Project 2
Title: Automated Testing of Web-Based Applications
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Description:
Web-based applications (WebApps) have their unique characteristics different from conventional software products. The quality dimensions of WebApps include (1) the correctness of their functions, (2) the completeness and consistency of the contents stored in the web site, (3) the structure and extensibility of the web site, (4) usability (whether it is easy to use), (4) navigability, (5) performance, (6) compatibility, (7) interoperability and (8) security.

In this project, we focus on the quality factors (1), (2) and (4). A WebApp normally generates three categories of output: static documents (e.g., static HTML files), dynamic documents (generated by programs running at the server site), and active documents (generated by programs running at the client site, such as Java applet and JavaScript). The aim of this project is to develop an automated tool to test WebApps that generate dynamic pages and active documents. Both the test data generation and the verification of the output will be automated.

This project will apply a methodology developed by Dr. ZhiQuan (George) ZHOU and his colleagues to automate the web testing process. This project will utilize an existing web testing tool called "Scone", which allows the quick development and evaluation of new Web enhancements. Scone is published under the GNU General Public License, and can be downloaded from http://www.scone.de/.

The student needs to first study some related papers (available at http://www.scone.de/docus.html) to understand the system, and then download and install it. After that the student needs to modify the system to incorporate our new testing methodology.

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The Expected Outcome:
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(1) An automated tool for web testing
(2) Research papers
(3) Possible collaboration with colleagues in other institutions.

This project can be extended into honours, master by research, and PhD projects.

Best regards,
Z.Q. (George)
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