IT 535
Wireless and Mobile Programming
Course Overview

Course Objective

The main objective of the course is to give students an introduction to Android programming and provide information about approaching and solving coding problems on limited devices.

Projected Outline

1. Overview of Mobile Computing
2. Projects and Targets
   a. Project Structure
   b. Manifest File
   c. Creating a Project
   d. Using Android Development Tools
   e. Emulators and Targets
3. User Interfaces
   a. Resource Files
   b. Using UI Widgets
   c. Containers
   d. Menus
   e. Activities
   f. Lists
   g. Event Management
4. Dealing With Threads
   a. Handlers
   b. Asynch Tasks
5. Persistance
   a. Using SQLite
   b. ContentProviders
6. Web Services
   a. A JBoss Approach to Java Webservices – JBoss Forge
   b. Consuming RESTful Services
   c. Consuming Soap Services
7. Communicating with Internet
   a. REST operations
   b. HTTP with Apache HTTPClient
   c. Parsing Responses
8. Broadcast Receivers
9. Services

Project

Project groups will be formed and each group is expected to submit a presentation and a written report of a subject assigned by the instructor. Some of the project subjects are as follows:

- ***Programming IOS/ iPhone***
- ***Programming Windows Mobile***
- ***One of Gaming Frameworks for Android (Cocos2d, Libgdx, Unity, Unreal Engine, Chipmonk)***
- ***One of HTML5 based mobile platforms (ex. Ionic, React Native, Xamarine)***
- ***Wear Programming (Android, IOS, Emerging Techs)***
- ***Single Board Computers: Ex. Rasberry PI***
- ***Embedded Systems and Microcontrollers : Ex. Arduino***
- ***Simple Web Servers: NodeJS***
- ***Android TV***
- ***Android Auto***
- ***Android Kotlin***

Students should mention *at least* a brief history of the technology, technical overview, usages-real life examples, market statistics, competitors, trends and how to code. Groups must be at least 2 person.

Grading

Project 30%
Labs 10% *(Will be graded according to the class performance)*
Homeworks 30%
Final Exam 30%

Reading Materials

- *Android Programming – The Big Nerd Ranch Guide – 2nd Edition, 2015*
- *Head First Android Development, 2015*
- ***developer.android.com , resources for Developers – ALL OF THE BEST***
- *Online reading materials will be announced according to the subjects covered*
- *Kodlab, Android Programlama*
- *Beginning Android Programming – 5th Edition, Appress*