User Documentation for Project: Indy Student Life

Green Team

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Introduction

Indy Student Life is an online platform designed to assist university and college students in Indianapolis, Indiana. Its main goal is to improve students' academic and social experiences by helping them find affordable food options within a 4,000-meter (about 2.5-mile) radius of their campuses and discover suitable study locations nearby. The application features an easy-to-use interactive map that highlights local amenities, enabling students to make quick and informed choices. Built with Leaflet.js, a modern open-source JavaScript library, Indy Student Life effectively integrates interactive maps and utilizes data from OpenStreetMap contributors.

Body of Material

Key Features from the Website:

- **Interactive Map Interface:**
  The application includes an interactive map powered by Leaflet.js, showcasing universities, nearby dining options, and study areas on campus, all represented with unique icons.
- **Geolocation Radius Filtering:**
  Location data is restricted to a 4000-meter radius from the chosen campus, ensuring that users see only nearby and accessible options.
- **Custom Icons for Visual Clarity;**
  Distinct icons from Flaticon represent various location types—campuses, restaurants, and study areas—enhancing the clarity of the user interface.
- **Input Validation and Error Messaging:**
  A strong validation system requires users to select a campus before they can proceed. If a user tries to click on the "Restaurants" or "Study Spots" buttons without making a campus selection, chooses both options without selecting a campus, or skips the campus selection altogether, they will receive an error message prompting them to select one of the options. This approach helps prevent invalid input and ensures that the information displayed is relevant to the user's chosen campus.
- **User-Friendly & Responsive Design:**

The website features a user-friendly and responsive design, built with HTML, CSS, and JavaScript. It operates seamlessly across various devices and screen sizes, ensuring accessibility for students using smartphones, tablets, laptops, or desktops.

- **Lightweight Database Support:**
  All data related to restaurants and study locations is efficiently managed within an SQLite3 database, which is dynamically queried based on the selected campus. This ensures that users receive accurate and relevant information tailored to their choices.

Navigation Overview:

When users access the website, they are first asked to choose a campus from a displayed list. Once a campus is selected, they can:

- Explore affordable dining options within a 2.5-mile radius,
- Find nearby study areas on or around the campus,
- Click on map icons for more information about each location.

If a user tries to access restaurants or study spots without selecting a campus, an error message will appear, prompting them to make a selection.

This system enhances user experience by providing clear guidance and reducing potential confusion.

Details

- **Requirement #1: Display Affordable Restaurants Near Campus**

  Implementation: Restaurants were chosen based on their closeness to specific campuses and were tagged in the SQLite3 database with a distance limit of 4000 meters. A JavaScript radius filter ensures that only relevant dining options are displayed when a campus is selected. Each restaurant marker features icons that indicate price range and availability. When users click on an icon, a pop-up appears, showing the restaurant's name, location, distance from campus, and average cost.

- **Requirement 2: Identify Study Spots on or Near Campus**

Implementation: Study spots like libraries and lounges are stored in SQLite3 and displayed with specific icons once a campus is chosen. By clicking on an icon, users can access extra details such as wifi availability and the distance from campus. This feature enables students to make better choices about where to study, considering both location and available resources.

- **Requirement #3: Open-Source and Ethical Mapping Integration**

  Implementation: Base maps are created with Leaflet.js, utilizing tile data from OpenStreetMap, which is an open-source geospatial database governed by the Open Database License (ODbL). This approach supports the project's commitment to transparency and encourages community involvement in its development.

- **Requirement #4: Input Validation to Prevent Navigation Without Campus Selection**

  Implementation: To prevent misuse or confusion, input validation is enforced through JavaScript. If the user attempts to:

  - Access the map without selecting a campus,
  - Click on “Restaurants” or “Study Spots” without a campus,
  - Select both categories but skip campus selection,

  Then a alert message is displayed:
  "Please select one of these options."

  This guides the user to make a necessary campus selection first, ensuring all subsequent map data is accurate and relevant.

- **Requirement #5: Provide an Interactive, Intuitive Interface**

  Implementation: The interface was created using HTML5, CSS3, and JavaScript to ensure it is both responsive and interactive. Emphasis was placed on color contrast, clear icons, and compatibility with touch screens to adhere to accessibility guidelines. The map interface is designed for easy toggling and intuitive navigation, allowing users to explore with just a few clicks.

Summary

Indy Student Life is an engaging platform designed for students in Indianapolis to easily locate vital resources, such as affordable food options and quiet study areas, close to their schools. Its user-friendly, map-based interface, along with effective filtering and validation features, guarantees that users receive accurate and relevant information. This documentation outlines the entire development process, detailing how each feature was created from the initial concept to the final rollout. Additionally, the app includes strong error handling and is optimized for mobile use, making it even more practical for students.