CS 495 (Android Programming)

Syllabus

Course Information

CS 495 (4 Credits)

Instructor: Terry Seethoff
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Office Hours: M-F 2-4:00

Beginning Date: August 26, 2013
Number of Weeks 16
Meets MWF
Location: West Science 1209
Time: 10:00 to 10:50

Course web site: http://euclid.nmu.edu/~terry/android/

Course Description

Android Application Development

Textbook


Course Objectives

The course is designed to achieve the following objectives:

1. Competence with the fundamental programming paradigms used to write Android applications which include:
   - Activities
   - Fragments
   - Navigation
2. Competence with applications that permit users to interact with their environment such as location awareness, media or the Internet
3. Proficiency with the tools for creating Android applications

Student Expectations

Android applications are written in Java and typically include Interfaces, Inner Classes (including anonymous inner classes) and some appreciation of object-oriented design patterns. These topics are covered in two semesters of Java (CS 120 and CS 122 at NMU) and will be expected for the course.

Grading

The final grade for the course will be weighed equally between in-class exams and projects. There will be a mid-term and final exam. The mid-term and final exam will each account for 25% (50% in total) of the final grade and the course projects will account for the remaining 50% of the final grade.

In-class Exams

Android applications utilize a collection of programming paradigms that structure the way programs are written. The paradigms include the Android operating system, as well as idioms (patterns) that are used again and again. The in-class exams will focus on these and will be in the nature of brief essay questions.

The following are illustrative:

1. What is the typical life-cycle of an Activity and how is it related to the life-cycle of an attached Fragment?
2. What are Fragments, and how are they used?
3. What is an ANR (application not responding), and what programming techniques will minimize such occurrences?
4. What is a Listener and what are they used for?
5. Illustrate how Listeners are typically written with skeleton code to attach a Listener to a Button whose id is “my_button”. Assume the button is described in an XML layout file.
6. The compiler says that it cannot find the Resource class (R). What is the likely cause?
7. What is Git and why do we use it?
8. What are Titanium and Phonegap? Why would we use them?

It is understandable that the sample questions above may seem obscure. But, if you already knew the answers to most of them, then there is no need to take the course.

One of the learning objectives for this course is to develop skills that facilitate independent learning (to be resourceful). Most programs we write contain unintended puzzles (bugs) that temporarily stop progress. Almost every puzzle has already been created by someone and good solutions are posted on the web. And, almost every programming concept has been illustrated in a tutorial somewhere. As a test of your resourcefulness, try finding answers to the sample questions with a search for a few keywords. Always include “android” among the list of keywords. For example, search for “android lifecycle.” (Note especially that the exams will be closed book/computer.)

Projects

A primary objective of the course is to write Android applications that have practical or commercial value. Most of our class/laboratory time will be focused on writing code together, and your regular class participation is expected. You will also be expected to write applications independently and as a member of a team. These projects will comprise half the grade.

ADA

If you have a need for disability-related accommodations or services, please inform the Coordinator of Disability Services in the Dean of Students Office at 2001 C. B. Hedgcock Building (227-1700). Reasonable and effective accommodations and services will be provided to students if requests are made in a timely manner, with appropriate documentation, in accordance with federal, state, and University guidelines.