

Course: SDEV-265 Spring 2025

Instructor: Dr. Steve Carver



# Indy Student Life

Presented by Members from the Green Team:  
Ryan Engelken, Harjot Singh, Maurice Farr, Ann Chen, and Emmanuel Akinseye

# What is Indy Student Life?

- Indy Student Life is an website designed to help college and university students in Indianapolis, IN, discover affordable food options within a 2.5-mile radius of their campus and find suitable study spaces on campus.
- The site features institutions such as:
  - Ivy Tech Community College, Indianapolis
  - Indiana University, Indianapolis
  - Purdue University, Indianapolis
  - University of Indianapolis
  - Marian University
  - Butler University
  - Martin University



(Transfer Options - Ivy Tech Community College, n.d.)

# Group Member Roles (1 of 2)

Position	Names	Description
Team Leader/Programmer	Harjot Singh	As the appointed leader of Team Green, he developed the website project using HTML, CSS, and JavaScript.
Tester/Programmer	Ryan Engelken	He contributed to the coding of the website, ensured its smooth operation, and eliminated any design flaws.
Technical Writer/Support Developer	Ann Chen	She concentrated on writing and documentation tasks while also contributing to the website's coding.

# Group Member Roles (2 of 2)

Organizer/Technical Writer	Maurice Farr	He oversaw the team's completion of project tasks while managing all related materials. In addition, he played a key role in writing and documenting important assignments.
Technical Writer/Support Developer	Emmanuel Akinseye	He wrote code for our website and tested it to ensure proper functionality. He also contributed to the project by completing various writing tasks.

# Appendices

Hardware Components	Software Components	Custom Icons
<ul style="list-style-type: none"><li>Personal laptops or desktops for development and testing.</li></ul>	<ul style="list-style-type: none"><li><b>Programming Languages:</b> HTML, CSS, JavaScript, SQLite3</li><li><b>Mapping Library:</b> Leaflet.js (Open-source)</li><li><b>Database Management:</b> DB Browser for SQLite</li><li><b>IDEs:</b> Visual Studio Code</li><li><b>Version Control:</b> Git &amp; GitHub</li><li><b>Team Collaboration:</b> Discord, Trello, Google Docs</li><li><b>Map Tiles:</b> OpenStreetMap contributors (licensed under Open Database License (ODbL))</li></ul>	<ul style="list-style-type: none"><li><b>Campuses:</b> Freepik via Flaticon</li><li><b>Restaurants:</b> Talha Dogar via Flaticon</li><li><b>Study Spots:</b> Karyative via Flaticon</li></ul>



# Feasibility Study (2 of 2)

Feasibility Type	Is it Feasible?	Assessment
Time Feasibility	Yes	<ul style="list-style-type: none"><li>A functional website is already available, suggesting that development is completed.</li></ul>
Economic Feasibility	Yes	<ul style="list-style-type: none"><li>Total cost of completion: Minimal; the technologies are open-source, and hosting on GitHub Pages is free.</li><li>Estimated Outside Investment: Minimal to moderate; could include domain registration, dedicated hosting, or modest marketing expenses.</li><li>Direct profit is uncertain unless monetized (ads, partnerships with local restaurants, or affiliate links).</li><li>Indirect value includes improved student quality of life and potential collaboration with local universities or businesses.</li></ul>
Alignment with Organizational Objectives	Yes	<ul style="list-style-type: none"><li>Promotes student well-being and success by helping users find affordable food and conducive study environments.</li><li>Could support universities' goals around student retention, engagement, and academic performance.</li></ul>
Integration Feasibility	Yes	<ul style="list-style-type: none"><li>The technology stack is current, open-source, and widely supported.</li><li>The platform is designed to function without the need for complicated integration with university systems, although such integration could improve its effectiveness in future versions.</li></ul>

# Application Component Summary

Successful Implementations:

- Multiple Universities
- Multiple Restaurants
- Multiple Study Spots
- Fully Responsive
- Leaflet (JavaScript library)
- OpenStreetMap
- Custom CSS/Styles

Future Implementations:

- User creation/login
- Ability to favorite restaurants/study spots
- Restaurant logos as icon's
- Filter options

# Risk Identification (1 of 2)

Risks	Description
Cost Risk	Given the nature of the project, which resembles a standard web development site, the risk of incurring excessive costs is minimal.
Schedule Risk	There was a possibility that the project could be delayed due to unforeseen issues, which meant it might not be completed on schedule.
Performance Risk	The likelihood of a project failing to achieve its objectives or perform as anticipated is critical. Consequently, the outcomes would have fallen short of the initial plans.
Operational Risk	Various issues, such as mistakes, equipment failures, or staff-related problems, all of which can negatively impact operations and lead to losses.
Technology Risk	The chosen software for building the website may not have performed as anticipated or might no longer be necessary.

# Risk Identification (2 of 2)

Risks	Description
Communication Risk	Our group has added each other's Discord accounts and phone numbers and meets via Zoom, so therefore there will be little risk of a lack of communication.
Scope Creep Risk	Allowing this type of risk can lead to the project not being aligned with the initial plan due to new unexpected features or requirements that were not identified in the beginning stages of the project.
Skills Resource Risk	The possibility that a project might lack the right expertise, which could cause delays or low-quality results.

# Risk Analysis (1 of 3)

Risk	Probability	Effect
Budget Expenses <b>(Cost Risk)</b>	<b>Medium:</b> To reduce cost risks, our team developed a budget forecast to ensure accurate tracking of expenses.	<b>Serious:</b> Staying within our budget was crucial to avoid delays or the need to reduce features, which could have led to a less effective product.
Unable to Deliver on Time <b>(Schedule Risk)</b>	<b>Low:</b> The deadline was clear, and we held several meetings each week. We also stayed in touch outside of those meetings.	<b>Catastrophic:</b> If we had been late, we would have failed the project and the class.
Poor Performance <b>(Performance Risk)</b>	<b>Medium:</b> Performance testing was initially carried out using loaded tools to optimize the system for effective scaling.	<b>Serious:</b> Performance issues may have resulted in a negative user experience, potentially affecting our ratings due to the website's inefficiency.

# Risk Analysis (2 of 3)

Risk	Probability	Effect
Debugging Not Completed <b>(Operational Risk)</b>	<b>Medium:</b> We tested our website during updates and the addition of new features, which helped us identify any bugs more easily if they occurred.	<b>Serious:</b> A bug could have disrupted our website's functionality; without a functioning website, we would have nothing to showcase.
Cloud Software Failure <b>(Technology Risk)</b>	<b>Low:</b> Google Drive and GitHub have been secured.	<b>Tolerable:</b> If there were problems with Google Drive or GitHub, we still would have the files stored on our personal devices.
Team Members Not Available <b>(Communication Risk)</b>	<b>Low:</b> We exchanged our Discord accounts and phone numbers and connected through Zoom.	<b>Tolerable:</b> We had enough team members to manage the absence of one.

# Risk Analysis (3 of 3)

Risk	Probability	Effect
Lack of Expertise <b>(Skills Resource Risk)</b>	<b>Medium:</b> Our group has discussed our skills assessment in the early stages to ensure all necessary expertise is available. In addition, we plan on establishing clear roles and responsibilities for each group member.	<b>Serious:</b> A lack of necessary skills could have delay the project, especially since we have to complete it in a short timespan.
Project Idea Changes <b>(Scope Creep Risk)</b>	<b>Low:</b> We are set on our idea. We had weighed our options on different project ideas.	<b>Serious:</b> Switching our project would've reset us back to the start.

# Systems Development Life Cycle (SDLC)

1. Planning
  - Identified key user needs (affordable food, study spaces) and established project scope.
2. Analysis
  - Identify key requirements, including map functionality, affordability radius, and responsive user interface.
3. Design
  - Created mockups and selected Leaflet.js for the mapping component; chose technologies for visual and database layers.
4. Coding
  - Developed the interactive map, integrated icons and filtering, and connected the frontend with the static data from SQLite3 exports.
5. Testing
  - Testing was performed to ensure functionality across various browsers and devices, focusing on responsiveness and usability.
6. Deployment
  - Hosted the application using GitHub Pages.
7. Maintenance
  - Planned for periodic content updates and version control via GitHub, with feedback-driven enhancements.

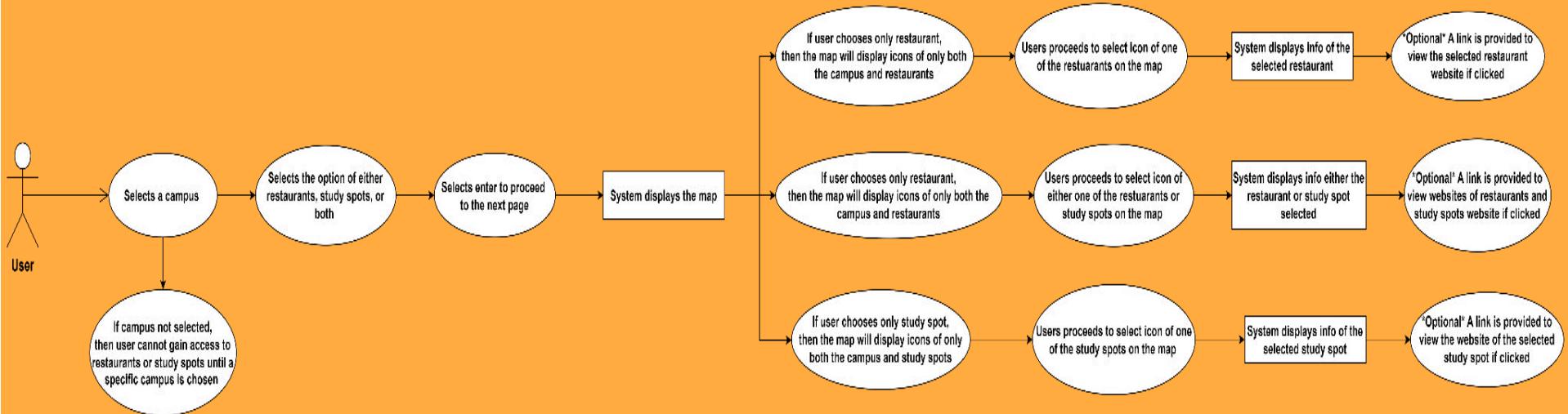
# Project Design (1 of 3)

Architecture Design Diagram	Class/Entity Relationship Diagram	Database Diagram
<p><b>Presenation Layer (User Interface)</b></p> <ul style="list-style-type: none"><li>HTML, CSS, and JavaScript handles user interaction, while interactive maps is handle by using Leaflet.js</li></ul> <p>↓</p> <p><b>Logic Layer</b></p> <ul style="list-style-type: none"><li>JavaScript for user input handling, map filtering, and validation.</li></ul> <p>↓</p> <p><b>Data Access Layer</b></p> <ul style="list-style-type: none"><li>Manages data retrieval and storage using SQLite3</li></ul>	<pre>classDiagram     class Users {         • User ID     }     class Campus {         • Campus ID         • User ID         • Name         • Location     }     class Restaurants {         • Restaurant ID         • Name         • Location         • Price         • Miles Away From Campus         • Campus ID     }     class Study Spots {         • Study ID         • Name         • Location         • Miles Away From Campus         • WiFi Availability         • Campus ID     }      Users "1" -- "1" Campus : 1 to 1 Relationship     Campus "*" -- "*" Restaurants : 1 to Many Relationships     Campus "*" -- "*" Study Spots : 1 to Many Relationships</pre> <ul style="list-style-type: none"><li>A campus can have multiple associated restaurants and study spots.</li><li>A user can select a campus to view associated restaurants and study spots.</li></ul>	<pre>databaseDiagram     table Campus {         • Campus ID         • Name         • Location     }     table Restaurants {         • Restaurant ID         • Name         • Location         • Price         • Miles Away From Campus         • Campus ID     }     table Study Spots {         • Study ID         • Name         • Location         • Miles Away From Campus         • WiFi Availability         • Campus ID     }     table Users {         • User ID         • Campus ID     }</pre>

# Project Design (2 of 3)

## Use Cases/Sequences Diagram

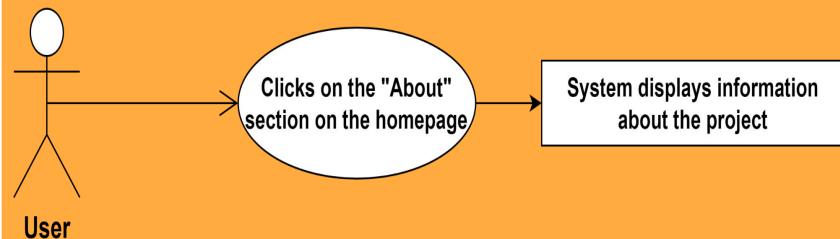
### 1. Selecting Campus to View Restaurants & Study Spots



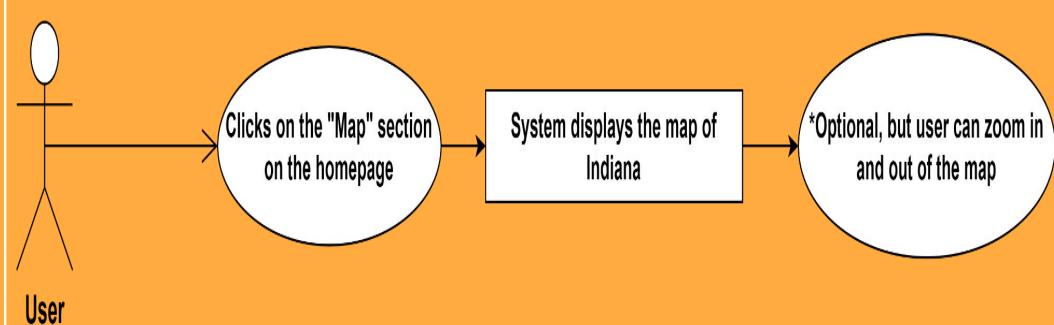
# Project Design (3 of 3)

## Use Cases/Sequences Diagram

### 2. Viewing the “About” Section



### 3. Viewing the Map



# Implementation Plan (1 of 2)

The main methodologies considered for this project include:

- Waterfall Methodology
  - Best for structured, short-term projects but limited for dynamic, evolving tasks (GeeksforGeeks, 2024).
- Agile Methodology
  - It emphasizes iterative development and flexibility, fostering continuous improvement. However, its lack of strict deadlines can sometimes result in unclear project direction and vision (GeeksforGeeks, 2024).
- Lean Methodology
  - It aims to enhance value by reducing waste, allowing teams to execute projects more effectively. However, it can struggle with insufficient documentation of business goals, which may lead to confusion and misalignment (GeeksforGeeks, 2024).

# Implementation Plan (2 of 2)

## Chosen Strategy: Agile Methodology

- We chose Agile Methodology for its flexibility and collaboration, which suited our project's changing scope and timeline.
- Tools like Trello, GitHub, and Discord helped us manage tasks, control versions, and communicate effectively.
- Agile allowed us to adapt quickly and assign tasks efficiently throughout the project.
- Although we considered Lean for its focus on essential features, Agile was more suitable for our academic environment.
- We still applied Lean principles by emphasizing quick value delivery and minimizing unnecessary features.

# Website Demonstration (1 of 9)

- Website Homepage/Frontpage
  - It provides a selection of college to consider, along with various location options like restaurants and study spots.

The screenshot shows the homepage of the **Indy Student Life** website. The background is a photograph of a city skyline at sunset or sunrise, with buildings silhouetted against a vibrant orange and yellow sky. At the top left is the **Indy Student Life** logo, which includes a small icon of a person. At the top right are links for **About** and **Map**. A dark overlay box contains the text: **Easily Locate Budget-Friendly Restaurants & Study Spots Near Universities and Colleges of Indianapolis, IN**. Below this are two side-by-side dropdown menus. The left menu is titled **Choose Your Campus** and lists:

- Indiana University, Indianapolis
- Ivy Tech Community College, Indianapolis
- Purdue University, Indianapolis
- University of Indianapolis
- Marian University
- Butler University
- Martin University

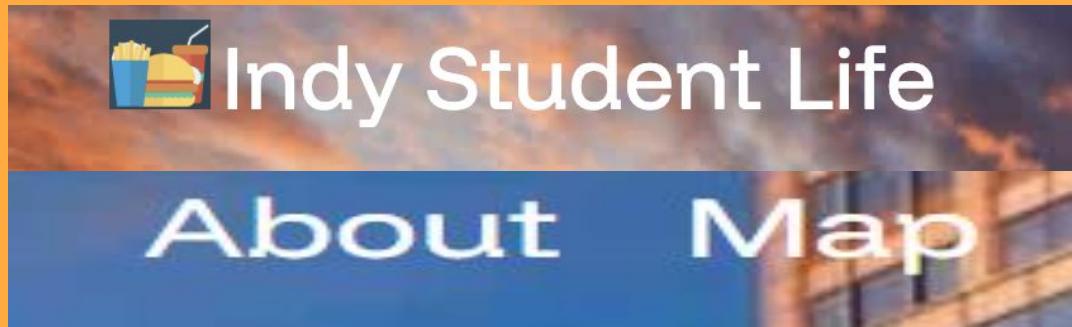
The right menu is titled **Choose Your Location** and lists:

- Restaurants
- Study Spots

At the bottom of the dropdowns is a small input field with the placeholder text **Enter**.

# Website Demonstration (2 of 9)

- Homepage
  - The homepage features three sections:
    - About
    - Map
    - Indy Student Life Logo
- Indy Student Life Logo
  - To return to the homepage, simply click on the Indy Student Life logo.



# Website Demonstration (3 of 9)

- Intro
- Select Your Campus
  - Only one campus can be selected at once

Easily Locate **Budget-Friendly Restaurants & Study Spots**  
Near Universities and Colleges of **Indianapolis, IN**

**Choose Your Campus**

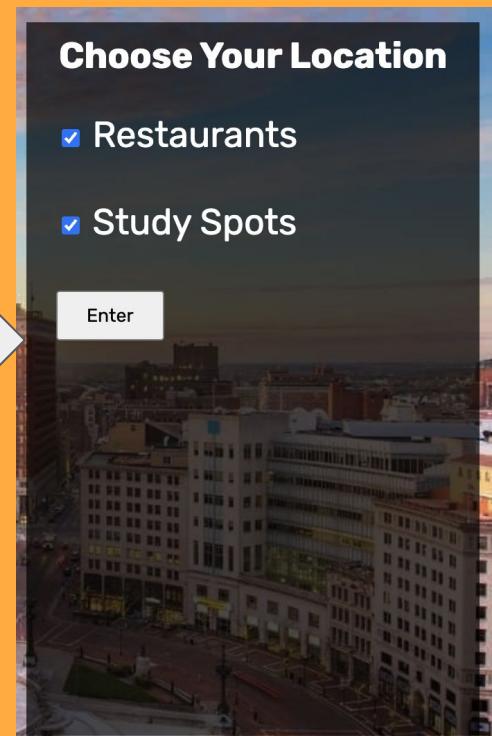
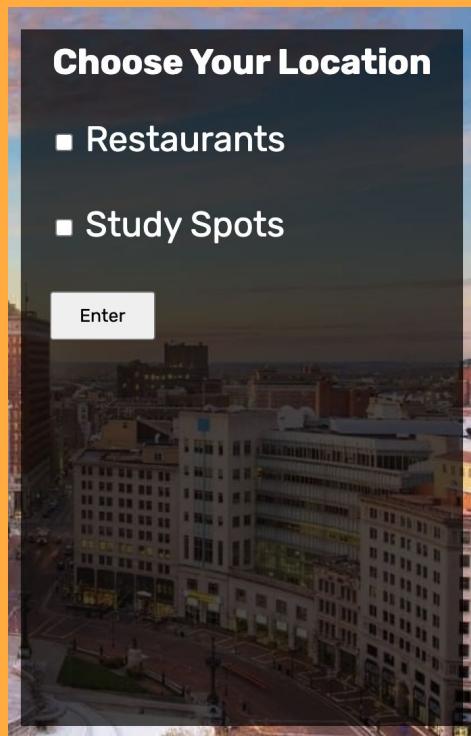
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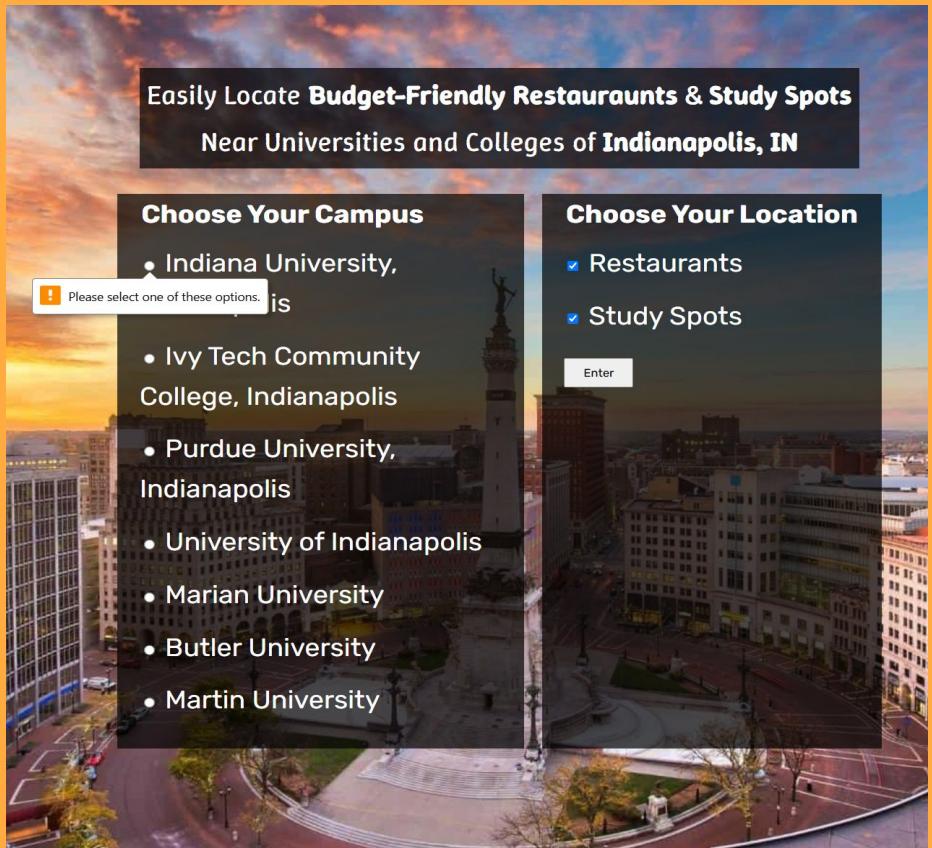
# Website Demonstration (4 of 9)

- Choose your Location
  - When choosing your locations, you are able to choose one or both of the options at once



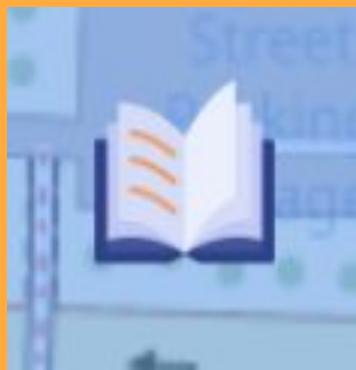
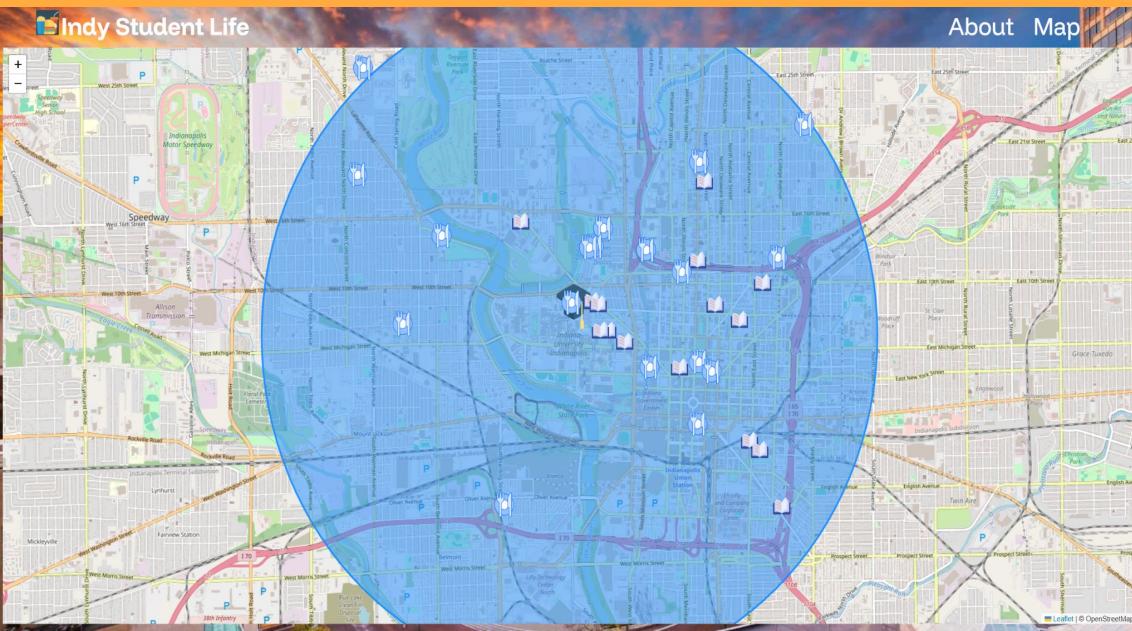
# Website Demonstration (5 of 9)

- Validation Testing:
  - 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.

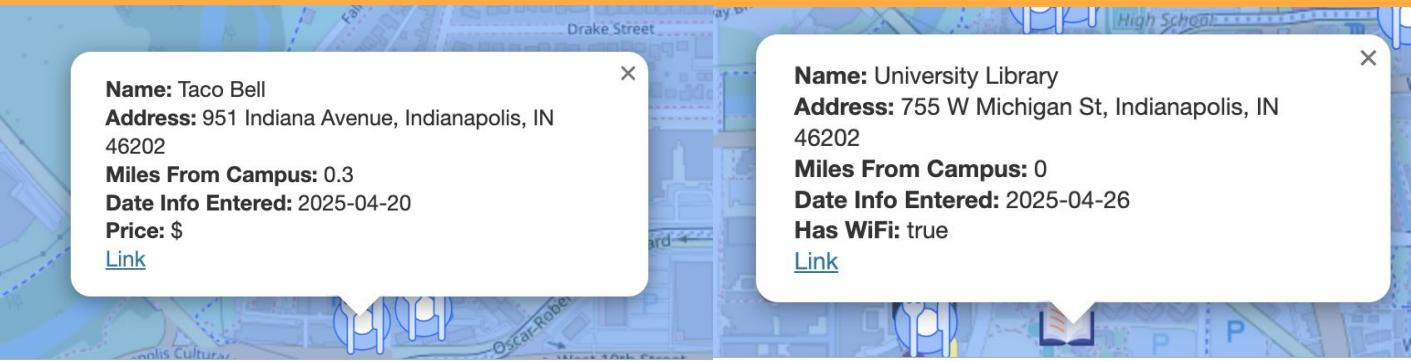


# Website Demonstration (6 of 9)

- Once you press enter, a map will appear showing icons for the:
  - Campus
  - Restaurants
  - Study Spots



# Website Demonstration (7 of 9)



Screenshot of the Taco Bell website for the location at 951 Indiana Avenue, Indianapolis, IN 46202. It shows the address, phone number (317) 632-4238, drive-thru, open late, and delivery options. A "Start Your Order" button and a "Get Directions" button are visible. Below this, a map shows the location relative to downtown Indianapolis and surrounding landmarks like Ensign-Graham Oval and Martin Park.

Screenshot of the Indiana University Indianapolis University Library website. The page header includes the university logo, a search bar, and links for OneSearch, IUCAT, Databases, Journals, Articles, and Site. Below the header is a large image of the library building with students outside. A sidebar on the right lists resources for Undergraduate Students, Graduate/Doctoral Students, Off-Campus Faculty/Staff, Alumni/Community Members, and Purdue Affiliates. At the bottom, there are sections for NEWS, EVENTS, and MEET THE LIBRARY, each featuring a thumbnail image and a brief description.

- Examples of what happens when you press on the icons

# Website Demonstration (8 of 9)

- **About Page**

- Provides an overview of the website project, including details about the class course and affiliated college (Ivy Tech).
- Lists the group members involved in the project.
- Highlights the technology components utilized in the project.

The screenshot shows the 'About' section of the website. The background features a sunset over a city skyline. The text is organized into sections: 'Goal', 'About', 'Technology Used', and 'Links'. The 'Goal' section states the project's purpose: to help students find affordable food and study spots. The 'About' section credits Team Green from Ivy Tech Indianapolis' SDEV 265 class. It also mentions the use of Leaflet.js for maps and FlatIcon for custom icons. The 'Technology Used' section lists programming languages (HTML, CSS, JavaScript, SQLite3), IDEs (Visual Studio Code, DB Browser for SQLite), and other software (Git/Github, Discord, Trello, Google Docs). A link to the GitHub repository is provided at the bottom.

**Goal**

The goal of Indy Student Food is for university and college students of Indianapolis, IN to conveniently locate affordable food options and study spots within a 4000 meter (2.5 mile) radius of their respective campus.

**About**

Indy Student Life was created by Team Green of Ivy Tech Indianapolis' SDEV 265 - Systems/Software Analysis and Projects Class. The project was tested, coded, and developed by students **Ann, Emmanuel, Harjot, Maurice, and Ryan**.

The project utilizes [Leaflet.js](#)- an open-source JavaScript library that implements interactive maps. Its base map tiles are provided by [OpenStreetMap](#) contributors. Map data © [OpenStreetMap](#) contributors, licensed under the [Open Database License \(ODbL\)](#). Custom Icons Provided by [Flaticon](#): [Campuses: [Freepik](#), Restaurants: [Talha Dogar](#), Study Spots: [Karyative](#), Favicon: [DinosoftLabs](#)]

Link to Github: [Indy Student Life](#)

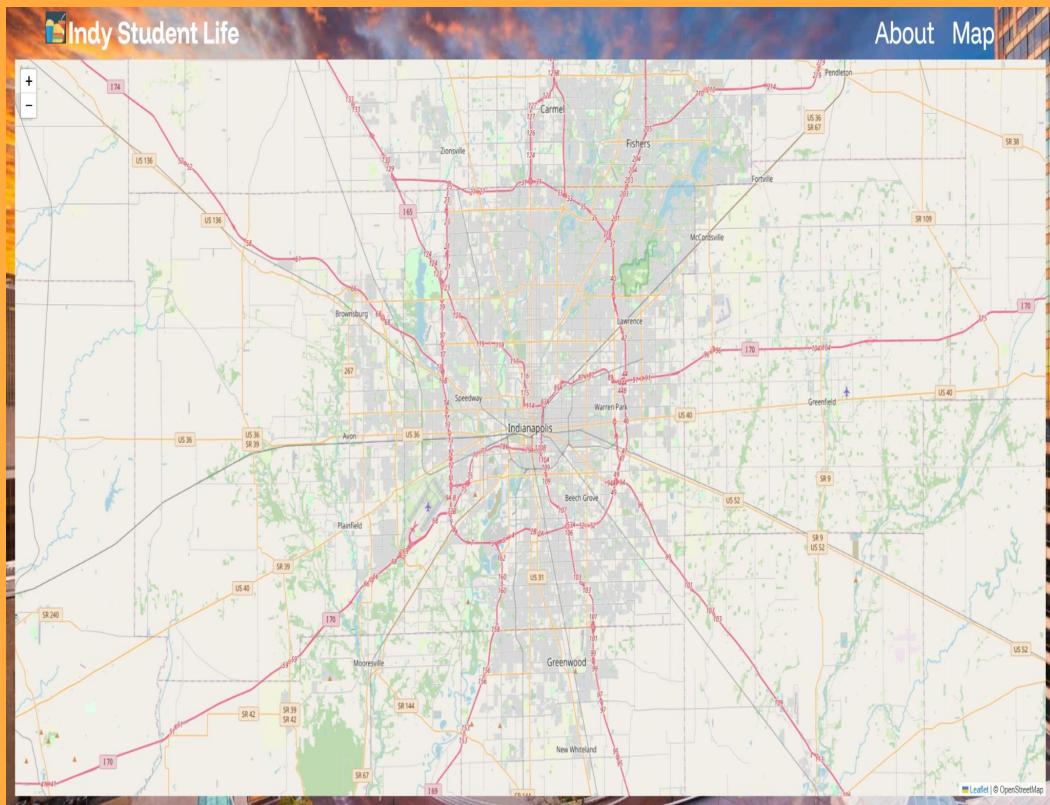
**Technologies Used**

Programming Languages: HTML, CSS, JavaScript, SQLite3  
IDEs: Visual Studio Code, DB Browser for SQLite  
Other Software: [Git/Github](#), Discord, Trello, Google Docs

# Website Demonstration (9 of 9)

- **Map Page**

- Shows the state of Indiana, allowing users to easily navigate the area.
- Users have the ability to zoom in and out for a closer look at specific locations.









The End

# Work Cited

- America. (2025). *Ironworks Hotel Indy*. Expedia.com. <https://www.expedia.com/Indianapolis.dx178266>
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# Questions?