

Senior Software Engineering Project
Veterans Museum

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Project Summary

The main task of our project was to help our client, Mr. Bob Borden, have an easier time managing his database of Alabama veterans. We decided to move Bob away from Microsoft Access and build him two standalone applications that he can use to manage this database. Both applications, one for visitors to look at data and one for Mr. Borden to manage data, were written in C# with Windows Presentation Foundation (WPF). We also decided to merge his 6 database files and migrate to MariaDB.

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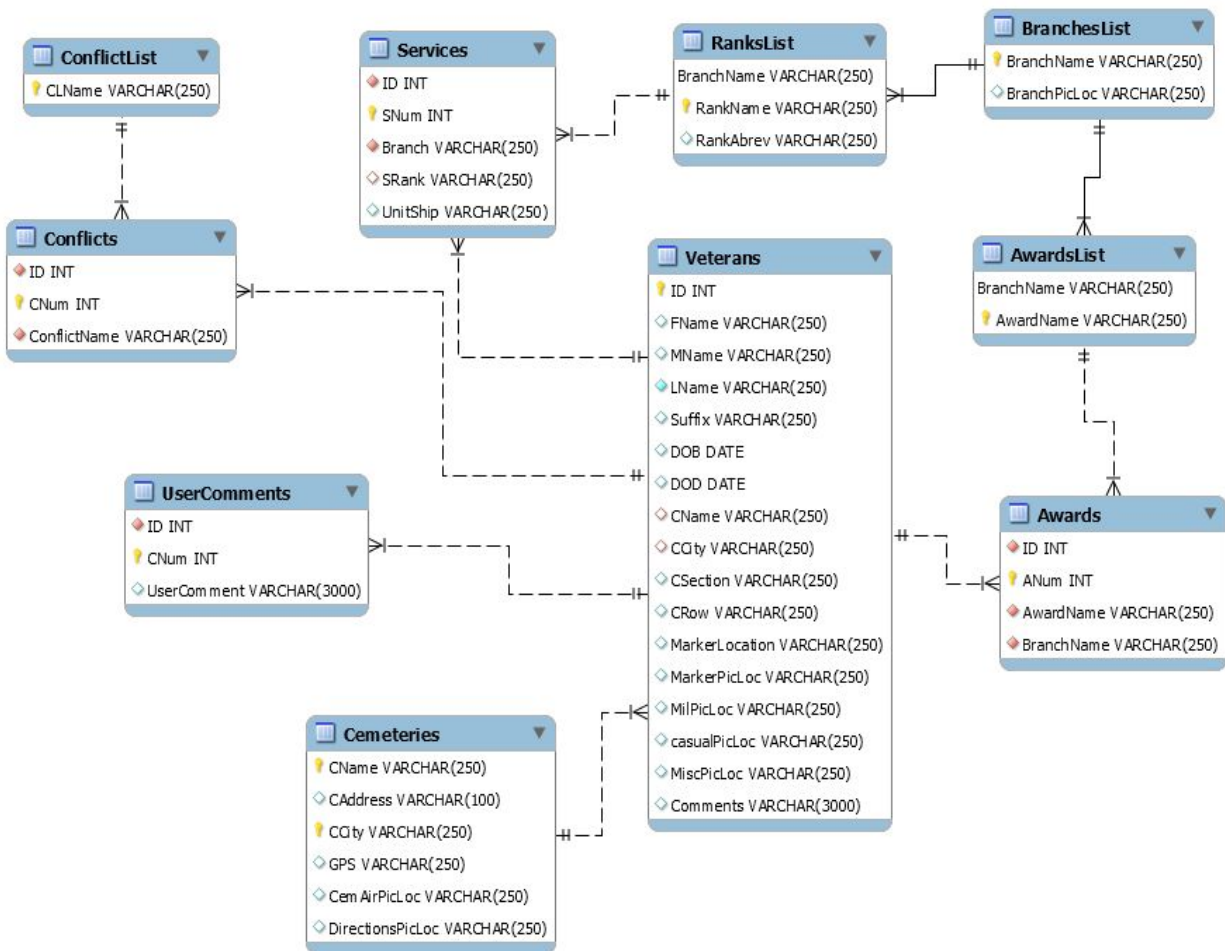
Problem and Objectives

The main objective this project aimed to complete was to alleviate as many of our client's issues with using Microsoft Access to manage his database as possible. Our client had trouble saving and loading his database and would sometimes create new files on accident. Our solution for this issue was to remove any unnecessary interaction with the backend data through building our applications that will handle loading and saving the database automatically. Both applications connect to this database when launched and the option to choose where to save within the administrator application was removed when saving updated or new records. Configuration files were also made to allow for the use of a separate, centralized server where both applications can connect via network. A cleaner user interface was designed for ease of use, both for users in the viewer side and for our client in the administrator side. The original Access database files were all merged into one and migrated into mariaDB. This was done by opening each database file into Microsoft Access and exporting to a temporary mysql database. These 6 exported databases were then merged into another temporary table where each column was looked at to find discrepancies in naming conventions within the records. Next, each column in all 6 exported database files were updated to match each other and the data was merged again into another temporary table. Finally the data was moved into their permanent tables and exported for use in the final mariaDB implementation.

Design Documentation

Database Design

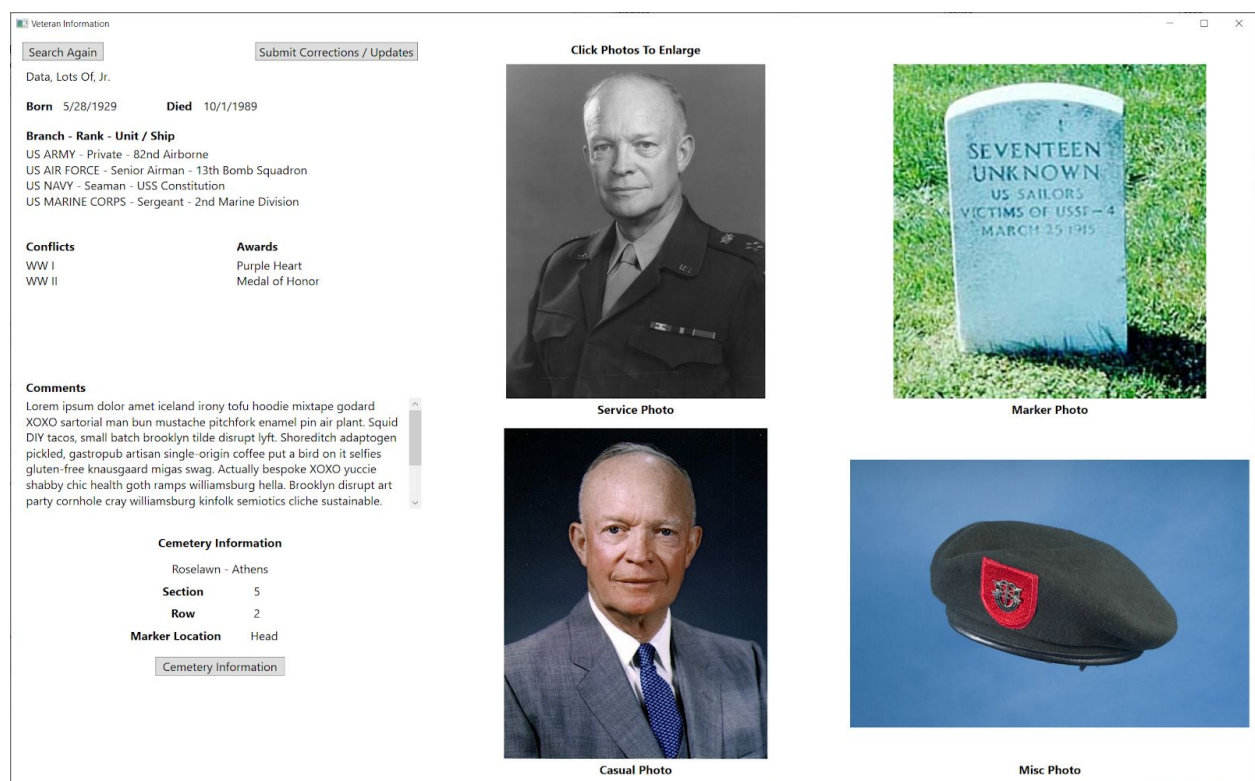
The following diagram shows the layout for the final implementation of the database.



Application Design

Viewer Application

The following figures show the final layout of the Viewer application where users can search and view veteran records.



Viewer Application

Administrator Application

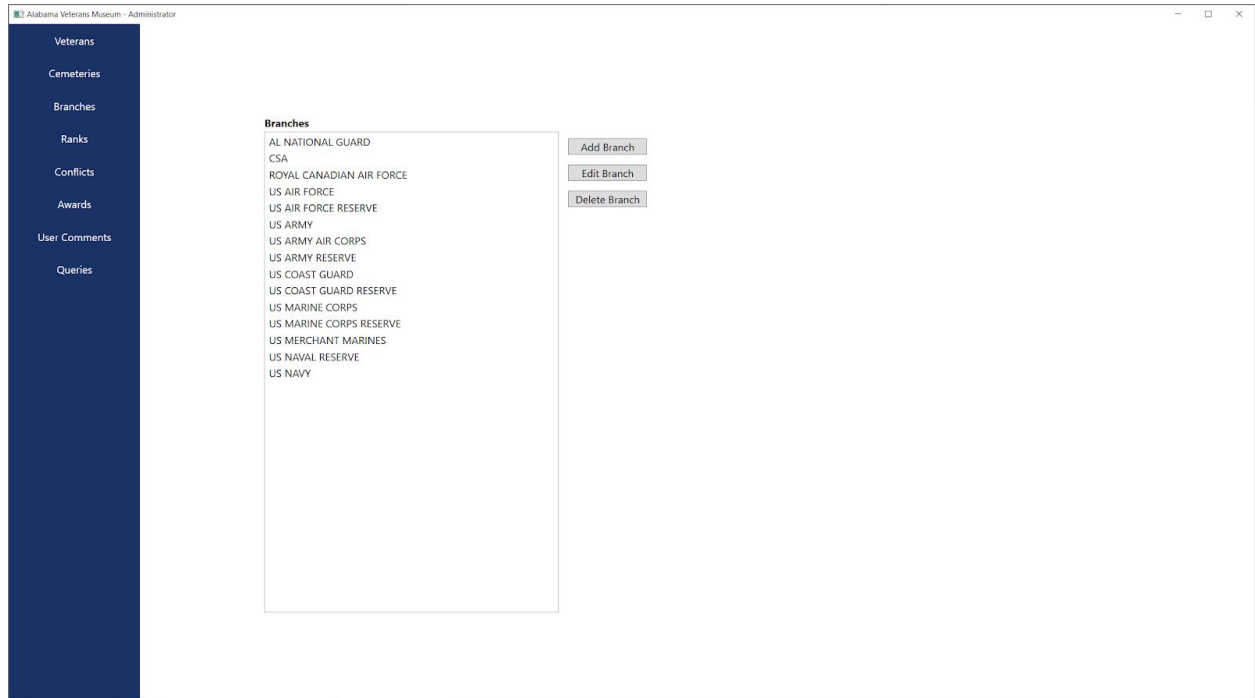
The following figures show the final layout of the administrator application where the client may edit anything he wishes.

The screenshot shows the 'Alabama Veterans Museum - Administrator' window. On the left is a dark blue sidebar with a list of menu items: Veterans, Cemeteries, Branches, Ranks, Conflicts, Awards, User Comments, and Queries. The main content area is white and contains two sections. The left section, titled 'Add Single Veteran', has an 'Add Veteran' button. Below it, the 'Add Veterans By Cemetery' section features a dropdown menu and a 'Quick Add' button. The right section, titled 'Search To Edit Existing Veteran', has a text input field labeled 'Enter Last Name' and a 'Search' button.

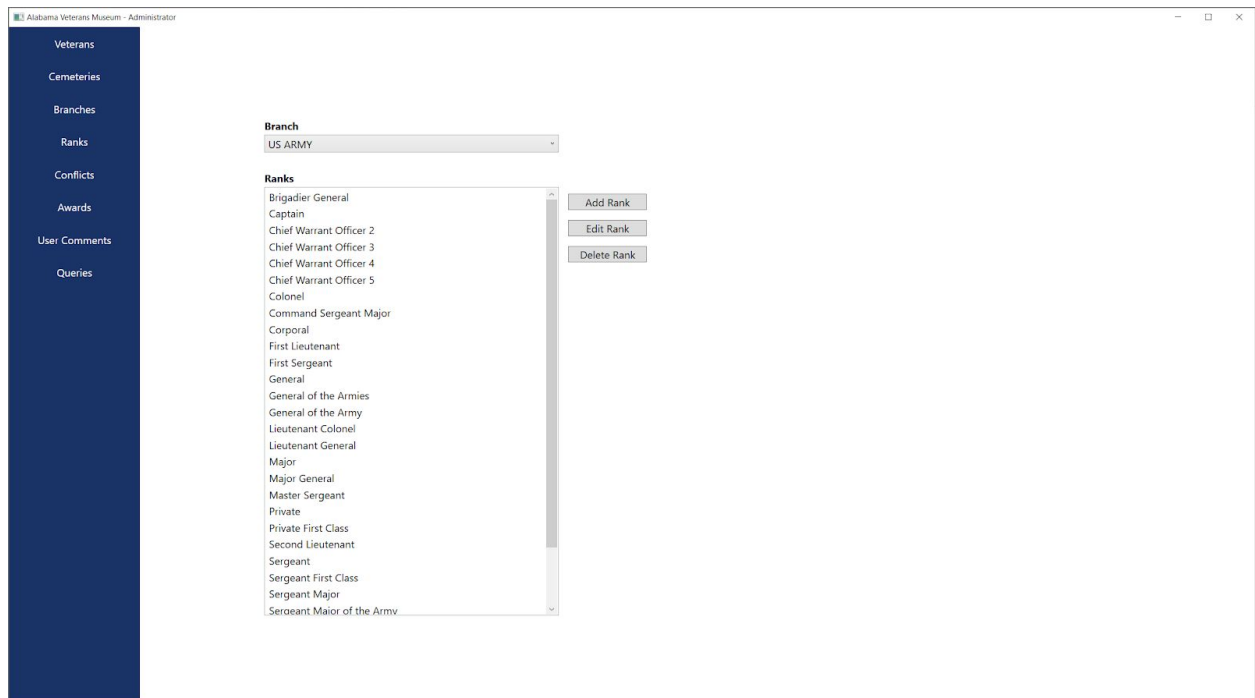
Admin Application - Veterans

The screenshot shows the same 'Alabama Veterans Museum - Administrator' window, but with the 'Cemeteries' menu item selected in the sidebar. The main content area displays a list of cemeteries: Athens City Cemetery (Athens), Roselawn (Athens), Roselawn (Decatur), and Thatch-Mann (Athens). To the right of this list are three buttons: 'Add Cemetery', 'Edit Cemetery', and 'Delete Cemetery'.

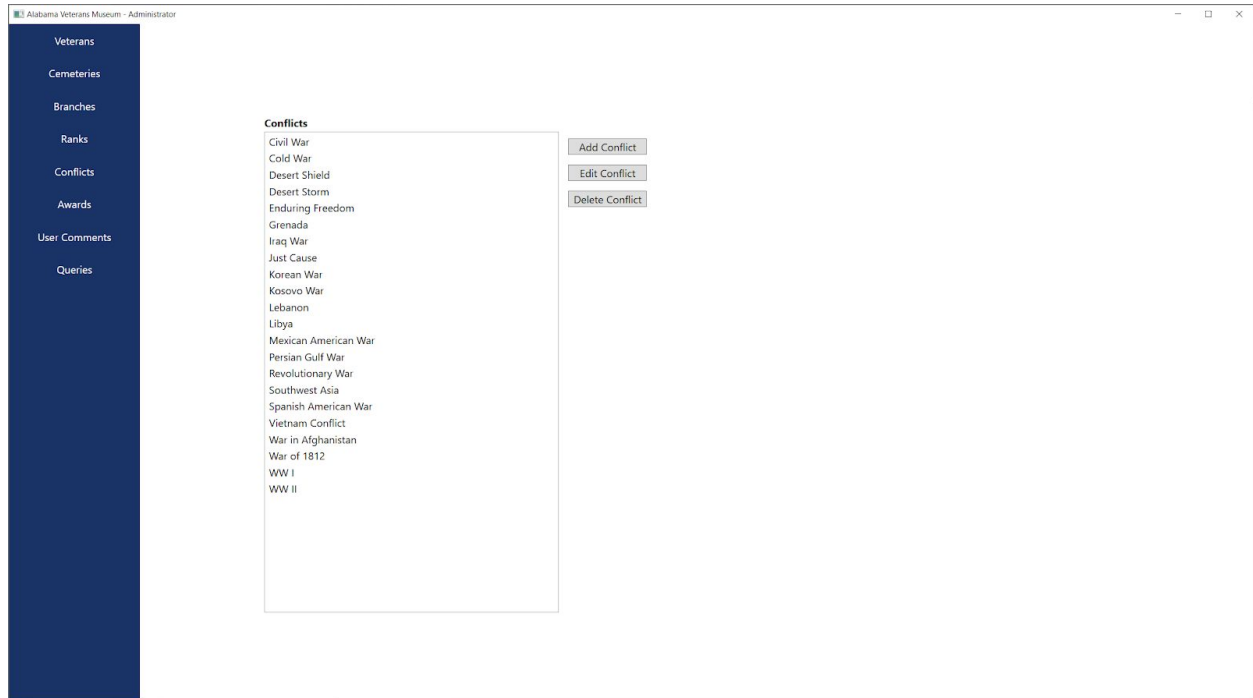
Admin Application - Cemeteries



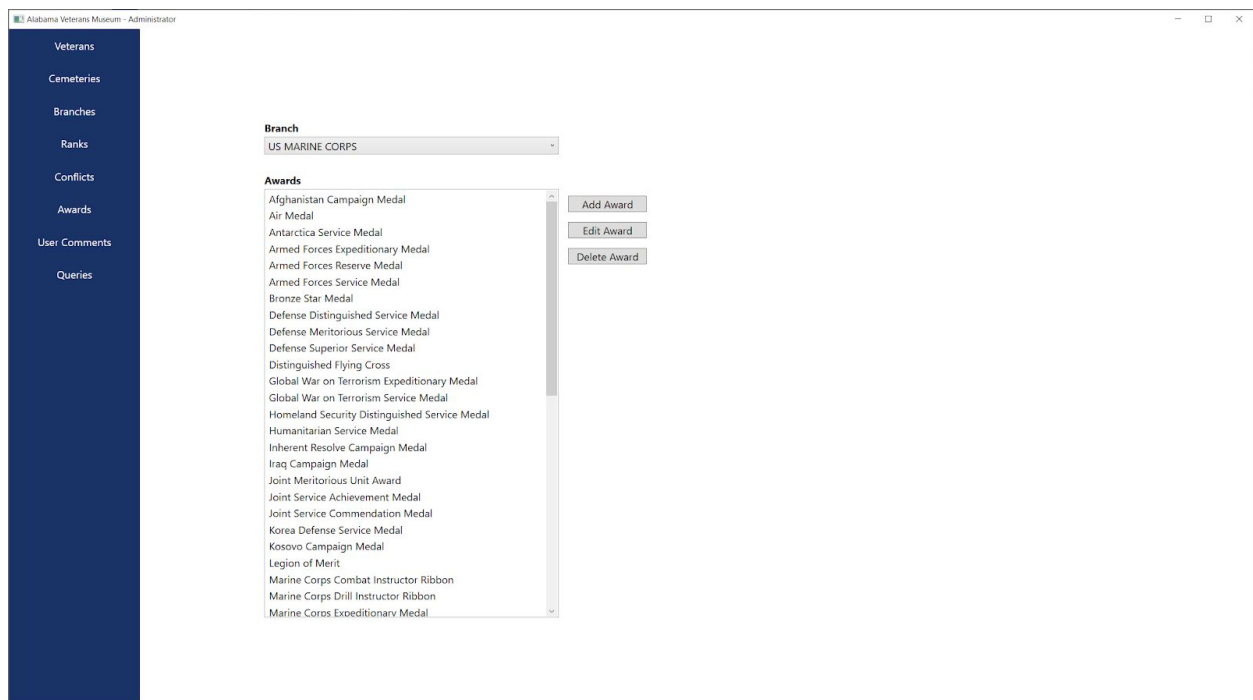
Admin Application - Branches



Admin Application - Ranks



Admin Application - Conflicts



Admin Application - Awards

Alabama Veterans Museum - Administrator

- Veterans
- Cemeteries
- Branches
- Ranks
- Conflicts
- Awards
- User Comments
- Queries

Corrections / Updates

Data, Lots Of, Jr.

[View Comment](#)

Admin Application - Comments

Alabama Veterans Museum - Administrator

- Veterans
- Cemeteries
- Branches
- Ranks
- Conflicts
- Awards
- User Comments
- Queries

Total Database Queries

Count of veterans in the database. [Run Query](#)

Cemetery Queries

How many veterans in cemetery? [Run Query](#)

How many with veteran count per cemetery. [Run Query](#)

List the with veteran count per cemetery. [Run Query](#)

Branch Queries

How many veterans in branch? [Run Query](#)

List branches with veteran count per branch. [Run Query](#)

Conflict Queries

How many veterans in conflict? [Run Query](#)

List conflicts with veteran count per branch. [Run Query](#)

Branches - Cemetery Query

How many veterans in cemetery? [Run Query](#)

Branches - Conflict Query

How many veterans in conflict? [Run Query](#)

Conflict - Cemetery Query

How many veterans in cemetery? [Run Query](#)

Admin Application - Queries

References

MariaDB - <https://mariadb.org/>

Mysql dev - <https://dev.mysql.com/>