Intro to JAVA Project Proposal

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I. PROJECT PURPOSE

We plan to build a system for image processing based on client-server model. We will provide an interface for users to upload their own images, and send images to selected users in batch processing. Some complicated image process functions will be introduced from open source library. Our project aims at the design and implementation of JAVA web application.

II. DESIGN DETAILS

Our project can be separated into several functional parts, which will use various of JAVA features as below:

A. Databases

We will use JDBC to connect MySQL database. The database stores the user information for login and account management. It also contains the image resources for front-end requests and receives the uploaded images from authorized users.

B. Cache

Redis cache can optimize the recent requests for both single user and multi threads. In this course project, the performance of cache might not be dramatic, but we will implement this as practice.

C. Back-end

We will use Spring framework to support the back-end functions and realize the aspects oriented programming for the server objects. Back-end is mainly responsible for processing data from database, sending data to the front end, and pre-processing the data which will be saved into the database. This part will be implemented in multi-threads.

D. Front-end

We will implement a basic user interface to support user login, user connection, image requests and output files based on React framework. Interaction between front-end and back-end will be implemented in GET/POST requests.

III. DATA FLOW STRUCTURE