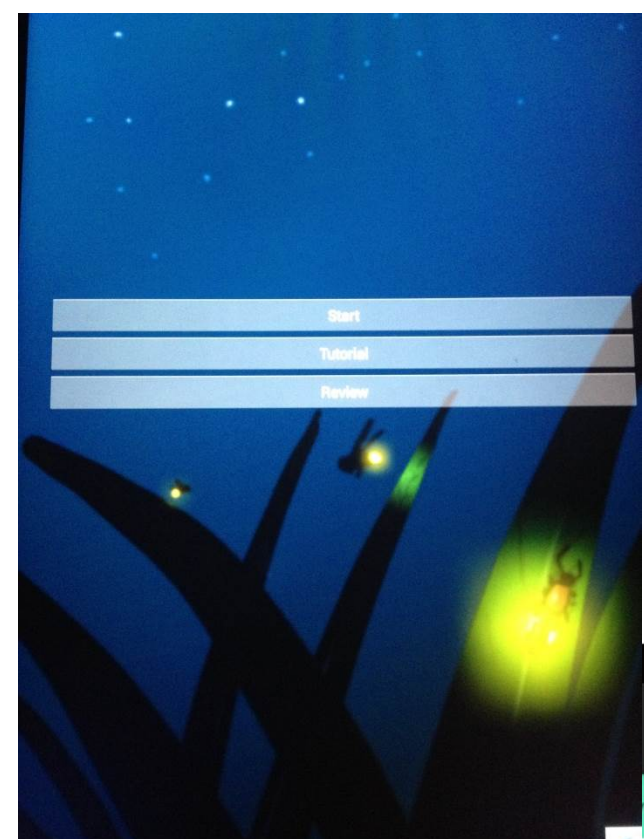
Clemson University

A Need for a Mobile Device Software Development

Smartphones and tablets are proliferating very rapidly and it is important for us to provide our computer science students with the skills and capabilities required to program these devices. Mobile device (smartphone or tablet) software development should be a permanent course in any computer science curriculum today. It is as relevant to the education of computer science students as programming languages, operating systems, and database design. Some might argue that it won't be too long before it becomes more relevant than some of our traditional computer science courses.

Results Demonstrated

The development of several apps, both iOS and Android, have continued beyond the classroom. Eight are shown below and are demonstrated live at ACMSE 2014. Android: Firefly Counter, Clemson University Tour, Radiology, Strawberry. iOS: SwampForest, mHealth, Touch-Calc, Virginia Woolf.

Creative Inquiry

The mobile device software development course does not restrict itself to a fixed curriculum. Instead, a novel teaching technique utilizing "open collaboration" is implemented. In addition, to come up with realistic project ideas, we depend on the Creative Inquiry program whose website explains:

"Students take on problems that spring from their own curiosity, from a professor's challenge or from the pressing needs of the world around them. Students take ownership of their projects and take the risks necessary to solve problems and get answers".

Approach taken: (1) Use online tutorials (e.g., Stanford series on iOS programming). (2) Employ Open Collaboration in which students openly share with class discoveries they have made. (3) Include two weeks of an introduction to database design. (4) Creative Inquiry, a university-wide program designed to give (primarily) undergraduate students experience in designing and developing solutions to research problems posed by faculty members, researchers and staff around campus is employed in the course.

This proposal presents and focuses a novel and successful techniques such as 'open collaboration' and 'Creative Inquiry' used in mobile device software development course taught at Clemson University along with a demonstration of apps developed using this technique.

Virginia Woolf

Current and Future Apps

Seven iOS apps developed by students who have taken this class are currently available at the Apple App Store: Clemson University Tour, Firefly Flash Counter, Swamp Forest, Cove Forest, Salt Marsh, EQUIP, and Record of Reading. Two Android apps: Clemson University Tour and Firefly are scheduled for upload to the Google Play Store by May, 2014: Clemson University Tour and Firefly Counter. Two iOS apps are scheduled for upload to the Apple App Store by May 2014: Touch-Calc and Virginia Woolf. Seven other apps are currently under development.

Acknowledgements

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