

EECS1022 —Programming for Mobile Computing

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This course provides a first exposure to object-oriented programming and enhances student understanding of key computing skills such as reasoning about algorithms, designing user interfaces, and working with software tools. It uses a problem-based approach to expose the underlying concepts and an experiential laboratory to implement them. A mature mobile software infrastructure (the Java programming language and the Android platform) is used to provide context to the underlying ideas. Laboratory exercises expose a range of real-world problems with a view of motivating computational thinking and grounding the material covered in lecture.

Topics

A. Object-Oriented Programming

1. Primitive types and Expressions
2. Classes and objects
3. Control structures
4. Strings and Regular Expressions
5. Collections

B. Mobile Computing

1. User interface elements and XML
2. The MVC Design Pattern
3. The Development Process
4. Layouts, Themes, Activities, and Intents
5. Event Handlers

Expected Learning Outcomes

1. Demonstrate an understanding of the software development process within an object-oriented framework using a modern programming language and tool set.
2. Use a set of computing skills such as reasoning about algorithms, tracing programs, test-driven development, and diagnosing faults.
3. Explain and apply fundamental constructs in event-driven programs, including variables and expressions, control structures, and API usage.
4. Write simple programs using a given software infrastructure, API, and tool chain.
5. Gain exposure to a comprehensive mobile computing framework.
6. Gain exposure to user interface design.

Required Textbook

Introduction to Computer Science with Android, The Learning by Doing Series, By H. Roumani, CompuScope Consulting (2019). Available on Amazon.
