Team Screenshot Design plan

Project - Screenshot Capturing System

CMSC495

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Overview

This document contains an outline of the program design of the Team Screenshot application. The design is subject to change in the spirit of agile development, but the current iteration detailed in this document should give a fairly reliable overview of the design.

Basics and Dependencies

The Screenshot application is written in Java, running on the Java Runtime Environment 8. It uses the Maven build automation tool to handle the various dependencies. In order to programmatically take screenshots at regular intervals, the application uses the Selenium browser automation tool, with the Chromedriver extension. For sending emails to users with the screenshots, the JavaMail API is used. We decided to go with a NoSQL approach for the database, so the application uses MongoDB.

Classes

The following is an overview of the classes involved and their functions.

**Main**

Initializes the HTTP and SMTP servers and the Mongo database. Initializes the ScheduledExecutorService thread that handles the automated screen capturing using the ScreenshotService runnable. Handles exceptions.

**ScreenshotService**

Implements Runnable. Using Selenium, periodically opens a Chrome browser instance and takes screenshots of the websites extracted from the database. Uses the SMTP server to send screenshots to users subscribed to their respective websites via email.

**WebHandler**

Handles the bulk of HTTP GET and POST requests submitted by the web interface. When a user subscribes to a new site, cleans up and error checks the input and submits it to the database. When a user requests to view all previous screenshots of a site, retrieves their URIs and formats them into html to display the screenshots.

**ResourceHandler**

Handles the GET requests for loading static resources from the server such as images, CSS files, scripts, etc.

**DBHandler**

Interface with MongoDB for handling the various insert and retrieval tasks.