

**CST 336 - Internet Programming**

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**Group 8**

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# **Team Project**

## **-Final Report**

## 1. Project Title

-Travel Itinerary Planner with AI travel assistant

## 2. Project Details

-Description: An app to help users plan their travel itineraries, including adding destinations, start/end date, number of guests and activities. The app utilizes google map APIs to display the map with popular activities of various types for users to select and add to itinerary. The app also uses openAI API to suggest travel itineraries, answer questions and provide recommendations. A full user interface with user signup, login, update profile, logout is implemented. The user state is maintained across all pages with an Express session.

-Features per project rubric:

- Form Elements: Text box for destination name, start, end date, select for number of guests, and check box for subscribe to letters in user sign up modal.
- Web Storage/Sessions: Use sessions for user authentication and state maintenance across all pages.
- Updating Records: Users can update itinerary activities in saved itineraries. Users can also update the user profile (first name, last name, phone number, address line, postal code, country, and state/region).
- Adding records to database: New user record is added to users table upon successful signups. Users can add new itineraries and activities to their account. Itinerary and activities are added to itinerary and activities tables.
- Client-Side JavaScript: Validate form inputs, handle API calls to fetch popular itineraries from a local API, handle API calls to openAPI and google map APIs for content, adding event listeners to buttons, generating HTML for all the pages, etc (There are around 800 lines total for front end scripts).
- Local and Web APIs:
  - **Fetch popular itineraries' details from the backend .json file:** The API endpoint is defined in the server file `index.js`. The fetch call is made in the `/public/scripts/itinerary.js` file, lines 124-152.
  - **Fetch map display and popular location details from external APIs (Google Maps JS API, Google Markers):** The API script tag is included in the `/public/views/links.ejs` file. Multiple fetch/request calls are made throughout the `/public/scripts/module/map.js` file.
  - **Fetch data (location details such as name, photos, address, rating, and reviews for activities/hotels listings) from the Google Places API:** Similar to the above.
  - **Implement OpenAI API for trip recommendations:** The API endpoint is defined in the `index.js` file, and a POST request is made through form submission in the `/public/views/chatbot.ejs` file.

- Design: Utilize Bootstrap for a responsive layout and CSS for a customized look.

### 3. Database Schema

- Users

userId	INT (PK)	Unique identifier for each user
password	VARCHAR	Hashed password for security
email	VARCHAR	Email address of the user
firstName	VARCHAR	User's first name
lastName	VARCHAR	User's last name
subscribed	TINYINT	User subscription to newsletter
mobilePhone	VARCHAR	User's phone number
addressLine	VARCHAR	User's address line of residency
postalCode	VARCHAR	User's postal code of residency
country	VARCHAR	User's country of residency
state	VARCHAR	User's state of residency

- Itineraries

itineraryId	INT (PK)	Unique identifier for each user
userId	INT (FK)	Username of the user
destination	VARCHAR	Location
startDate	DATE	Start date of the trip
endDate	DATE	End date of the trip
duration	INT	Trip duration
guests	INT	Number of guests

- Activities

activityId	INT (PK)	Unique identifier for each activity
itineraryId	INT (FK)	ID of the related itinerary
name	VARCHAR	Name of the activity
dayId	VARCHAR	Date of the activity in the itinerary
placeId	VARCHAR	Google's Place Id retrieved from Places API
address	VARCHAR	Type of activity (sightseeing, dining, etc.)

### 4. Task Distribution

-Triet: Team coordinator

- Manage project requirements and deadlines, manage pull requests on GitHub, help teammates debug and resolve code conflicts, oversee and clean up the codebase.
- Designed overall website layout, implemented Google map API for map, markers, locations, and activity cards. Implemented filter buttons for different activities type

- Implemented header layout and search bar functionalities
- Implemented user profile edit page, saved itineraries page, and itineraries CRUD operations

-Chika:

- Implemented external script for generating home page HTML
- Collected data for backend .json data file
- Created local API route to move data from backend to frontend to display on home page and itinerary detail page
- Implemented accordions for daily activities detail on itinerary detail page

-Talia:

- Developed full stack features and CRUD operations for user sign-up, log-in, and log-out
- Implemented sessions to keep user state across pages
- Built features to add and remove activities from travel days
- Used Bcrypt to hash passwords

-Brad:

- Implemented the Open AI API to create a responsive travel chatbot.
- Calculated trip duration with URL parameters and populated itinerary with days of the trip.
- Layout of the chatbot page.
- Assisted with CSS styling of the itinerary details page.

## 5. Changes from original design

-The final product closely aligns with the original plan. Throughout the development process, we made some minor adjustments, primarily to the fields of database tables. The core functionalities have remained unchanged.

## 6. Finished project screenshots

# triplify

**Sign Up**

The Sign Up page features a search bar, date selection fields, and a guest count of '1 guest'. A red arrow points from the 'Sign up' button in the top right corner to a callout box containing the text 'all fields required'.

North America

5 Days Alaska Anchorage | Kenai Fjords | Denali

4 Days California SF | Monterey | LA

6 Days Canada Toronto | Banff National Park | Vancouver

Sign up for triplify

First Name  Last Name

Email Address  Enter email

Password

Confirm Password

Subscribe to our newsletter

**Sign Up**

all fields required

**Log In**

The Log In page features a search bar, date selection fields, and a guest count of '1 guest'. A red arrow points from the 'Sign up' button in the top right corner to a callout box containing the text 'Sign up successful! Please sign in.'

North America

5 Days Alaska Anchorage | Kenai Fjords | Denali

4 Days California SF | Monterey | LA

6 Days Canada Toronto | Banff National Park | Vancouver

Login

Email Address  Enter email

Password

**Login**

## Edit User

The screenshot shows the 'Edit User' page on Tripify. At the top right, there is a user profile icon with the text 'Welcome back, Test User!' and a dropdown menu with options: 'Itineraries', 'Settings', and 'Log out'. A red arrow points from the bottom right towards this menu. Below the header, there is a search bar with placeholder text 'Search destination' and a date range selector with fields for 'Start date', 'End date', and '1 guest'. There is also a red search button. The main content area is titled 'North America' and features three travel destination cards: 'Alaska' (5 Days, Anchorage | Kenai Fjords | Denali), 'California' (4 Days, SF | Monterey | LA), and 'Canada' (6 Days, Toronto | Banff National Park | Vancouver). Each card includes a small image and a list of locations.

The screenshot shows the 'Profile Settings' page on Tripify. It features a user profile picture placeholder with the text 'Test User' and an email address 'talia@gmail.com'. Below the profile picture, there are several input fields for personal information: 'First Name' (Test), 'Last Name' (User), 'Mobile Number' (enter phone number), 'Address Line' (enter address line 1), 'Postcode' (enter postal code), 'Email' (talia@gmail.com), 'Country' (country), and 'State/Region' (state). A red callout box with the text 'change fields and then save!' has an arrow pointing to the 'Save Profile' button at the bottom. The 'Save Profile' button is highlighted with a red arrow. The page has a header with a search bar and a user profile icon.

## Start Custom Trip

The screenshot shows the 'Start Custom Trip' page on Tripify. At the top, there is a search bar with placeholder text 'Search destination' and a date range selector with fields for 'Start date' (2024-10-10) and 'End date' (2024-10-17). There is also a guest selection field '2 guests' and a red search button. A red arrow points from the bottom right towards the search button. The main content area is titled 'North America' and features three travel destination cards: 'Alaska' (5 Days, Anchorage | Kenai Fjords | Denali), 'California' (4 Days, SF | Monterey | LA), and 'Canada' (6 Days, Toronto | Banff National Park | Vancouver). Each card includes a small image and a list of locations. The page has a header with a search bar and a user profile icon.

Vienna, Austria      2024-10-10      2024-10-17      2 guests

### Itinerary

- >Day 1
- >Day 2
 

**now we can plan our trip!**
- >Day 3
- >Day 4
- >Day 5
- >Day 6
- >Day 7
- >Day 8

AI Assistant

Vienna, Austria      2024-10-10      2024-10-17      2 guests

**filter activities by type**

**Site** (circled in red)      Hotel      Shop      Food      Cafe

Clear      Apply

88 Places

**add activity to day of trip**



2024-10-10      2024-10-17

15 Places

Day 1      Hundertwasser House  
Hundertwasser House, Wien  
★★★★★ (22,685)

Day 2      Viennese Giant Ferris Wheel  
1 Gaudiegasse, Wien  
★★★★★ (39,662)

**remove activity**

Day 2  
Millennium Tower  
Handelskai, 1200 Wien, Austria  
[Remove](#)

Day 3  
House of Industry  
Schwarzenbergpl. 4, 1030 Wien, Austria  
[Remove](#)

Parade Court Fountains  
Schönbrunn, 1130 Wien, Austria  
[Remove](#)

Day 4  
[AI Assistant](#)

**make sure to log in first!**

Day 7  
Albrechtsbrunnen  
1010 Vienna, Austria  
[Remove](#)

Day 8  
Haas-Haus  
**make sure to log in first!**  
[AI Assistant](#)

[Save itinerary](#)

**Start Popular Trip**

triplify Vienna, Austria

**Itinerary**

>Day 1

>Day 2



Lisbon, Portugal

Start date | End date | 1 guest |

**Itinerary**

- >Day 1
- >Day 2
- >Day 3
- >Day 4

**90 Places**

Pink Street  
21 Rua Nova do Carvalho, Lisboa  
★★★★ (4,216)

Green Street  
Rua da Silva, Lisboa  
★★★★ (132)

Pilar 7 - Bridge Experience  
82 Avenida da Índia, Lisboa  
★★★★ (954)

Aqueduto das Águas Livres  
6 Calçada da Quintinha, Lisboa  
★★★★ (3,044)

### AI Travel Assistant

**Day 7**  
Albrechtsbrunnen  
1010 Vienna, Austria

**Day 8**  
Haas-Haus  
Goldschmiedgasse 3, 1010 Wien, Austria



Search destination | Start date | End date | 1 guest |

**AI Travel Assistant**

Your Question:

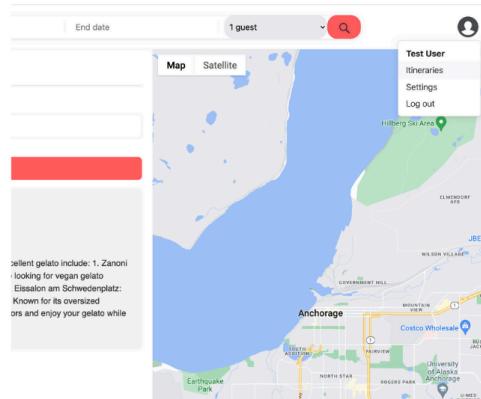
**Ask**

**Your Question:**  
Where can I get the best gelato in Vienna, Austria?

**Assistant's Response:**  
In Vienna, Austria, you can find delicious gelato at many cafes and gelaterias around the city. Some popular places known for serving excellent gelato include: 1. Zanoni & Zanoni: This traditional Italian-style gelateria offers a wide selection of flavors made with high-quality ingredients. 2. Veganista: If you're looking for vegan gelato options, Veganista is a great choice. They offer a variety of dairy-free flavors that are just as creamy and delicious as traditional gelato. 3. Eiscafe am Schwesternplatz: This historic gelateria is a favorite among locals and tourists alike. They serve classic gelato flavors as well as unique creations. 4. Ticky: Known for its oversized portions and generous scoops, Ticky is a popular spot for those looking to satisfy their gelato cravings. Remember to try out different flavors and enjoy your gelato while exploring the beautiful city of Vienna!

**example question**

## View Saved Itineraries



Vienna, Austria

2024-10-10 - 2024-10-17

Delete

**Itinerary**

- Day 1: Karlsplatz Metro Station
- Day 2: Millennium Tower
- Day 3: Parade Court Fountains
- Day 4: Star the Reindeer

80 Places

- Snowzilla
- Greetings from Als
- Fishing Salmon Vt
- Star the Reindeer

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## Log Out

