**Indiana University Southeast**

**2021-22 CSCI Capstone Project**

**Workshop Management Web Application**

**Sponsor: Dr. Suranga Hettiarachchi**

**Software Architecture Specification**

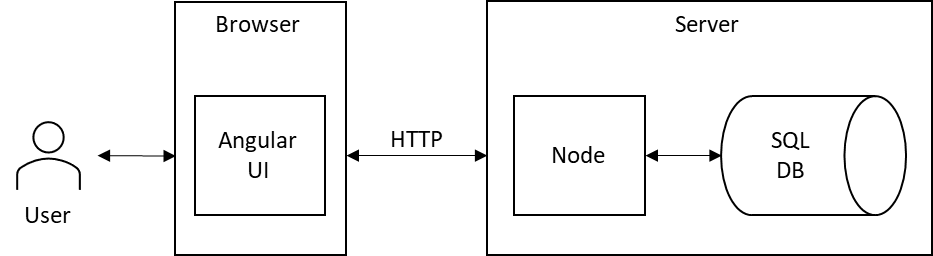
**James Schlesener**

**Overview**

This document provides an overview of the architecture for the Workshop Management system. The software will allow the user to manage their workshops along with the people and equipment used within each workshop.

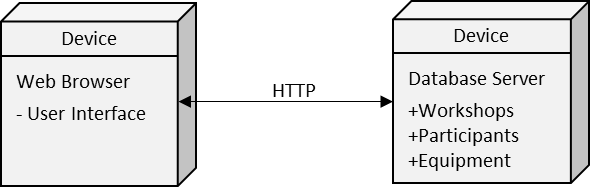
**Subsystem Decomposition**

The subsystems consist of the browser and the server. The browser will consist of the user interface written using the Angular framework that the user will interact with to retrieve and update the contents of the database. The server will consist of the server-side scripts written in Node.js which will process HTTP requests from the browser by writing to or reading from the SQL database.



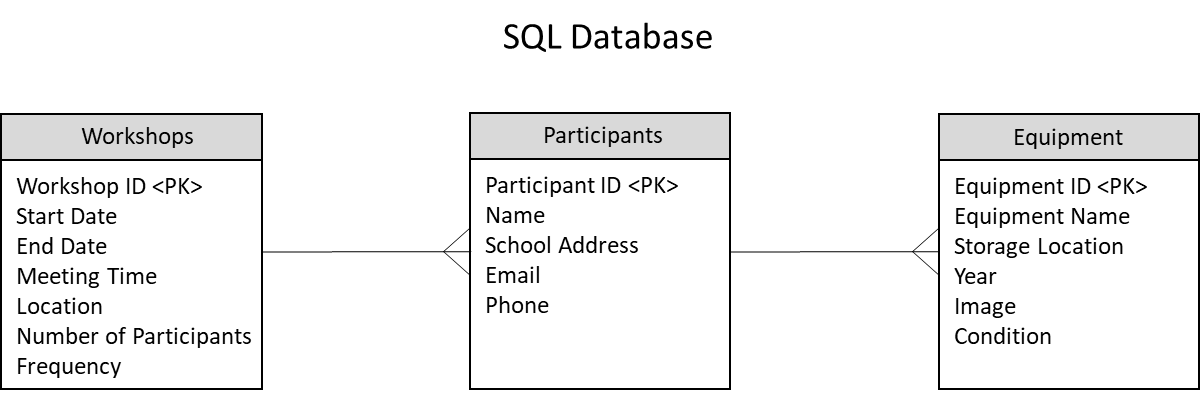
**Hardware Software Mapping**

The hardware will consist of the user’s computer on the front end and the database server on the backend. The two devices will communicate with each other using HTTP.



**Persistent Data Management**

All of the data will be persistent and stored in the SQL database. The database will consist of tables to store workshops, participants, and equipment. Each workshop consists of many participants. Each participant can be assigned multiple equipment.



**Access Control and Security**

This software is designed for the users overseeing the workshops. The users of this software will have full access to all operations and data. In order to keep the data private, maintain data integrity, and track who does what in the system logs, the user will be required to login to the system.

**Global Software Control**

The control flow for this software is event-driven. It will begin from a login screen. Once the user has logged in, it will take them to the main screen with options to list workshops, list participants, or list equipment. These main menu options will be available from all screens. In addition, a logout option will be available on all screens.

When the list workshops option is selected, it will show a list of all workshops including past and future dated workshops. On this screen, there will be an option to add a workshop. If workshops exist, there will be an option to delete a workshop and to view a workshop. The view workshop option will take the user to the view workshop screen.

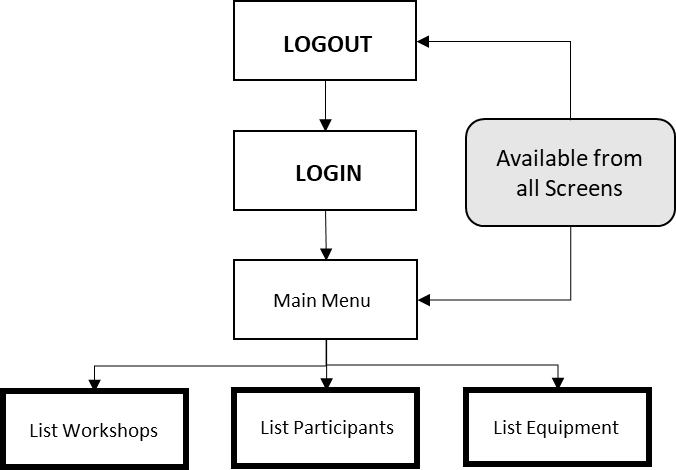
When the list participants option is selected, it will show a list of all participants both assigned and unassigned to workshops. On this screen, there will be an option to add a participant. If participants exist, there will be an option to delete a participant and to view a participant. The view participant option will take the user to the view participant screen.

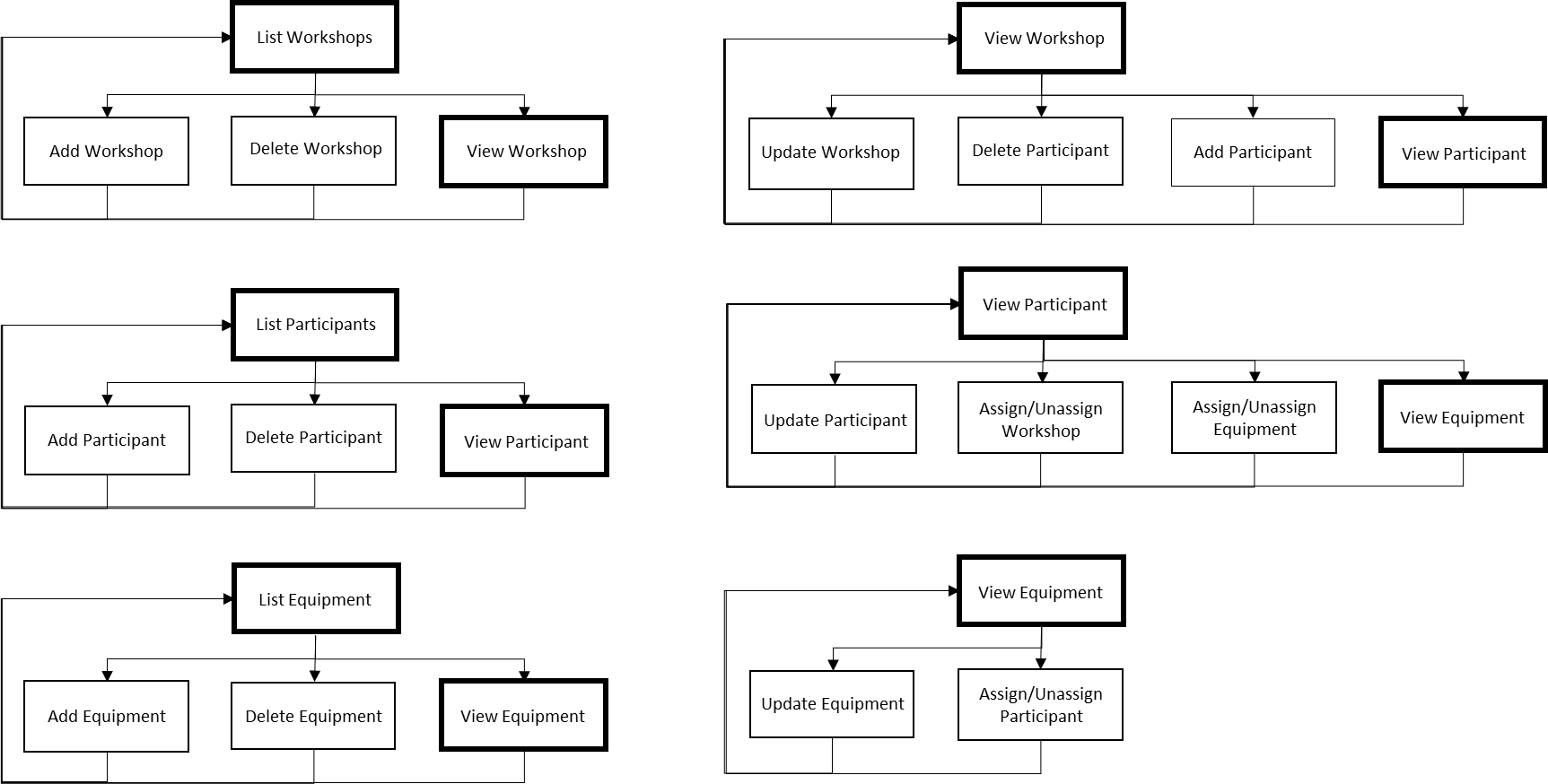
When the list equipment option is selected, it will show a list of all equipment both assigned and unassigned to participants. On this screen, there will be an option to add equipment. If equipment exists, there will be an option to delete equipment and to view equipment. The view equipment option will take the user to view equipment screen.

On the view workshop screen, the user can update a workshop, delete a participant if at least one exists, add a participant, or view a participant if at least one exists. If the view participant option is selected, it will take the user to the view participant screen.

On the view participant screen, the user can update a participant, assign the participant to or unassign the participant from a workshop, assign the participant to or unassign the participant from equipment, or view equipment. If the view equipment option is selected, it will take the user to the view equipment screen.

On the view equipment screen, the user can update equipment or assign/unassign equipment.





**Boundary Conditions**

The system will start up in the user’s web browser. The user will enter the system through a login screen and will exit the system by logging out. Input validation will be done to prevent errors and exceptions. There won’t be any daily, weekly, monthly, or yearly efforts to maintain the software. There will be procedures in place to bulk dump all of the data from the SQL database to a file and to load all of the data into the database from the file.