

PROJECT PROPOSAL

Human-Computer Interaction

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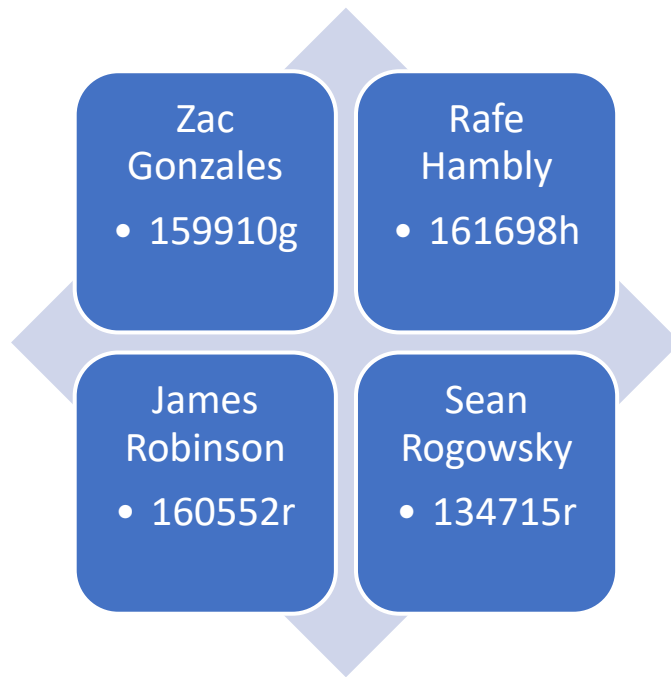
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1. Team Members



2. Our Application

Overview: Business Hours Buddy is a revolutionary application designed to address the frustration of inconsistent and inaccurate business hours information online. Our app is a comprehensive solution that aggregates and displays up-to-date business hours for various establishments, helping users easily find accurate information and make informed decisions. Business Hours Buddy not only benefits consumers but also empowers businesses to manage and update their hours, promoting transparency and reliability.

Key Features:

1. **Scraping and Aggregation:**
 - Business Hours Buddy utilizes a web scraper to collect business hours data from multiple sources, including business websites, crowd-sourced user reports and social media platforms.
 - The app aggregates this data, ensuring users have access to the most comprehensive and accurate information available.
 - *Note: This feature is out of scope for this project but included for completeness.*
2. **Reliability Indicator:**
 - Business Hours Buddy employs a reliability indicator to assess the accuracy of displayed business hours.
 - Users can quickly gauge the trustworthiness of the information, helping them plan their visits with confidence.
3. **User-Generated Updates:**
 - Users are encouraged to report inaccurate business hours through the app.
 - When discrepancies are identified, Business Hours Buddy temporarily marks the hours as unreliable until verified updates can be made.
4. **Business Hour Management:**
 - Business owners can easily input and update their business hours directly within the app.
 - When a business enters its hours, the app prominently displays a "Verified by Business" badge to indicate the most accurate source.
5. **Search and Filter Options:**
 - Users can search for specific locations by name, browse by category (e.g., restaurants, retail stores, healthcare), or utilize geolocation to find nearby establishments.
 - The intuitive interface makes it effortless to find the information you need.

How it Works:

- **User Perspective:**
 - Upon opening the app, users can search for a specific business or category.
 - The app displays a list of businesses with their hours, accompanied by reliability indicators.
 - Users can report inaccuracies, ensuring the community helps maintain accurate information.
- **Business Owner Perspective:**
 - Business owners can create profiles for their establishments within the app.

- They can easily input, edit, and update their business hours.
- Business owners receive a "Verified by Business" badge, enhancing their credibility.

Benefits:

- **For Consumers:**
 - Easily access accurate business hours information.
 - Make informed decisions when planning visits.
 - Contribute to the accuracy of information by reporting discrepancies.
- **For Business Owners:**
 - Increase trust and transparency with customers.
 - Ensure potential customers have access to the correct business hours.
 - Enhance the credibility of their establishment by verifying their hours.

3. Similar Products and Differences

There are several similar products and services in the market that provide information about business hours and locations. A few examples along with their key differences are:

1. **Google Maps:**
 - **Key Feature:** Google Maps provides business information, including hours of operation, location, and user reviews.
 - **Differences:** While Google Maps is a popular navigation and mapping service, it may not always have the most up-to-date business hours, and the reliability of the information can vary.
2. **Yelp:**
 - **Key Feature:** Yelp offers business listings, including hours, user reviews, and ratings.
 - **Differences:** Yelp focuses on user-generated content, which can be helpful for reviews and recommendations, but the accuracy of business hours may rely on user contributions.
3. **Facebook:**
 - **Key Feature:** Facebook Pages for businesses often include their hours of operation.
 - **Differences:** Business hours on Facebook are typically managed by the business itself, but the accuracy depends on how frequently the business updates its page. Short-notice hour changes may also only be posted as status updates.
4. **TripAdvisor:**
 - **Key Feature:** TripAdvisor provides business information, including hours, reviews, and ratings.
 - **Differences:** Similar to Yelp, TripAdvisor relies on user-generated content, which may not always guarantee the most accurate or up-to-date information.
5. **Business-specific Apps** (e.g., Starbucks, McDonald's):
 - **Key Feature:** Many large chains have their own apps that display business hours and offer mobile ordering.
 - **Differences:** These apps focus exclusively on specific chains and may not cover a broad range of businesses.

Differences Summary:

- **Data Sources:** The accuracy of business hours in these services can vary depending on the source of the information (user-generated, business-provided, web scraping, etc.).
- **Business Control:** Services that allow businesses to manage their information, like Facebook, give more control to the business owners.
- **User Reviews:** Yelp and TripAdvisor prioritize user reviews and ratings alongside business information. This is not the focus of this app.
- **Navigation:** Google Maps integrates business information into its navigation service.

Business Hours Buddy differentiates itself by focusing on aggregating accurate business hours, offering a reliability indicator, allowing users to report inaccuracies, and giving businesses a platform to manage and verify their hours. This unique combination of features aims to provide users with the most reliable and up-to-date information about business hours.

4. Applying HCI Theory

Business Hours Buddy seeks to incorporate theories and best practices of computer interaction and interface design at every step in the design process and throughout every part of the application. By adopting a user-focused, agile development cycle and utilizing human psychology in our interface metaphors we hope to provide a user experience that is both easy to learn and provides a depth of functionality without impeding the aesthetics of the presentation.

Development Philosophy:

- **Agile:** As a small team with a limited development time frame, each member takes on tasks as needed so work is free-flowing and optimized for individuals.
- **Adaptive:** To create the best end-product possible, our development plan must be flexible and able to change as we discover more about what works best.
- **User-Oriented:** We want to design a product that users will love using. To do this, we will involve users through testing and feedback at every stage of development.
- **Iterative:** To complement our user-focus and adaptability we want to have a tangible product which we can use for demonstration and analysis at the end of each sprint.

Guiding Principles:

- **Simplicity:** Business Hours Buddy should show the user only what they need to see at any point while using the app. This helps avoid overcrowding and contributes to first-time learnability.
- **Consistency:** All of our design choices should be intentional decisions that we can stick with across all aspects of the product so that the user experience feels intuitive.
- **Accessibility:** We have not succeeded in our development of Business Hours Buddy if certain groups are excluded from using it for reasons of disability or impairment.

Design Framework:

- **Instructive Interactions:** Users will interact with Business Hours Buddy in an instructive style. The app will show users what they ask for and give them the freedom to explore features independently.
- **Familiar Iconography:** While a direct interface metaphor may not be practical for an app of this functionality, aspects of our design will use symbols which have been used in established metaphors familiar to users – for example a magnifying glass on the search bar.
- **Tangible Feedback:** When users interact with the app, they should feel the impact of their actions. Each tap or click of the UI will be accompanied by a visual and auditory response which gives the users the feeling of physically interacting with the product.

By following these simple and concrete pillars of design, we can ensure that Business Hours Buddy reaches its full potential as an interactive user experience.

5. Programming Framework & Language

Our Platform Framework:

Business Hours Buddy will primarily be built using the standard HTML, CSS, and JavaScript web languages and serviced in the back end using SQL and more specifically a PostgreSQL relational database management system (RDBMS). In an effort to ensure 24/7 upkeep and accessibility, the open-source platform Budibase will be used as the host for Business Hours Buddy.

Budibase will not only allow our team to quickly push updates, implement new features, and effectively manage user information, but also help support both Consumers and Business Owners as efficiently and smoothly as possible. Thanks to integrations via Budibase, users will be able to report discrepancies, provide accurate updates, and see the updated results in minutes. Feedback provided by the Business Hours Buddy discrepancy reports will be directly tied to our reliability indicator algorithm which is what allows for new information provided from that report to become directly reflected on the platform.

Framework Alternatives:

Prior to selecting the frameworks and Budibase as the base for Business Hours Buddy, our team conducted a Design Sprint to evaluate our alternatives. The two primary alternatives that were looked into were:

- **Electron:** Electron is an open-source web framework that runs via the Chromium browser engine and Node.js. Electron would have enabled us to create a desktop app that could be easily scaffolded and scaled to suit our needs. Despite Electron being able to provide us with some support and a framework to build Business Hours Buddy, Electron is mainly geared toward developers looking to publish the app on device app stores and have frequent updates. Given the scale and requirements for Business Hours Buddy and the short project timeline, our team came to the conclusion that although Electron is a powerful tool, it is not necessary for our development needs.
- **xAMP Stack:** The xAMP stack is a software bundle composed of open-source software that can be used to create web applications. It consists of Apache, MySQL, and PHP as the web server, database server, and programming language respectively. With either Linux, Windows, or macOS being the L/W/M to replace the x in xAMP depending on the operating system used. Although an older bundle, the xAMP stack is well-tested and highly effective when used for web development. However, as the app requirements change depending on the operating system used in the stack, this limits how wide spread the availability of Business Hours Buddy would be. Therefore, we needed to use a more universal framework/stack for our platform.

6. Evaluation Method

Evaluating the user experience (UX) of Business Hours Buddy is essential to ensure the app's usability, effectiveness, and overall satisfaction of its users. To comprehensively assess the app's performance, we will employ a combination of quantitative and qualitative methods, including First Click Testing, Usability Testing, and Satisfaction Surveys.

First Click Testing (Quantitative): First Click Testing focuses on the initial interaction users have with the app given a specific task up-front. This method supplies valuable quantitative data to assess the clarity of the app's design and its ability to guide users down the right path. Key points to evaluate include:

- **Task Success Rate:** Measure the percentage of users who complete essential tasks, such as searching for business hours or reporting inaccuracies.
- **Time on Task:** Analyze how long it takes users to find the information they need, identifying potential bottlenecks in navigation.
- **Frequency of Misclicks:** Evaluate the occurrence of unintended clicks or actions during the first interaction, pinpointing areas of confusion.

Usability Testing (Qualitative): Usability Testing delves deeper into the user experience, providing qualitative insights into the end-to-end interaction with Business Hours Buddy. This method involves observing users as they complete various tasks within the app and gathering their feedback. Key aspects to evaluate include:

- **Task Completion:** Assess whether users can effortlessly navigate through the app to perform essential tasks, such as searching for business hours or reporting inaccuracies.
- **Navigation Flow:** Identify any roadblocks or user confusion in the app's navigation, ensuring a seamless user journey.
- **User Behavior and Habits:** Observe how users naturally interact with the app and identify any patterns or behaviours that can inform design enhancements.

Satisfaction Surveys (Qualitative): Satisfaction Surveys provide a real-world assessment of how users perceive Business Hours Buddy after extended use. These surveys capture valuable qualitative data on user satisfaction, user engagement, and any potential pain points. Key aspects to evaluate include:

- **Overall Satisfaction:** Assess users' overall satisfaction with the app, including their likelihood to recommend it to others.
- **Feature Preferences:** Understand which features users find most valuable and which ones may need improvement or further development.
- **User Feedback:** Gather open-ended feedback from users about their experiences, suggestions for enhancements, and any challenges they encountered.

7. Team Roles

Roles and requirements will be determined during the Discovery and Definition phases.