Thesis Projects for EIE of the University of Sydney, 2012

Project 1. XML-Based GUI Programming

GUI (Graphic User Interface) programming is an important, yet tedious job in software development. One of problems with the current GUI programming model, such as java swing, is that the presentation control and application logic are mixed so that any change of UI will lead to code changing and re-building. This project explores a XML-based GUI programming model. This model consists of two key components: (1) a UI Description Language (UIDL); and (2) a UI engine to render the UI described in UIDL. This project requires 1~2 students. The minimum perquisites for this project include: (a) basic java programming; (b) basic concept of GUI. Through conducting this project, the students will learn: (i) XML programming; (ii) GUI programming; and (iii) Developing high quality of code.

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Project 2. TPC-C Benchmark Development

TPC-C is an industry standard benchmark for testing database. However, few TPC-C benchmarks are available on the Internet for performance testing. This project aims at developing a TPC-C benchmark in java and/or C#. The benchmark consists of 2 key components: (1) a backend system that implements all TPC-C business logics; (2) a front-end client that provides both command line and GUI (Graphic User Interface) for the benchmark. This project requires 2~4 students. The minimum perquisites for this project include: (a) basic java/C# programming; (b) basic concept of database and GUI. Through conducting this project, the students will learn: (i) JDBC programming; (ii) GUI programming; and (iii) Developing high quality of code.

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Project 3. Software Reuse using Component Technologies

Components are mature technologies for software reuse. This project studies and demonstrates software reuse by developing an online trading system using component (EJB and/or COM+) technologies. The online trading system will provide basic functionalities for a share trading, such as: checking share price; buy/sell shares etc. The system consists of 2 parts: (1) a backend system that implements the trading business logics in EJB/COM+; (2) a web application for the trading system. This project requires 2~4 students. The minimum perquisites for this project include: (a) basic java/C# programming; (b) basic concept of web applications. Through conducting this project, the students will learn: (i) EJB/COM+ programming; (ii) Web application development; and (iii) Developing high quality of code

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