

Capstone Tours Sprint 1

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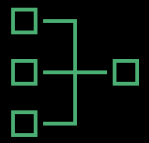
What is Capstone Tours?

Capstone Tours is a mobile-first web application that will allow users to embark on self-guided walking tours of the University of Alabama campus on their own time and at their own pace. We plan to accomplish this by creating a Pokémon Go-like application that shows users a map of the campus, synced to their current location, with significant locations such as campus buildings and landmarks marked on their screen. Users will be able to walk around the campus and learn more about their surroundings through media such as text, video, and audio that will be associated with each location. Users will also be able to embark on guided digital tours that take them through a curated sequence of locations.

Primary Sprint 1 Goals

Backend Database for storing campus locations, with associated text and photos



API for requesting location information from backend database

Basic Frontend that displays map synced to current user position, population with points pulled from backend database

Major Achievements in Sprint 1

Created database schema for storing campus locations, along with photo media

Configured Docker Container for running backend database

Created REST-based API to allow Frontend to request information from Backend

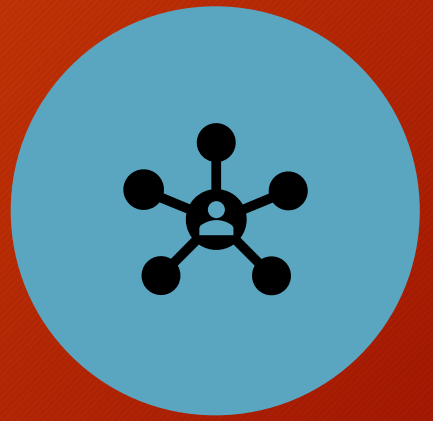
Created frontend map interface using Leaflet

Map Interface is synced to the user's live location and displays points from database

Backlog

API INPOINTS AND IMPROVEMENTS

IMPROVE MEDIA HOSTING, MEDIA SCHEMA



IMPROVE USER INTERFACE

Deferred Tasks

Vulnerabilities that were disclosed by the cyber team must be addressed before remote deployment

Backend Database must be moved to external hosting for testing and deployment on mobile & non-development devices

What did we learn?

- How to create and work within Docker Containers to ensure development environments remain consistent across devices
- How to use Django to create both a backend geo-database and a REST-based API
- How to use JavaScript, as well as the Leaflet library to create an interactive map display
- Practical software development skills, such as team communication, work distribution and development, and project planning

AI Utilization Report

Walter Mink

ChatGPT

Used for research / guidance on project planning

Used for assistance in setting up Docker Container & Django Installation

Used to create placeholder data for testing backend database storage

OpenAI Codex

Wrote Backend / API Documentation Autonomously

Wrote API Integration Tests

Ethan Gaddis

ChatGPT

Used to quickly learn JavaScript for project

Used to learn how Leaflet works

Jacob Childers

ChatGPT

Used for file layout

Used to create documentation

Claude

Used for code fixes

Used to learn more about how to use Docker

Team Contributions

Walter Mink: Backend

- Docker & Django Setup
- Location Database Schema
- Backend REST API

Ethan Gaddis & Jacob Childers: Frontend

- Map Display Prototype
- Live User Location
- Display Locations from Database
- Proximity-Based Interaction