

Senior Software Engineering Project  
Veterans Museum  
Version 2

Version 1 Content  
Ben Ward  
John Michael Raimondi

Version 2 Content  
Phillip Owens  
Nicholas Morgan

## 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.

The version 2 of the project addressed a list of action items requested as changes to the project as delivered by the version 1 team. The requested items were meant to address some simple functional changes, new features, and an effective backup solution for the projects data. The functional changes and features were written in C# with Windows Presentation Foundation (WPF), while the backup solution is implemented using Windows batch scripts.

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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.

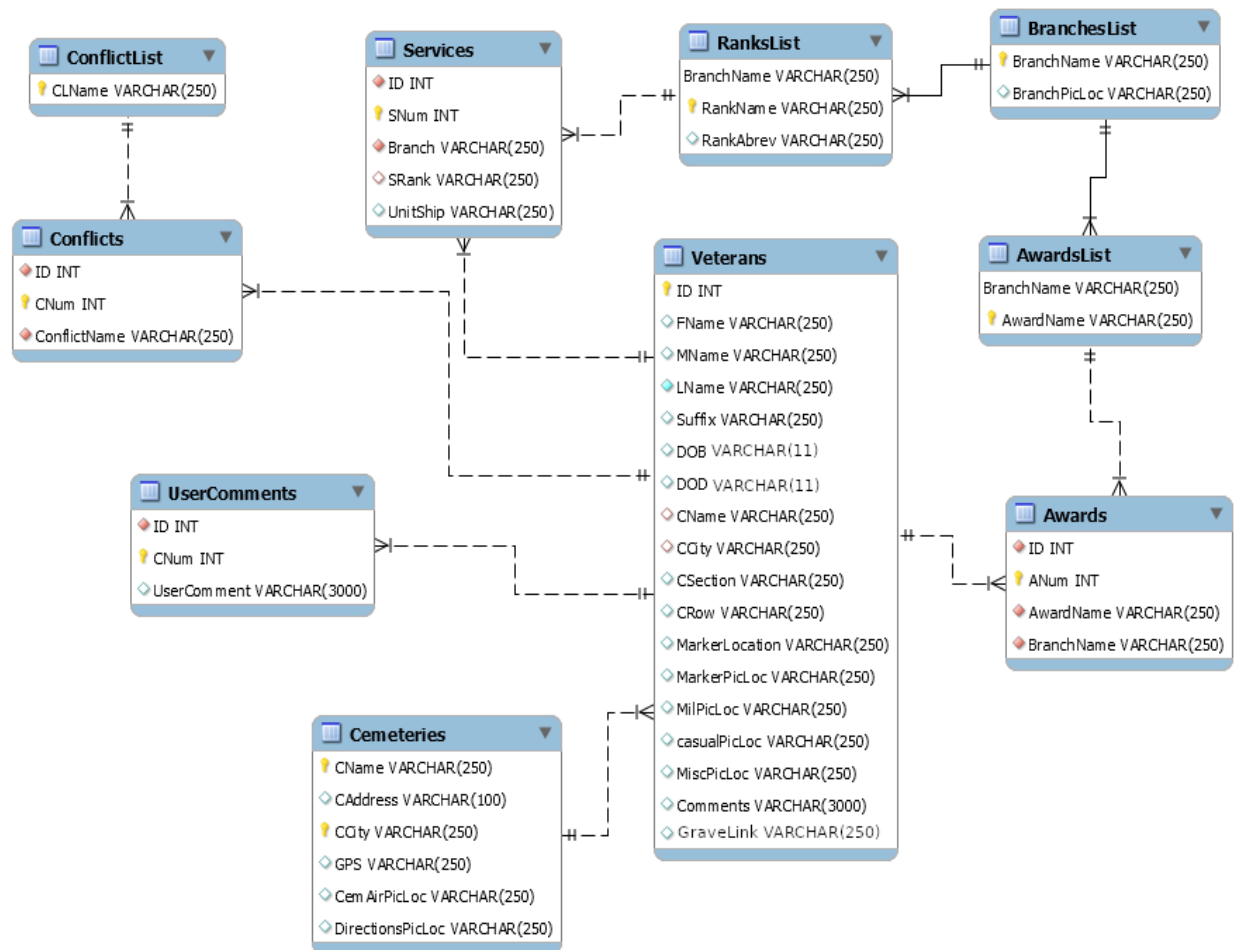
The goal for version 2 of the project was to implement a list of action items requested by the client after using the product on a daily basis since the original install. The complete list of action items include:

- Backup Solution for data/images.
- Notification for a successful save.
- Add ability to clear forms during data entry.
- Change Dob/Dod to allow partial or incomplete data as available.
- Correct link for user guide on desktop.
- Add Google Maps data to cemetery information page.
- Add ability to link veteran's Findagrave.com page when available.
- Repurpose veteran "Marker pic" to a "Misc pic" once Findagrave.com link is in place.

# Design Documentation

## Database Design

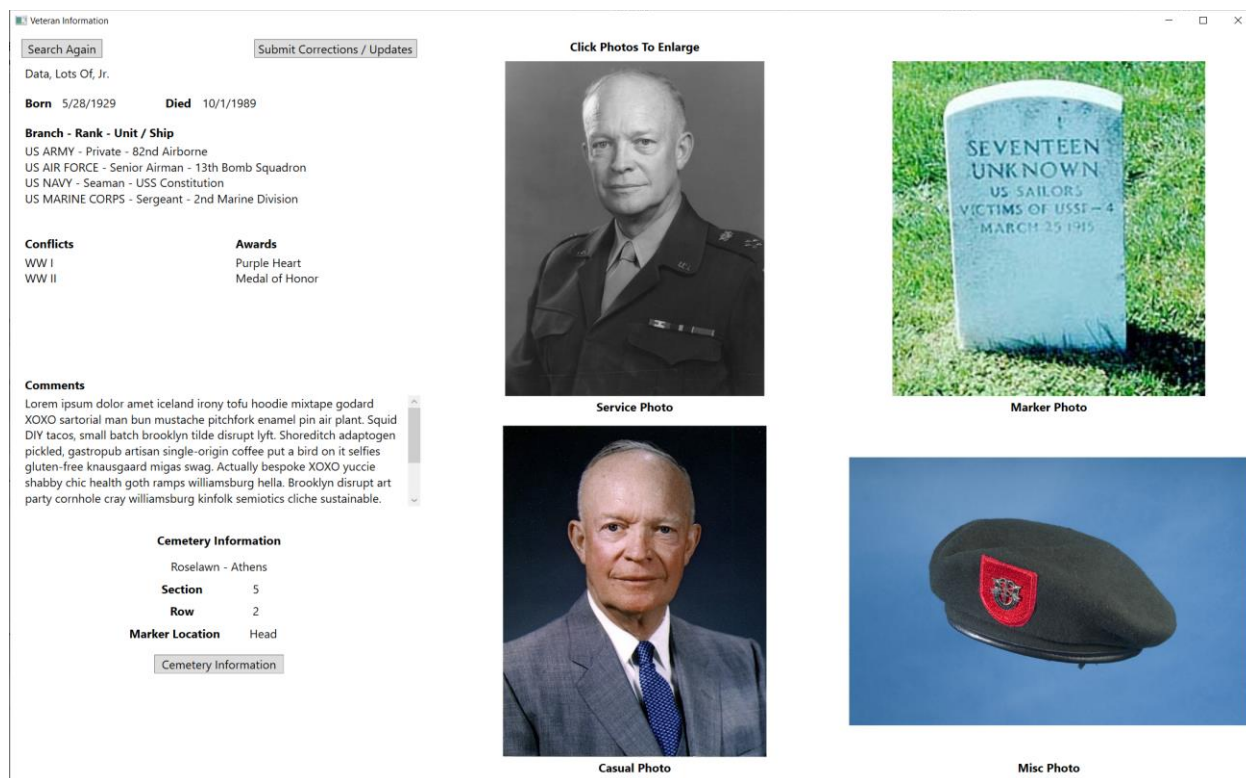
The following diagram shows the layout for the final implementation of the database including V2 additions.



# 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

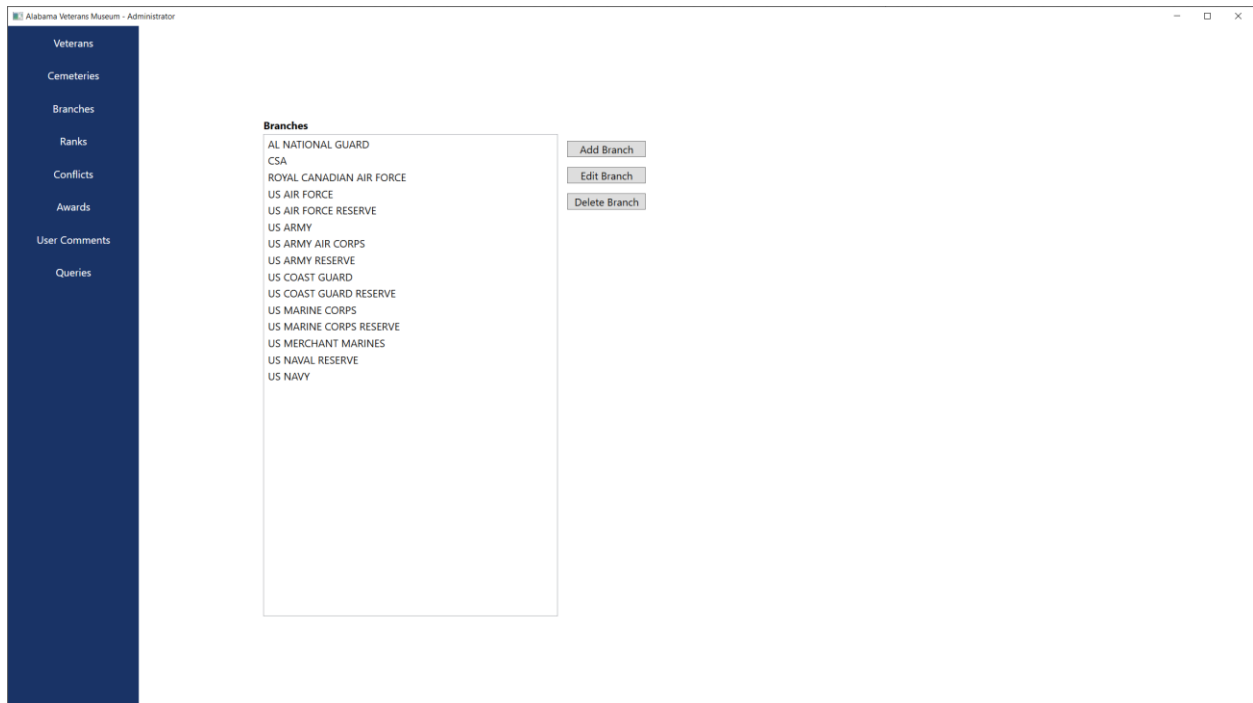
The following figures show the final layout of the administrator application where the client may edit anything he wishes.

The screenshot shows the Alabama Veterans Museum Administrator application. 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 first section, 'Add Single Veteran', has an 'Add Veteran' button. The second section, 'Add Veterans By Cemetery', has a dropdown menu and a 'Quick Add' button. To the right of these is a 'Search To Edit Existing Veteran' section with a text input field labeled 'Enter Last Name' and a 'Search' button.

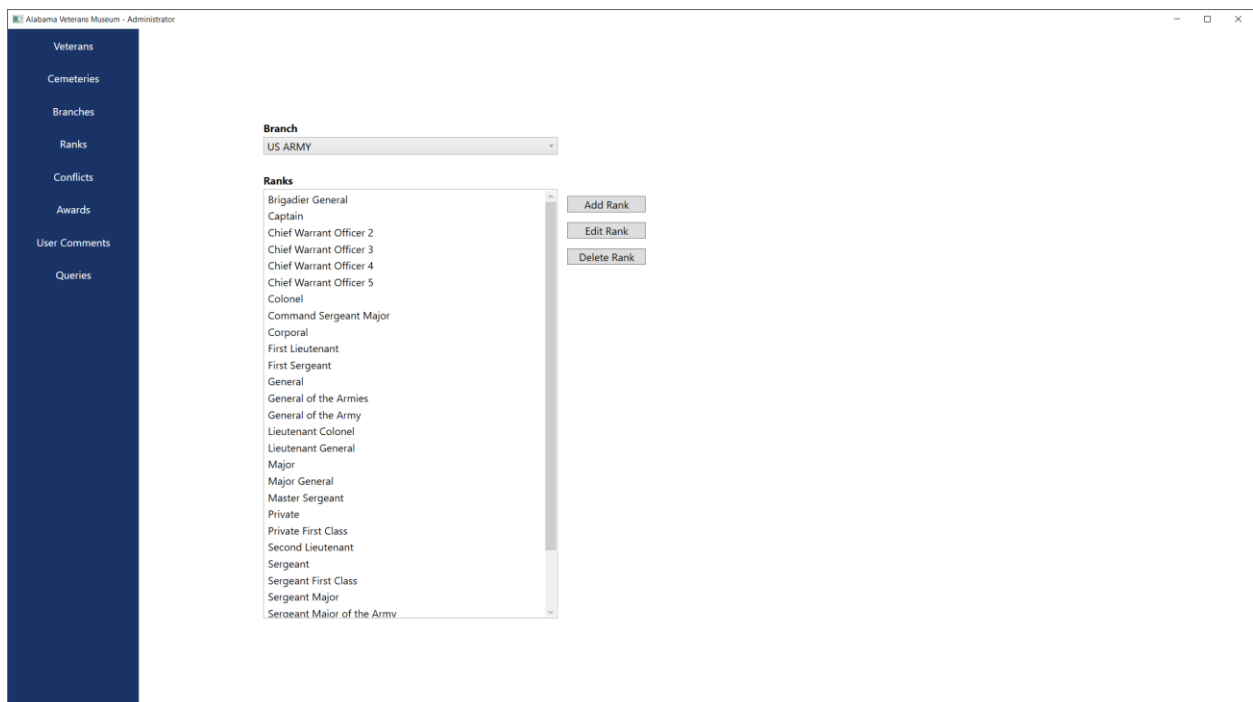
## Admin Application -

The screenshot shows the Alabama Veterans Museum Administrator application with the 'Cemeteries' section selected. The sidebar is the same as in the previous screenshot. 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 the list are three buttons: 'Add Cemetery', 'Edit Cemetery', and 'Delete Cemetery'.

## Admin Application -

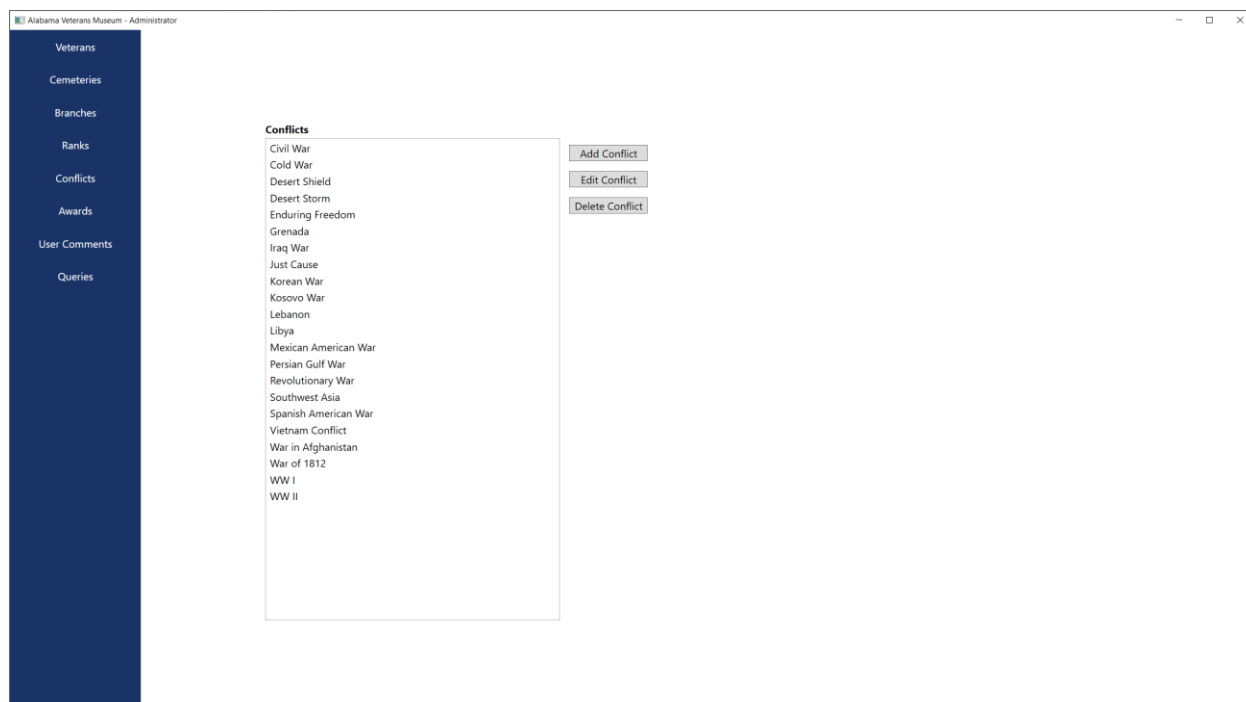


Admin Application -

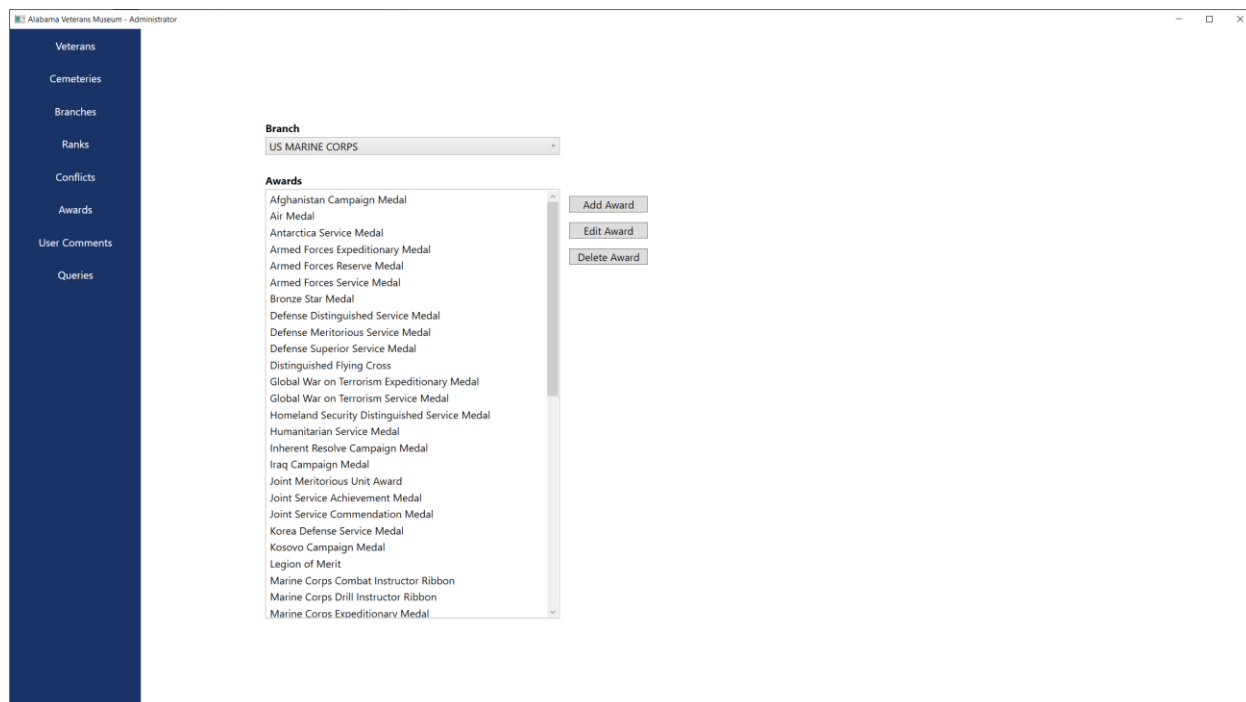


Admin Application -





## Admin Application -



## Admin Application -

Alabama Veterans Museum - Administrator

Veterans  
Cemeteries  
Branches  
Ranks  
Conflicts  
Awards  
User Comments  
Queries

**Corrections / Updates**

Data, Lots Of, Jr. [View Comment](#)

## Admin Application -

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 -

## Version 2 action item solutions

The backup solution is implemented using a batch script and the Windows Task Scheduler in order to back up the SQL data and images to a Google Drive synced folder. This free solution allows for daily offsite backups.

A notification pop-up window was added to notify when data was successfully saved via the Admin App.

The screenshot shows the Admin App interface with a dark blue sidebar containing menu items: Veterans, Cemeteries, Branches, Ranks, Conflicts, Awards, User Comments, and Queries. The main content area has a top bar with 'New Record', 'Save Record', and 'Delete Record' buttons, along with 'Previous' and 'Next' buttons. The form fields include:
 

- Last Name:** tester
- First Name:** test
- Middle Name:** (empty)
- Suffix:** (empty)
- Born:** 1/20/1911
- Died:** 1985
- Branch - Rank - Unit / Ship:** (empty text area)
- Conflicts:** (empty text area)
- Awards:** (empty text area)
- Comments:** (empty text area)
- Cemetery:** 0 (dropdown)
- Section:** 4
- Row:** 4
- Marker Location:** (empty)
- FindAGrave URI:** https://www.athens.edu/

 A 'Save Successful' notification pop-up window is displayed in the center, with an 'OK' button. On the right side, there are photo upload sections for 'Service Photo', 'Casual Photo', and 'Misc Photo', each with 'Set Photo' and 'Delete Photo' buttons.

A "New Record" button was added to clear the form in the Admin App in order to streamline the data entry process.

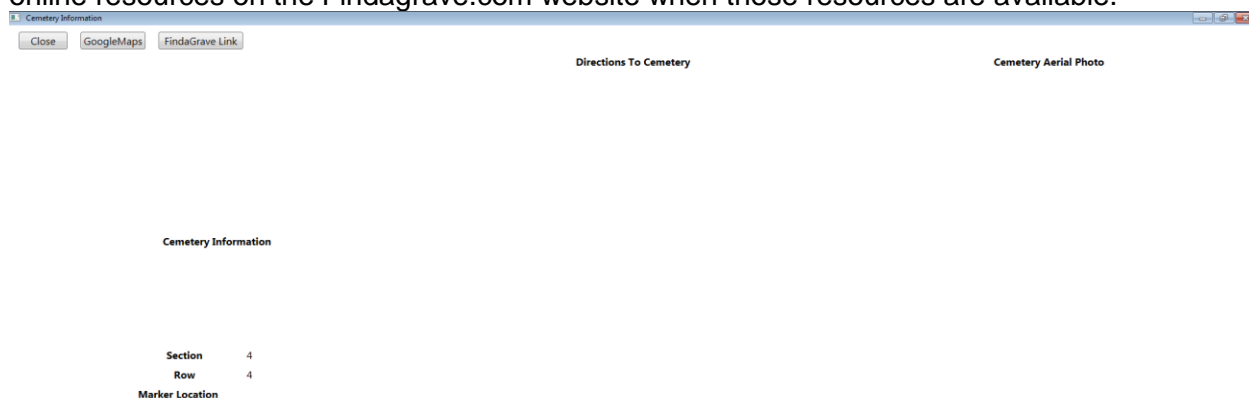
This screenshot shows the Admin App interface with the 'New Record' button highlighted. The form fields are the same as in the previous screenshot, but the 'Save Successful' notification is no longer present. The 'New Record' button is located at the top left of the main content area, next to the 'Save Record' and 'Delete Record' buttons.

The database and program was altered to allow the Date of Birth (DOB) and Date of Death (DOD) data points to be able to accept incomplete data. The datatype was changed from a DATETIME datatype to a VARCHAR datatype in order to allow the user to input a year only or year and month only if data is incomplete.

Corrected Link to user guide on desktop, giving the user access to the version 2 user guide.

Added a Google Maps button to launch an instance of Internet Explorer and navigate to Google Maps using the veteran's cemetery location from the database.

Added Controls in Admin App and Viewer App to allow links to be added to a veterans page to online resources on the Findagrave.com website when those resources are available.



**Cemetery**

**Section**

**Row**

**Marker Location**

**FindaGrave URI**

Moved pictures around in Admin App and Viewer App to repurpose "Marker Pic" to another "Misc Pic" once the findagrave link was implemented.

This screenshot shows the 'Veterans' record form in the Admin App. The form is divided into several sections:
 

- Form Header:** Includes buttons for 'New Record', 'Save Record', and 'Delete Record'.
- Personal Information:** Fields for 'Last Name', 'First Name', 'Middle Name', 'Suffix', 'Test', 'Born' (1919-12), and 'Died' (1955).
- Branch - Rank - Unit / Ship:** A large text area with buttons for 'Add Details', 'Edit Details', and 'Delete Details'.
- Conflicts:** A section with buttons for 'Add Conflict', 'Edit Conflict', and 'Delete Conflict'.
- Awards:** A section with buttons for 'Add Award', 'Edit Award', and 'Delete Award'.
- Comments:** A large text area for user comments.
- Location and Links:** Fields for 'Cemetery', 'Section', 'Row', 'Marker Location', and 'FindaGrave URI', along with a 'Test Link' button.

 To the right of the form, there are four photo thumbnails:
 

- Service Photo:** A black and white portrait of a man in a military uniform.
- Casual Photo:** A color portrait of the same man in a suit.
- Misc Photo:** A color photo of a gravestone with the word 'UNKNOWN' on it.
- Misc Photo:** A color photo of two men in military uniforms.

 Each photo has 'Set Photo' and 'Delete Photo' buttons below it.

## References

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

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