An Android Application Based on Web Service and Cloud Computing

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Abstract

This project aims to prove that computation capability offloading from mobile computing to cloud computing is a feasible method of improving mobile computing performance when executing computing-intensive tasks.

A mobile device requires compromises to be made between aspects such as mobility and computational capability. With the increasingly pervasive use of cloud services comes a new way to empower mobile computation ability; to off-load intensive computing work from mobile computing to cloud computing. Based on typical project aims and task requirements, there are three main components required in the construction of the whole system: the mobile device, Web server, and cloud server. The mobile device transfers intensive computation tasks to the Web server, which is in turn deployed in the cloud server, exploiting the powerful computation ability of cloud computing.

The basic concept described in this dissertation is a distributed system, which combines mobile computing, a Web service, and cloud computing together to achieve the target of enhancing mobile computation capability. To address the issue that a mobile application could be required to execute heavy computation tasks, the choice of tasks is important. Scientific image processing, and searching required messages from a huge number of data source; these are examples of two tasks, which could be effectively realised as Web services in this project. This concept is for the thesis of this project, and leads to the implementation, evaluation and analysis work described in this project.