# Library Assistant Management Engine

By Harrison Jansma

Overview

The Harrison Jansma National Library has come under significant amount of growth due to the excellent leadership of its founder. As a result, we have decided to create Library Assistant Management Engine (LAME) to assist some of the more routine tasks that aa librarian faces. Account creation, book checkout/checkin, and fine management will be handled from within this web application.

The Interface

LAME was designed with the user in mind. Each page is custom designed in vanilla HTML and CSS.
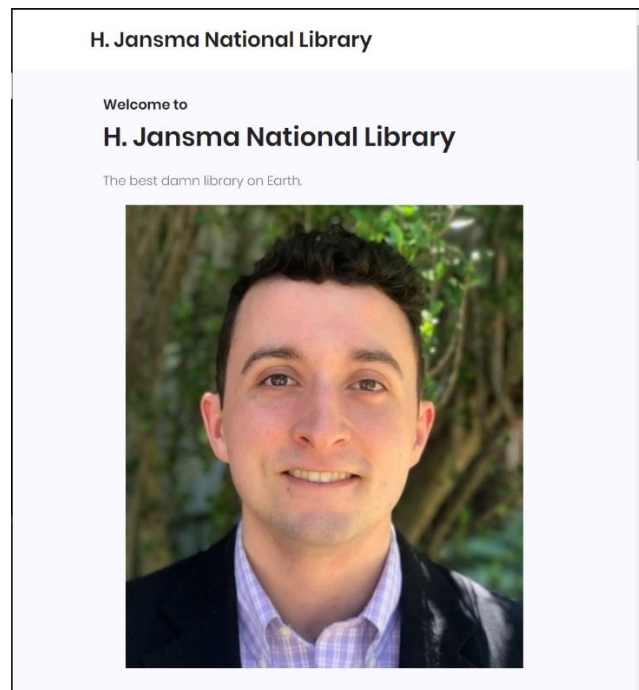
Core Functionality

LAME was designed to automate many of the tasks that are encountered in the daily management of the Harrison Jansma National Library. Such Tasks include:

- New Library Member Creation (and library card number generation)
- Catalogue Search
- Book Checkout
- Outstanding loan search
- Book Checkin
- Fine calculations
- Library Member Search
- Member Descriptions (outstanding loans/fines)
- Fine Payment

System Architecture

LAME is a dynamic web application that utilizes the power of Python, the Django framework, and SQLite to create a one stop shop for librarians. The front end consists of the Django web server and custom designed interfaces by our glorious founder. The back end utilizes the Python programming language and the Django web framework to dynamically update the data we have stored about out library members.

To deploy LAME to production, we simply need to provision an AWS server to run the application and register a domain so that librarians can publicly access the application. In the next version of the application we will implement user authentication, so malicious actors cannot update the system if it is served over the internet.

The Data

The database is stored on an SQLite system, and all of the data queries, deletions, and updates are handled by the Django Framework. Specifically, LAME stores information about Library Members, the Catalogue, and loans/fines outstanding. The tables present in the database are AUTHOR, BOOK, BORROWER, BOOK_LOAN, and FINE.

Some key assumptions about the data. For initial implementations of LAME, we have capped the number of new users we can add to ninety thousand. As we near the mark of one hundred thousand members, we will have to update the business logic within LAME. We also designed the database to retain loans after books are checked-in. This allows for easy reference for future fines.

Milestones

10/25/2019 – Development Begins

10/29/2019 – Testing Begins