Introduction to Mobile and Server Programming

Course Goals

1. Introduction to developing Android applications (Students comfortable with iOS can build the apps using iOS if desired. However, iOS programming will not be taught but we can support your development efforts if you run into problems)
2. Introduction to server side programming using Java/JSP and MySQL. (Students can choose to use PHP/ASP/Ruby etc.)
3. Develop a mobile client-server application by combining 1 & 2 above.

Introduction

Growth of mobile has been unprecedented. Mobile programmers are in high demand and any student who is interested in developing client server mobile apps will benefit from this course. The course will be structured into three sections. The students will work towards building a real application that will utilize material learnt in these sections.

Part 1: Server Side Programming

The first part of the course will introduce them to the basics of server side programming

- Relational Databases
- SQL
- Interfacing to a database such as MySQL using JSP
- Server side Programming using Java and Java Server Pages (JSP)
- Creating JSON API’s using Java to interface with mobile apps
- Ingesting RSS feeds from various sources for dynamic content

After the completion of this phase, students will be comfortable developing dynamic web content, database programming and creating REST API’s. The purpose of Part 1 is for the students to learn how to create dynamic content that can be used with the mobile apps.
Part 2: Client Side Programming

The second part of the course will cover Android programming. In particular, the following topics will be covered.

- Use of Eclipse as a IDE for development
- Building Dynamic UI's using various layouts
- Use of Fragments, Actionbar and Intents
- Object serialization
- Android File and network access and asynchronous processing
- Connecting to the cloud using JSON API’s developed in Part 1

Part 3: Labs

In the third part of the course, we will work in the CS labs towards building a client server application. Students will be expected to work in teams and come up with ideas for an application. Team size will depend on the size of the class.

Software Tools Used:

- Eclipse IDE
- Tomcat Webserver
- MySQL
- JSP

Grading:

Project: 70% (Instructor and Peer Review)
Class participation and Involvement: 30%

Prerequisites:

- Experience in Java programming (or C++) and CSE 110
- Basic understanding of Web technologies such as HTML, SQL and Web Servers

Questions:

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