Lab 2 Itiner-Ease

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3. Product Requirements

3.1 Functional Requirements

3.1.1 User Interface

3.1.1.1 User Authentication

3.1.1.1.1 Registration page (O: William P.)

- The registration page shall display input fields for Role, Name, DOB, Phone Number, Email Address, Password, and Confirm Password.
    - The role chosen must be selected before the input fields can be filled.
    - The system shall require the DOB input field only for Travelers and Local Experts, not Businesses.
    - The system shall validate that the values entered in the “Password: and “Confirm Password” fields match before allowing the user to complete registration.
- The system shall require that the user registration inputs meet all necessary security and validation requirements.
    - The password must be at least 8 characters long.
    - The email address must be in a valid format (e.g.,user@example.com).
    - The system shall check that the email address entered is not already associated with an existing user account.

3.1.1.1.2 Login page (O: William P.)(M: Jandra)

- The login page shall display input fields for Email Address and Password.
- The login page shall allow the user to navigate to the registration page if they do not have an account.
- The system shall grant access when the user provides an email and password that match an existing account.
    - The system shall query the database to find an exact match for the provided email.
    - The system shall verify that the provided password matches the stored password for that email.
    - If both fields match, the system shall allow access.
- The system shall deny a login attempt if the email is not found in the database.
    - The system shall inform the user that the email address is not associated with an account.
    - The system shall prompt the user to create a new account.
- The system shall deny a login attempt if the email exists but the password is incorrect.
    - The system shall inform the user that the password is incorrect.
    - The system shall prompt the user to retry.

3.1.1.2 Traveler

3.1.1.2.1 Traveler Dashboard (O: William P.)

- The system shall display a home page for traveler users which displays a welcome card, their upcoming itineraries, and their preference profiles.
    - The itinerary and preference profile cards shall contain links to the itinerary and preference profile index pages, respectively.

3.1.1.2.2 Preference Profile (O: Crystal R.)

The Preference Profile feature allows travelers to create, view, and manage personalized travel preference sets. These preferences are used by the AI to generate personalized itineraries.

3.1.1.2.2.1 Preference Profile Index (O: Crystal R.)

- The system shall display a list of all preference profiles associated with the traveler.
- The system shall display the following information for each preference profile:
    - Profile name
    - Chosen preferences
- The system shall provide an option to create a new preference profile.
- The system shall allow the traveler to select a profile to view, edit, or delete.

- The system shall ensure that travelers can access only their own profiles.
- If no profiles exist, the system shall display a message indicating that no profiles are available.

3.1.1.2.2.2 Preference Profile Creation (O: Crystal R.)

- The system shall provide a Preference Profile Creation page that uses a tabbed interface to organize the different types of traveler preferences.
- The system shall require the traveler to input a profile name before saving.
- The tabbed interface shall contain, at minimum, the following tabs:
    - Activities
    - Budget
    - Dietary
    - Cuisine
- Activities Tab
    - The system shall display all main activity categories (e.g., Cultural & Historical, Nature & Adventure, Shopping & Lifestyle).
    - The system shall allow travelers to expand each main category to view its sub-interests (e.g., Museums, Fine Dining, National Parks & Trails).

        - The system shall allow multiple sub-interests across any number of categories.
    - Budget Tab
        - The system shall allow the traveler to select budget levels (e.g., Budget-Friendly, Moderate, Luxury).
        - The system shall allow multi-select when appropriate.
    - Dietary Tab
        - The system shall display all available dietary restriction options (e.g., Vegan, Gluten Free, Dairy Free, Nut-Free).
        - The system shall allow multi-select for dietary preferences.
    - Cuisine Tab
        - The system shall display cuisine types (e.g., Italian, Japanese, Korean, American).
        - The system shall allow travelers to select multiple cuisine preferences.

3.1.1.2.2.3 Preference Profile Display (O: M: Crystal R.)

- The system shall provide the following actions:
    - Edit the profile.
    - Delete the profile.
    - View the profile.

- The system shall ensure that only the profile owner can view, edit, or delete their preference profile.

3.1.1.2.2.4 Preference Profile Edit (O: Crystal R.)

- The system shall provide an editable form containing all fields originally available during the Preference Profile Creation.
- The system shall pre-fill the edit form with traveler's existing preferences, including:
    - Profile Name
    - All selected categories and sub-options.
- The system shall allow travelers to add or remove:
    - Entire categories
    - Individual sub-options
- The system shall allow travelers to cancel the editing process without saving changes.
- Upon saving changes, the system shall update the Preference Profile record.

3.1.1.2.3 Itineraries (O: Stephen U.)

- The Itinerary feature provides a unified structure of activities and eateries that occupy each day of a given trip created by the traveler.

3.1.1.2.3.1 Itinerary Index (O: Stephen U.)

- The system shall provide an overview that allows travelers to view their created itineraries.
- From this display the traveler shall be able to edit or delete their existing itineraries.
- From this display the traveler shall be able to create new itineraries.

3.1.1.2.3.2 Itinerary Creation (O: Stephen U.)(M: Crystal R.)

- The system shall provide a form for the creation of new itineraries containing the following fields.
    - Itinerary Name
    - Description
    - Country
    - Preference Profile Selection
    - Start Date
    - End Date
- The system shall allow travelers to invite other travelers to view their itinerary.
- The system shall generate an itinerary based on the user's provided information using a combination of location scoring algorithm and an OpenAI GPT-model.
- The location scoring algorithm shall rate locations based on the user's selected preference profile.

3.1.1.2.3.3 Itinerary Display (O: Stephen U.)

- The system shall provide a detailed itinerary display with cards representing each activity and eatery separated by day.
- Each card shall contain the following activity/eatery information.
    - Name
    - Category
    - Average Rating
    - Address
    - Description
- The system shall provide an option to edit individual activity/eatery locations as well as an option to regenerate the itinerary entirely.
- The system shall display all the choices made in the creation step at the top of the itinerary display.

3.1.1.2.3.4 Itinerary Edit (O: Stephen U.)

- The system shall provide a way for the user to move individual activity/eateries in the itinerary between each other.
- The system shall provide a way to delete individual activities/eateries.

- The system shall provide a way for the traveler to insert their own user-created activities/eateries.
- The user shall provide a way to regenerate individual activity/eateries to select similar but different locations.
- The system shall provide a way to regenerate the entire itinerary.

3.1.1.2.4 Local Experts

3.1.1.2.4.1 Local Expert Index (O: William P.)

- The system shall display an indexed list of local experts. Each local expert is listed with their headshot, name, city they are an expert in, number of reviews, and their short bio.
    - The list can be searched, sorted, and filtered.

3.1.1.2.5 Explorer Rewards (O: Crystal R.)

The Explorer Rewards feature provides travelers with discounts and promotional offers associated with participating businesses and places.

- The Explorer Rewards page shall display a list of all active (non-expired) rewards available to the traveler.
- Each reward entry in the list shall display the following information:
    - Reward title
    - Business/place name

    - Short description (e.g., “15% off your visit)
    - Expiration date
- The system shall allow travelers to select a reward to view its full details, which shall include:
    - Reward title
    - Full description
    - Discount Code
    - Expiration date
    - Place details (address)
- The system shall ensure that expired rewards do not appear in the main Explorer Rewards list, except when the traveler applies a filter to show expired rewards.
- The system shall ensure travelers only see rewards associated with verified businesses.

3.1.1.2.6 Account Management(O: Fredrick T.)(M: Crystal R.)

- The system shall allow all users to update/change the following account information:
    - Name
    - Email
    - Phone Number
    - Date of Birth
    - Profile information(bio)
    - Password

- The system shall require users to confirm their current password before changing to a new password.
- The system shall prevent users from changing their email to an email that already exists in the system as another user.
- The system shall allow users, except admins, to delete their accounts.
- The system shall only allow each type of user to be authorized to use actions fitting their role.

3.1.1.3 Local Expert

3.1.1.3.1 Local Expert Dashboard (O: William P.)

- The Local Expert dashboard page shall allow Local Experts to see their reviews, their upcoming trips, and their invitations.
    - Local Experts can accept or decline invitations to join a traveler's itinerary.

3.1.1.4 Business

3.1.1.4.1 Business Dashboard(O: Fredrick T.)(M: Crystal R.)

- The system shall allow business users with access to a dashboard.
- The system shall allow business users to modify their account information as allowed by Account Management.
- The system shall allow business users to access advertisement options.

- The system shall allow business users to authorize discounts or promotions via Explorer Rewards.

3.1.2 Algorithms

3.1.2.1 Account creation & authentication (O: William M.)

- The system shall confirm all required fields are present before creating a new account.
- The system shall verify that each email address is unique before creating an account.

3.1.2.2 Profile handling (O: William M.)

- The system shall allow users to update personal profile fields including name, preferences and contact details.
- The system shall record user-provided preferences, which shall include:
    - Activity types
    - Dietary restrictions
    - Budget range
    - Accessibility needs

3.1.2.3 Review handling (O: William M.)

- The system shall store and associate user-submitted reviews with the corresponding business or location.
- The system shall generate a summary description of the location if no description is available.
- The system shall calculate and display an average rating for each business or location based on all submitted reviews.

3.1.2.4 Personalized itinerary creation (O: William M.)

- The system shall generate itinerary recommendations based on user's or group's preferences, location, budget.
- The system shall rank activities using a scoring method derived from user preferences and popularity metrics.
- The system shall schedule activities within the user specified time constraints.
- The system shall allow users to manually add, remove or reschedule activities within a generated itinerary.
- The system shall allow users to re-generate an itinerary.

3.1.2.5 Explorer rewards (O: Crystal R.)

- The system shall allow administrators or authorized businesses to create rewards.
- Each reward shall be associated with a specific business or place.
- The system shall ensure unique reward identifiers (codes) for each reward, for tracking and redemption.
- Rewards shall have start and expiration dates; the system shall automatically mark expired rewards as inactive.
- The system shall display active rewards only.
- The system shall log redemption activity, including traveler, reward, and date.

3.1.2.6 Group preferences (O: William M.)

- The system shall collect individual user preferences from all members of a group.
- The system shall generate itinerary recommendations that satisfy shared group constraints.
- The system shall provide each group member with access to the final shared itinerary.

3.2 Non-Functional Requirements

3.2.1 Reliability and Risk Management (O: Balemual Y.)

The system shall:

- Ensure uptime by monitoring system health and service availability.
- Provide real-time alerts for distributions that may affect itinerary creation or updates.
- Maintain stable performance during peak usage, ensuring itinerary generation and expert matching remain responsive.
- Handling failures gracefully by preventing data loss when connectivity or interruptions occur.

3.2.2 Legal and Safety Requirement (O: Balemual Y.)

The system shall:

- Display legal, cultural, and safety-related information to travelers based on the features shown in the prototype.
- Ensure users acknowledge limitations of the service, including:

- The platform can not guarantee full accuracy of travel conditions.
- The platform is not responsible for medical situations, emergency events, or unexpected hazards.

3.2.3 Security and Data management (O: Balemual Y.)

The system shall:

- Protect user data by restricting access to sensitive profile information and stored itineraries.
- Track data access through monitoring tools to ensure only authorized users and administrators can view or modify information.
- Store user preferences, reviews, and itinerary data securely within the approved system architecture.
- Limit sensitive information collecting to only what is necessary for the itinerary.
- Support administrative oversight by allowing the system administrator to monitor activity logs for suspicious behavior.

3.3 Design Constraints

3.3.1 Software Dependencies (O: William P.)

- The system shall require installation of PHP 8.0+, Composer, Node.js, and npm for development.
- The system shall use Composer for PHP dependency management.
- The system shall use Blade components for UI and authentication scaffolding.

3.3.2 Device Constraints (O: William P.)(M: Jandra)

- The system shall default to desktop mode when accessed by businesses.
- The system shall be compatible with desktop operating systems, and mobile operating systems (including Android and IOS) for use by local experts, and travelers.