CSE 499 Senior Project Proposal

Winter 2024 – Alma Camarillo

1. Project Name

Faith Finder – Web Application

2. Group Size / Contact Information

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3. Abstract / Propose

Objective:

Connect people from different faiths to the nearest place of worship in their area – only USA.

Summary:

This project involves the creation of a web-application, where Google Map APIs are implemented to aid the user in finding the nearest place to worship, depending on what religion they are or wish to explore. An additional feature will be implemented using AI to match the user to the best area of worship depending on their answers from a short quiz. The user can choose to stick to the options provided or explore further options by navigating the web app.

4. Background / Prior Knowledge

Scripting Languages – HTML/CSS/Javascript

- Knowledge: Competent
- Application: Scripting Languages and Front-end Web Development
  - Skill Levels Assessment based on icombine.net
  - I have used scripting languages since 2019 for work and academic purposes. I will be using these to aid in the visual design of my Web Application.
- Course Background: WDD130, CSE 210
  - These courses helped me further my understanding of how programming with classes works together with how scripting languages can be used in professional settings to create more sophisticated websites.

C# .Net Framework

- Knowledge: Advanced Beginner
- Application: Building Web Apps using .Net Frameworks, using C# as main coding language.
  - Skill Levels Assessment based on icombine.net
  - I have comfortably learned C# and the ropes of building .Net Framework Web apps. I require further experience to move forward in my proficiency, but I am comfortable enough to use this as my main website framework.
- Course Background: CSE 325, CSE 310

o These courses provided me with the ability to learn how to self-start new challenges when programming. They boosted my confidence in learning ways to research and implement that research to find solutions to the projects I develop. In both classes I learned new programming languages and their syntax, documentation locations, and how to follow reverse engineering methods in future projects when required. The knowledge obtained in these courses is what pushed me further into this section of my education, and what are motivating me to implement two new programming concepts that I will expound on below.

Google APIs / AI

- Knowledge: Novice
- Applications: Implementing Google Map APIs and AI for creating user-matched preference quiz results.
  - o Skill Levels Assessment based on icombine.net
  - o All items I will build upon are items I am an Advanced Beginner on except two: APIs and AI.
- Course Background: CSE 310, GEOL 141, REL 351
  - o These courses introduced my awareness of GIS, APIs, and AI. The different examples of tools showcased by other classmates, together with learning why these technologies are in place, inspired me to create a tool that can connect religious communities and bring them together in this time where human connection is shifting to digital. In hopes of implementing these advances in technology, I wish to create a tool that can help bring the religious communities together, since they too are communities that make our society unique and inspiring.

Initial Research

I have made a collection of the online sources I have been researching, reading, and watching to get the foundations of my project in. A further summary of my findings will be provided as I become more familiar with how all these elements work together.

- APIs
  - o Main Sources:
    - https://www.mulesoft.com/resources/api/what-is-an-api
    - https://console.cloud.google.com/apis/library
    - https://cloud.google.com/monitoring/api/apis-explorer

- Google APIs
  - o Main Sources:
    - https://developers.google.com/apis-explorer

- Google Maps
  - o Main Sources:
    - https://developers.google.com/maps/documentation/embed/get-api-key

- .Net Frameworks and Google Maps
  - o Main Sources:
    - https://www.c-sharpcorner.com/UploadFile/0c1bb2/integrating-google-map-in-Asp-Net-application/
    - https://learn.microsoft.com/en-us/aspnet/core/web-api/handle-errors?view=aspnetcore-8.0
    - https://www.youtube.com/watch?v=vqqKhJfXupk
    - https://www.youtube.com/watch?v=OT838JbQzLg

- https://www.youtube.com/watch?v=yOXQAmYl0Aw most my projects in the degree have been built using Python. This video was the first video to help me translate the concept to C#.

Basic Web App Structure
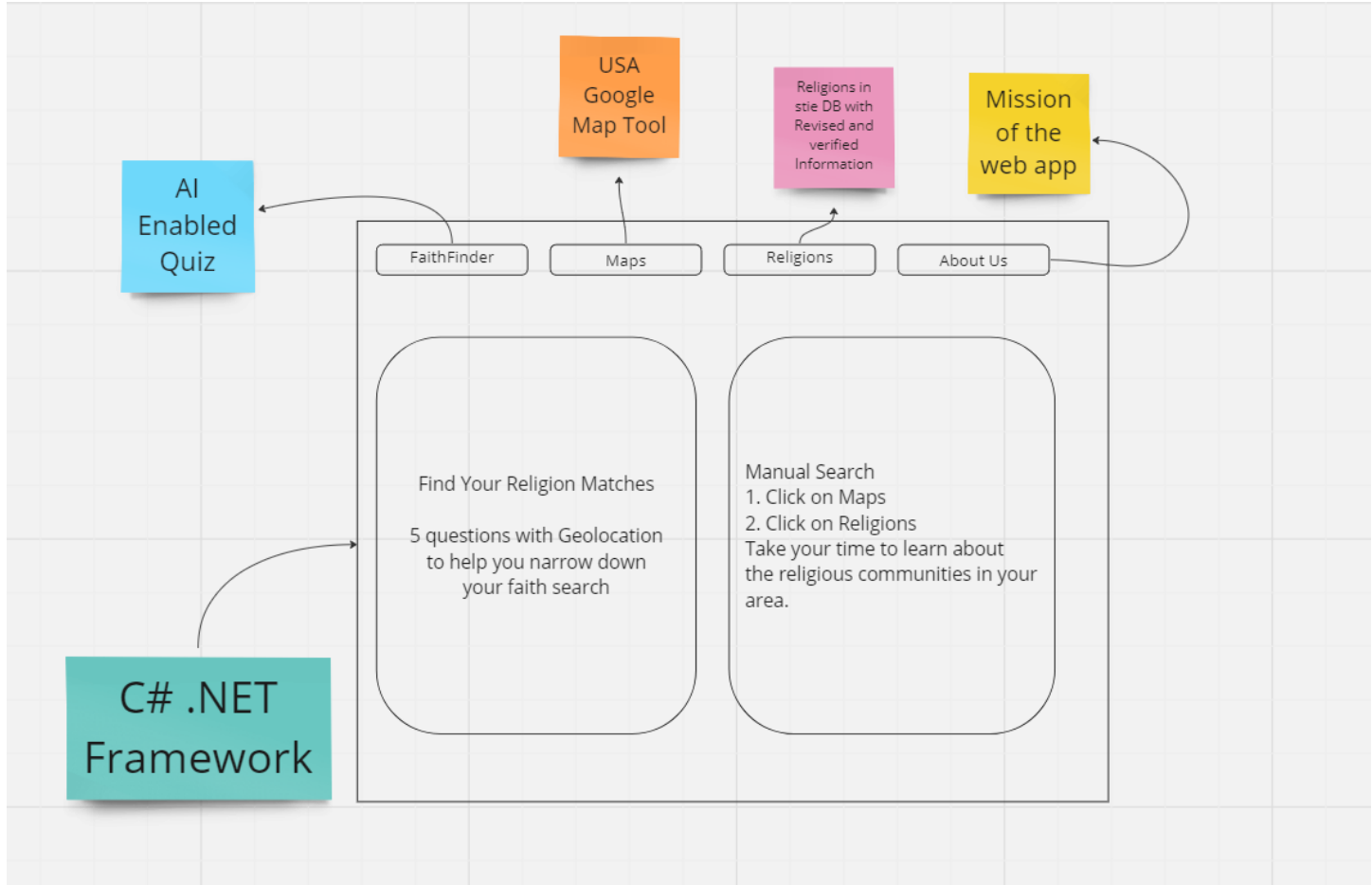
5. Description

Why?

This project was inspired by the "World Religions" class offered at BYU-Idaho. The class expressed the need for religions in this world to be learned, understood, accepted, and respected. Most religious practicing individuals on this planet bring unique traditions that have been essential for the well-being of society. The University of Minnesota made this clear in their article *"Sociological Perspectives on Religion"*:

> *"Religion ideally serves several functions. It gives meaning and purpose to life, reinforces social unity and stability, serves as an agent of social control, promotes psychological and physical well-being, and may motivate people to work for positive social change."*

Having learned that most religions still don't implement technology to connect their followers, I was inspired by the "Find a Church" tool built by the engineers of the Church of Jesus Christ of Latter-day Saints community. This made me think how big of a melting-pot the U.S.A. is. A home of so many cultures, traditions, and religions. And with a daily incoming wave of unique believers that not only are creating their new home, they too, wish to congregate and praise like-minded individuals. So, it clicked to me that the existing advances in technology can be brough together to create a web app at the disposal of Faith seekers not just for the LDS community, but for many other religions that make the U.S.A the country it is today: the land of freedom for all who live in it.

What?

This project will implement the separate and existing web tools that have been created to help users find a religion near them to praise. Currently, there are several *religion-match* quizzes, powered by AI, but I wish to implement my own AI quiz that will narrow down the options for the user instead of defining one specific religion for the user to pick from. This inspires the user to continue feeling in control of what they chose to believe in. Combining this, with an inspired feature like the LDS Church Locator tool – which was the only sophisticated web tool I could find with an embedded Google Map widget – will provide the perfect combination for users to feel more connected in faith.

Religion has been with us since the beginning of time. Technology moves forward at a fast pace, but the problem this project tackles is bringing religion with us in the new era where technology makes our live easier. The gap between society and religion can be once again overcome thanks to technology.

Who?

The target audience are all those who are within the U.S.A wishing to find a place near them to practice their religion, whether it's in a vacation spot, a new home, or even people seeking to have a better idea of what faith to join and where to congregate if they chose to join. Hence the name, "Faith Finder"

Where?

The platform will be implemented as Web Application, only available to U.S.A as the main geolocation spot.

How?

By navigating to the web app, the person will be welcome with two options: AI Generated Quiz, or Manual Navigation.

If they chose the AI generated quiz, they will be able to answer a few questions and with the help of the AI tool, be displayed at the very end a few options of religions the user can pick from to learn and/or visit. They can click on each option provided and find a brief history and explanation of the religions faith with the map locations displayed. An area code would have to be provided for the geolocation to be more precise.

If the user choses the Manual Navigation, they can navigate through the existing options of the Religions DB. There they can take their time to view locations near them by entering zip code information and viewing one religion at a time.

When?

The definition of "done" or "functional release of product" is determined once the web app can display the navigation options of the web app if the user chooses to do manual navigation. The Google Map tool displays on each page the user navigates to wherever it is embedded. The AI religion-quiz-match is functional with less than five questions to help reduce the search scop of the user.

6. Significance

I believe this project will be significant as it will raise awareness to our experts in technology to keep society unified by also bringing religious communities together with the creation of tools like the one, I wish to implement.

I would like to eventually add this project to my resume, but not for lucrative means but more of a experiential learning and service type of project to society as the only intent of this project, is not only to gain graduation credit but also use technology to uplift and bring society together.

7. New Computer Science Concepts

I will be learning how to implement GIS tech, AI, and APIs provided by Google when creating a .Net Framework Web Application. It will be three different technologies that I will learn to implement over the foundation I had from previous coursework on .Net web apps.

8. Interestingness

I am intimidated and curious about GIS and AI working together. I am also curious about how different religions work and which ones are available in the U.S.A. Something unique to me is that I am determined, despite not knowing how some things work. I put myself in the situation and place to learn what I need to. And for this project, I will be learning about new religions, how to present them in a tech form with respect and transparency, leading users to where to find more answers to their faith, and at the end, become an individual that is better educated on what makes the world around her beautiful, diverse, unique, and special.

9. Tasks and Schedule

Research and Requirements – W01-W04 = 26 hrs

Micro-tests and Implementations – W05-W09 = 30 hrs

Test and Integration – W10-W14 = 70hrs

10. Resources

Google Developer Tools – 30-day Access to APIs and other tools – no cost

Microsoft .Net Documentation

IDE - Visual Studio 2022

Programming Language – C#

Platform: Windows

Solution Deployment – Website Form – HTTPS: for public use.

Other resources – see Research items in point 4. Initial Research.