Client / Server Architecture

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Introduction / Overview

This system will be a database with a graphical user interface for the admin to keep track of the server activity. This database will have the ability to store information and generate emails. This system will be run on a desktop or laptop computer and have both a client interface and an administrator interface. The server will be able to handle multiple clients at the same time and monitor data about the clients.

System Perspectives

1. Customer
   a. A system that has a client interface and an administrator interface that will have the ability to store information and generate emails. Will be able to generate reports on the amount of users, those who are logged in or out of the system, and those who are locked out of the system.
2. User
   a. A user will have the ability to create a username and password that is linked to their email address. They will also be able to login to the system using their created username and password. After successfully logging in, the user will be able to generate emails.
3. Developer
   a. A generalized client interface that connects to a generalized server interface. The server will have separate databases for user information and system information. User information will include usernames, passwords, and email addresses. System information will include IP addresses and related data.

Development Environment to be used:

What programming language will you use? ▪ Java

What development environment will you use? ▪ Eclipse

What GUI library will you use? ▪ Java Swing

What email server will you use? ▪ SMTP Gmail Server

What database management system will you use? ▪ MySQL

Concerns about Specification:

- The team members are not well versed in some of the programming aspects such as SMTP Gmail server, Client/Server Networking. Hence, it may take longer than anticipated to create the required system for the Client.
- Team members have previously only worked with single-threaded programs, thus the jump to multi-threaded programming will require more research.
- **A single team member has previously been exposed to the database management system MySQL and will have to expose other team members to its technical abilities.**
- Even though the team members are confident about working on the successful project, this will be the first experience for all team members to be working on a large project with larger groups.

Questions / Clarifications regarding Specification:

1. During a scenario when a user is locked out of their account, what should the procedure be for unlocking the account? Will it only be a password reset query sent through email? Is there going to be a security question query that allows for account security?
2. Will there be tracking of IP addresses that are tied to a user's account? During a scenario where a user accesses their account on an IP address that is different from the one they created that account on, should there be any security measures to secure that account?
3. For account creation, will the username for an account be separate from the email address? Will the username be user generated or generated based on the user's email address?
4. More specification is needed when it comes to database implementation. How will it affect the development process, and what possible changes will the development team have to execute, when implementing the system database when more information is provided by the customer?

Biographies

Jimmy Sun

Jimmy Sun is a junior international student at California Lutheran University majoring in computer science. He has experience with html, java, and python. He has been working on many projects under the instruction of Dr. Reinhart and Dr. Peng. He is skilled with Microsoft Word, Microsoft PowerPoint, and Microsoft Excel.

Tyler Amirayan

Tyler Amirayan is a Sophomore at California Lutheran University studying for a major in Computer Science and a minor in Mathematics. He is experienced mostly in Java and C++ but is familiar with HTML, CSS, and batch file programming. His current major project is recreating the most downloaded game in the world, Minecraft, from scratch with his own custom implementations. Though this is practice for his ambitions to work in Cybersecurity, Security Software Development, General Software Development, Penetration Testing, and for fun, creating libraries and video game modifications for programmers and users.

Jacob Cudiamat

Jacob Cudiamat is a junior at California Lutheran University where he is studying to earn a bachelor's degree in Computer Science. He has experience with python but mostly writes in java. Jacob has worked on and learned how to write code under Dr. Reinhart and Dr. Peng's teaching. A project he recently completed was the game Tetris. Jacob has also worked on projects in game design using Unity. He is skilled with programs such as Microsoft programs such as Powerpoint, Word, Excel, and Visio and Google Softwares such as Google slides, docs, and spreadsheet. as well as Windows, MacOS, and Linux operating systems.

Samar Salve

Samar Salve finished his Associate Degree in Web Designing from Genesee Community College, NY in May,2020. During this time he gained experience in HTML, CSS, Database, Networking and JavaScript. As an intern for a private firm he applied those skills in managing networks at private businesses and YWCA. Prior to that Samar Salve worked as a technical support for a private company for 4 years in India which included management of hardware and troubleshooting. He is currently a Senior at California Lutheran University pursuing Bachelor's degree in Computer Science. He is working towards a Masters in Artificial Intelligence following his interest in behavioral psychology. The largest program Samar Salve worked during was game of life where he implemented his own Java Swing design in the proximity of instruction provided.

Kyler Harlow

Kyler Harlow is a junior at California Lutheran University where he is majoring in Computer Science and minoring in Multimedia. He primarily works in Java, but has experience in Python. He is fascinated with image processing and, with instruction provided, has developed a GUI that implements image altering methods. He has also worked with many Adobe products to develop graphic designs. Some of Kyler's interests include listening to music, gaming, hiking, and designing.