Web Service

Radio Station

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CS 425: Final Project – Report

Tech Tycoons - #9

## Problem Statement

### Provide an in-depth, but entertaining, project using a lamp server to build a web radio application that holds a great basis to learn and further develop versatile LAMP technologies.

### Importance

Our Web Service Radio Station allows for the use of all LAMP technologies

* Linux
* Apache
* MySQL
* PHP

With the creation of this project, we both will be able to continue development and implementation outside of our time at Western Illinois University. This provides as a fantastic resume builder and is a project that can be listed in future career aspirations. Along with that, this provides a great way to understand how it is to develop with another partner, and specifically using source control to co-develop and keep track of prior coding.

### Challenges

There are quite a few challenges that existed throughout the creation of this project. To begin, partner development is always difficult, even more so with the current times that are going on throughout the world due to COVID-19. This was combated with using Discord and GitHub to reach our development goals. Time also was an issue, because this is a large final project with also other schoolwork and personal work to take care of. The final issue which we dealt with was combining the technologies we intended to use. AngularJS with HTML had a steep learning curve because of no prior use. While using PHP w/ JavaScript also expanded upon our prior learning in this class, but it was still a steep task to conquer.

## Implementation

A angular template was used, provided by StartBootStrap, a free open source website intended to allow individuals to learn AngularJS and Bootstrap. This aided in using this other technology, but there still was a learning curve in using this development. With AngularJS and Bootstrap, HTML5 and JavaScript were used to fully develop our web application. This includes formatting the webpage along with pulling data and information. MySQL was used in creating a database to hold song information and data. Furthermore, a basic radio player had to be implemented through HTML5 and JavaScript to fully allow a proper user experience. Then, this was deployed using Linux and Apache to allow for the webpage to be accessed using our LAMP servers.

## Architecture

At a base level, AngularJS is used to allow incredible formatting and implementation of a web application. With this, LAMP Technologies (Apache, Linux, MySQL, and PHP) provided all aspects needed to store, pull, and deploy our radio station technology. And at the highest level, HTML5 is used in partner with AngularJS to combine all LAMP technologies and put them into a web application format.

## Technologies Used

### HTML5

used to make the appearance of the webpage with SVG, SVG used to make a music icon

### SVG

used to make some simple graphics for the webpage that relate to the radio station theme.

### Apache

used to assist in this process by securely and smoothly taking the user’s request from their web browser and getting the appropriate results from the request.

### MySQL

used to hold information about songs such as: song ID, song name, song time length, song artist, song filename. Some of the song’s information (Song name, song time length, song artist) will be displayed on the webpage for the user when that song is being played.

### PHP

used to get information from the database and handle any other data processing

### AngularJS/JavaScript

used to display and allow the user to listen to the audio being played. Users will be able to pause audio, adjust their end volume, and resume the radio station show to the current spot it’s at.

## Future Work

Further Implementation

Outside of School

Larger Database of Songs

Better user accessibility

Global deployment

GitHub pages?

## What We Learned

Similar experience to how it is to develop in a workplace

LAMP technologies provide a great basis on a educational and personal level for Server-Side Web Development.

Excited to learn and see how this could be implemented on an Enterprise level.

## Notes

In order to have Dr. George use our php script, a proper LAMP server password is needed.