Addis Ababa Science and Technology University

College of Engineering

Department of Software Engineering

Internet Programming I

Group 7

Project Title - TravelGram : Your travel companion

Group Members

	Name	ID
1.	Mahder Ashenafi	ETS0881/16
2.	Meheretabe Abayneh	ETS0912/16
3.	Mussie Ferede	ETS1038/16
4.	Mussie Tadesse	ETS1040/16
5.	Mussie Tarekegn	ETS1041/16

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Introduction

The rapid growth of internet technologies and web-based applications has significantly transformed the way people communicate, share experiences, and access information. Social media platforms, in particular, have become essential tools for connecting individuals with shared interests, enabling content creation, real-time interaction, and personalized information delivery. In the tourism sector, these platforms play a crucial role in influencing travel decisions, sharing experiences, and connecting travelers with relevant services and businesses.

Ethiopia is a country rich in cultural heritage, historical landmarks, natural attractions, and diverse landscapes. However, tourists planning to visit Ethiopia often face challenges in finding centralized, experience-based, and destination-specific information that combines social interaction with travel planning. Most existing platforms either focus on general social networking or provide static travel information without fostering meaningful interaction between travelers and local travel-related companies.

To address this gap, our team developed a traveling-themed social media web application as part of the Internet Programming course. The project is a frontend-only web application designed to connect travelers with other travelers as well as with travel-related companies based on their intended destinations, starting with Ethiopia as the primary focus. The platform emphasizes user-generated content, interaction, and discovery to create an engaging digital environment for tourists.

The application incorporates essential social media features such as user profiles, blogging, likes and interactions, messaging, and personalized “For You” pages based on travel interests. In addition, it introduces a company feature that allows businesses to showcase services and connect with travelers who are interested in specific locations. By combining social networking concepts with travel-oriented functionality, the system aims to enhance the way tourists explore destinations, share experiences, and connect with relevant services.

The development of the project followed a phased approach aligned with Internet Programming principles. The structure of the application was first implemented using HTML, followed by styling and layout design using CSS, and finally enhanced with interactivity and dynamic behavior through JavaScript. This approach allowed the team to focus on clean structure, responsive design, and functional interactivity while reinforcing core frontend development concepts taught in the course.

Context

The continuous expansion of web technologies has enabled the development of interactive, user-centered applications that go beyond static information sharing. Modern internet users

increasingly expect platforms that provide personalization, social interaction, and visually engaging content. In the context of tourism, these expectations are even more pronounced, as travelers rely heavily on digital platforms to explore destinations, learn from others' experiences, and make informed decisions before and during their trips.

Tourism-related web platforms commonly fall into two categories: traditional informational websites and general-purpose social media platforms. Informational websites often provide structured data such as destination descriptions, hotel listings, or travel guidelines, but they lack social engagement and real-time interaction. On the other hand, mainstream social media platforms allow users to share experiences but are not specifically designed around travel goals, destination discovery, or direct connections with travel-related companies. This separation creates a gap between social interaction and practical travel planning.

Within the Ethiopian tourism context, this gap becomes more evident. Ethiopia offers a wide range of attractions, including historical sites, cultural traditions, natural landscapes, and religious landmarks. Despite this richness, tourists—especially first-time visitors—may struggle to find platforms that combine authentic traveler experiences, destination-focused content, and direct interaction with local companies such as tour operators, guides, and hospitality services. A dedicated travel-focused social media platform can help bridge this gap by presenting Ethiopia through user-generated content while supporting discovery and engagement.

This project was developed within the academic setting of the Internet Programming course, where the primary focus is on understanding and applying core frontend web technologies. The course emphasizes the practical use of HTML for content structure, CSS for styling and layout, and JavaScript for interactivity and dynamic behavior. As a result, the project was intentionally designed as a frontend-only application, allowing the team to concentrate on user interface design, client-side logic, and interactive features without relying on backend services or databases.

The project context also includes collaborative software development. As a team-based project, responsibilities were shared among members to design interfaces, implement features, and ensure consistency across the application. This collaboration reflects real-world web development practices and reinforces teamwork, planning, and integration skills. Overall, the context of this project lies at the intersection of academic learning, modern web development practices, and the practical needs of tourists exploring Ethiopia.

Motivation

The primary motivation behind this project was the growing dependence of travelers on web-based platforms for discovering destinations, sharing experiences, and making travel-related decisions. Modern tourists increasingly prefer interactive and community-driven platforms over

static informational websites. This shift highlighted the need for a system that combines social interaction with travel-oriented content in a single, unified web application.

Another strong motivation was the lack of destination-focused platforms that promote Ethiopia through authentic, user-generated experiences. Although Ethiopia possesses rich cultural heritage, historical landmarks, and diverse natural attractions, much of the available online content is fragmented or lacks interactivity. The project was therefore motivated by the desire to present Ethiopia as a travel destination through blogs, posts, and interactions created by travelers themselves, making the information more engaging and trustworthy.

From an academic and technical perspective, the project was motivated by the need to apply theoretical knowledge from the Internet Programming course to a real-world scenario. Developing a frontend-only application allowed the team to focus on mastering core web technologies and understanding how different components of a web application work together. The project particularly aimed to strengthen skills related to:

- structuring web pages using HTML, designing responsive and visually appealing layouts with CSS, and adding interactivity using JavaScript.

The inclusion of a company feature was also motivated by the intention to enhance the practical usefulness of the platform. Connecting travelers with travel-related companies based on their intended destinations creates value for both parties. Travelers gain easier access to relevant services, while companies can directly reach users who are interested in specific locations, improving engagement and relevance.

Finally, the motivation for this project was reinforced by the opportunity to work collaboratively as a team. The project provided a realistic development environment where tasks were shared, features were integrated, and collective decision-making was required. This experience helped the team develop not only technical skills but also collaboration, communication, and project organization abilities, which are essential in real-world web development.

Objectives

General Objective

The general objective of this project is to design and develop a frontend-based traveling-themed social media web application that enables tourists—initially focusing on visitors to Ethiopia—to discover destinations, share travel experiences, interact with other users, and connect with travel-related companies through an interactive and user-friendly interface.

Specific Objectives and Corresponding Functional Requirements

The following specific objectives define the intended functionality of the system and are each associated with corresponding functional requirements that describe what the system must be able to do.

1. **Objective:** To allow users to create and manage personal profiles for sharing travel-related information.
   Functional Requirement: The system shall provide profile pages where users can view and update basic information, profile pictures, and travel interests.

2. **Objective:** To enable users to publish travel-related content in the form of blogs or posts.
   Functional Requirement: The system shall allow users to create, view, and display travel blogs and posts using structured HTML elements.

3. **Objective:** To support interaction between users through likes and engagement features.
   Functional Requirement: The system shall allow users to like posts and visually display interaction counts using client-side logic.

4. **Objective:** To provide a personalized content experience based on users' travel interests.
   Functional Requirement: The system shall generate a "For You" page that displays content related to selected or viewed destinations using JavaScript-based filtering.

5. **Objective:** To enable users to discover content and other users through search functionality.
   Functional Requirement: The system shall provide a search and discover feature that filters posts, users, or destinations on the client side.

6. **Objective:** To facilitate communication between users through a messaging interface.
   Functional Requirement: The system shall provide a messaging page that allows users to exchange messages using a simulated frontend interaction model.

7. **Objective:** To connect travelers with travel-related companies based on destination interest.
   Functional Requirement: The system shall display company profiles and associate them with destinations relevant to user interests.

8. **Objective:** To allow companies to showcase their services and offerings to travelers.
   Functional Requirement: The system shall provide dedicated company profile pages displaying service descriptions, destination focus, and visual content.

9. **Objective:** To design a responsive and visually consistent user interface across devices.
   Functional Requirement: The system shall use CSS layouts and media queries to ensure usability on different screen sizes.

10. **Objective:** To demonstrate a phased frontend development approach using core web technologies.
    Functional Requirement: The system shall be implemented incrementally using HTML for structure, CSS for styling, and JavaScript for interactivity.

Significance of the Project

The significance of this project lies in its contribution to both the tourism domain and the academic objectives of the Internet Programming course. By combining social media concepts with travel-focused functionality, the project demonstrates how web technologies can be used to create interactive platforms that support exploration, communication, and information sharing.

From a tourism perspective, the application serves as a digital space where travelers can access destination-focused content related to Ethiopia through real user experiences. Unlike traditional travel websites that present static information, this platform encourages engagement through blogs, likes, messaging, and personalized content feeds. This approach helps tourists gain practical insights, discover less-known destinations, and make more informed travel decisions based on shared experiences.

The project is also significant in strengthening connections between travelers and travel-related companies. By allowing companies to present their services and connect with users based on intended destinations, the system creates mutual value. Travelers benefit from easier access to relevant services, while companies gain visibility among users who are genuinely interested in specific travel locations.

From an academic standpoint, the project provides practical exposure to frontend web development using core internet programming technologies. It reinforces important concepts such as semantic HTML structure, responsive CSS design, and JavaScript-based interactivity. The phased development process highlights how complex web applications can be built incrementally and systematically. The project contributes to skill development in:

- user interface design, client-side logic implementation, and collaborative web development practices.

Additionally, the project holds significance as a team-based development experience. Working collaboratively allowed the team members to practice task distribution, integration of individual

components, and collective problem-solving. These skills are essential in real-world software development environments and extend the learning outcomes beyond technical knowledge.

Overall, the project demonstrates how internet programming concepts can be applied to solve real-world problems in tourism while promoting Ethiopia as a travel destination through an engaging and interactive web platform.

Beneficiaries of the System

The traveling-themed social media application is designed to benefit multiple groups involved in the tourism ecosystem. By integrating social interaction, content sharing, and destination-focused discovery, the system provides value to both individual users and organizations connected to the tourism sector.

The primary beneficiaries of the system include:

- **Tourists and Travelers:**
  Tourists planning to visit Ethiopia benefit from access to authentic, user-generated travel content, personalized discovery features, and interactive tools such as messaging and blogs. The platform helps travelers explore destinations, learn from others' experiences, and connect with like-minded individuals, enhancing trip planning and overall travel experience.

- **Local and Travel-Related Companies:**
  Travel agencies, tour operators, guides, and hospitality-related businesses benefit from the ability to showcase their services through dedicated company profiles. The system allows companies to reach travelers who are interested in specific destinations, increasing visibility and relevance without relying on traditional advertising platforms.

- **Content Creators and Bloggers:**
  Users who enjoy sharing travel experiences benefit from a platform specifically designed for travel storytelling. Blogging features, interactions, and profile visibility encourage content creation and engagement around tourism-related topics.

- **Students and Academic Community:**
  As an Internet Programming course project, the system benefits students by providing hands-on experience in frontend web development. It also serves as a reference model for applying HTML, CSS, and JavaScript concepts in a real-world scenario.

- **Ethiopian Tourism Promotion:**
  The system indirectly benefits the Ethiopian tourism sector by promoting destinations

through real traveler experiences. Community-driven content helps present Ethiopia in an engaging and authentic manner, contributing to increased awareness and interest among potential visitors.

Overall, the system creates a shared platform where travelers, companies, and learners gain value through interaction, visibility, and practical application of internet programming concepts.

Feasibility Analysis

Feasibility analysis evaluates whether the proposed system can be successfully developed and implemented within the given technical, academic, and time constraints. For this project, the feasibility analysis focuses on the suitability of frontend technologies, available resources, and the academic environment in which the system was developed.

Technical Feasibility

The project is technically feasible because it relies solely on frontend web technologies that are well-established and covered within the Internet Programming course. The use of HTML, CSS, and JavaScript provides sufficient capability to design structured layouts, implement responsive interfaces, and simulate interactive social media features such as likes, messaging interfaces, and content filtering.

All core functionalities—including profiles, blogs, search, and personalized feeds—are achievable using client-side logic without the need for backend services. Browser support for these technologies ensures that the application can run consistently across modern devices and platforms. The phased development approach (HTML → CSS → JavaScript) further enhanced technical feasibility by allowing features to be built and tested incrementally.

Economic Feasibility

The project is economically feasible as it does not require financial investment. All development tools used are free and readily available, such as web browsers and code editors. Since the system is frontend-only, there are no costs associated with servers, databases, hosting, or third-party APIs.

Additionally, the project was developed as part of an academic course, meaning that development time and effort were allocated within the normal course schedule. This makes the system cost-effective while still fulfilling its educational and functional objectives.

Operational Feasibility

The system is operationally feasible because it is designed to be intuitive and user-friendly for its target users—tourists planning to visit Ethiopia. The interface follows common social media design patterns, which reduces the learning curve for new users. Features such as navigation menus, content feeds, profiles, and interaction buttons are familiar to users who have experience with modern web applications.

From a development perspective, the system is also feasible to operate and maintain within an academic setting. As a frontend-only project, updates and modifications can be made directly to the codebase without complex deployment or configuration processes.

Schedule Feasibility

The project is schedule-feasible as it was developed within the timeframe allocated for the Internet Programming course. The phased development strategy allowed the team to manage time effectively by focusing on one layer of the application at a time. This approach reduced complexity and made it easier to track progress and meet submission deadlines.

Task distribution among team members further supported timely completion of the project. Each member contributed to specific components, ensuring parallel development and efficient use of available time.

Overall Feasibility

Based on the technical, economic, operational, and schedule analysis, the traveling-themed social media web application is considered feasible within the scope of the Internet Programming course. The project successfully meets its objectives using available resources, appropriate technologies, and a realistic development plan.

Overview of Existing Systems

Currently, there are several digital platforms that support travelers and tourism-related activities, including social media applications and travel service platforms. Popular social media platforms such as Instagram, Facebook, and TikTok allow users to share travel experiences through posts, images, and videos. These platforms help travelers discover destinations and gain inspiration from other users' experiences. However, they are not specifically designed for travel planning or for connecting travelers with travel-related companies based on destination preferences.

On the other hand, travel-focused platforms such as TripAdvisor, Booking.com, and Airbnb provide services related to accommodation booking, reviews, and travel recommendations. While these systems are useful for planning trips, they primarily focus on transactional services such as reservations and ratings rather than social interaction. Communication between travelers

and companies is often limited to basic messaging or review systems, and there is little emphasis on building a social community around travel experiences.

Additionally, many existing systems operate as separate platforms, where social interaction and travel services are not fully integrated. Travelers often need to switch between multiple applications—one for social inspiration, another for communication, and another for booking services. This fragmentation can reduce user engagement and makes it difficult for travel-related companies to directly connect with potential travelers in a personalized and interactive way.

Furthermore, most existing global platforms do not specifically target tourism in Ethiopia or highlight local travel opportunities, destinations, and companies in a focused manner. As a result, local travel companies may struggle to reach tourists effectively, and travelers may miss out on authentic, location-specific travel experiences.

These limitations highlight the need for a unified, travel-themed social media platform that combines social interaction, content discovery, and company–traveler connection within a single system.

Problems of Existing Systems

Despite the availability of various social media and travel-related platforms, several limitations exist in current systems that affect both travelers and travel-related companies.

One major problem is the **lack of integration between social interaction and travel services**. Existing social media platforms allow users to share travel experiences, but they do not provide structured features for discovering destinations, connecting with travel companies, or planning trips. Conversely, travel service platforms focus mainly on bookings and reviews, offering limited opportunities for social engagement and community building among travelers.

Another issue is **inefficient communication between travelers and companies**. In many existing systems, direct interaction is either restricted or not designed for meaningful engagement. Messaging features, when available, are often basic and do not support personalized communication based on travel interests, preferred destinations, or user profiles. This limits the ability of companies to understand traveler needs and offer relevant services.

Fragmentation of platforms is also a significant problem. Travelers often need to use multiple applications for different purposes such as discovering destinations, reading travel blogs, communicating with others, and contacting companies. This results in a poor user experience and increased effort, as users must manage multiple accounts and interfaces.

Additionally, most existing platforms lack a **destination-focused recommendation system** that prioritizes user interests. Content is usually shown based on general popularity rather than

specific travel preferences, making it difficult for users to discover relevant destinations or services tailored to their interests.

Another important limitation is the **low visibility of local and emerging travel companies**, particularly those operating in Ethiopia. Global platforms tend to highlight internationally recognized destinations and companies, which can overshadow local businesses. This reduces opportunities for local companies to reach tourists and limits travelers' access to authentic, locally driven travel experiences.

Finally, many existing systems are **not designed with a clear travel-centered user experience**. Travel-related content is mixed with unrelated posts, reducing its usefulness for users seeking travel inspiration or information. This lack of specialization makes it difficult to create a focused and engaging environment for travelers.

These problems demonstrate the need for a dedicated travel-themed social media platform that integrates social interaction, content discovery, and company engagement in a single, user-friendly system.

Proposed System – Use Case Overview

The proposed system is a **travel-themed social media web application** designed to connect travelers with travel-related companies while allowing users to share experiences, discover destinations, and interact socially. The system focuses on tourists interested in traveling to Ethiopia and emphasizes destination-based content discovery and communication.

The system is implemented as a **frontend-only application**, where use cases represent user interactions with the interface and simulated system behavior using HTML, CSS, and JavaScript.

Actors

The proposed system includes the following primary actors:

- **Traveler (User):**
  A tourist or travel enthusiast who uses the platform to discover destinations, interact with content, communicate with others, and connect with companies.

- **Company:**
  A travel-related organization such as tour agencies, hotels, or guides that uses the platform to promote services and interact with travelers.

Use Case Descriptions

1. User Registration and Profile Access

- **Actor:** Traveler / Company
- **Description:** The user accesses the platform and views or manages a profile page containing personal or company-related information, travel interests, and shared content.
- **Outcome:** Profile information is displayed and updated on the user interface.

2. Discover Travel Content

- **Actor:** Traveler
- **Description:** The traveler browses the Discover or Search section to explore travel posts, destinations, and companies related to Ethiopia.
- **Outcome:** Relevant travel content is displayed based on selected destinations or interests.

3. For You Feed Viewing

- **Actor:** Traveler
- **Description:** The traveler views a personalized “For You” page that displays travel posts and recommendations based on preferred destinations and interactions.
- **Outcome:** A customized content feed is presented to the user.

4. Create and View Travel Posts (Blogging)

- **Actor:** Traveler
- **Description:** The traveler creates travel-related posts such as blogs, images, or descriptions to share experiences with others.
- **Outcome:** Posts are displayed on the user profile and in content feeds.

5. Like and Interact with Content

- **Actor:** Traveler

- **Description:** The traveler likes posts and interacts with content to express interest and engagement.

- **Outcome:** Interaction indicators such as like counts are updated on the interface.

6. Messaging Between Users

- **Actor:** Traveler

- **Description:** The traveler sends and receives messages with other travelers to discuss destinations or share experiences.

- **Outcome:** Messages are displayed in the messaging interface.

7. Company Service Promotion

- **Actor:** Company

- **Description:** The company creates and manages a company profile to showcase services, destinations covered, and travel packages.

- **Outcome:** Company information is visible to travelers browsing related destinations.

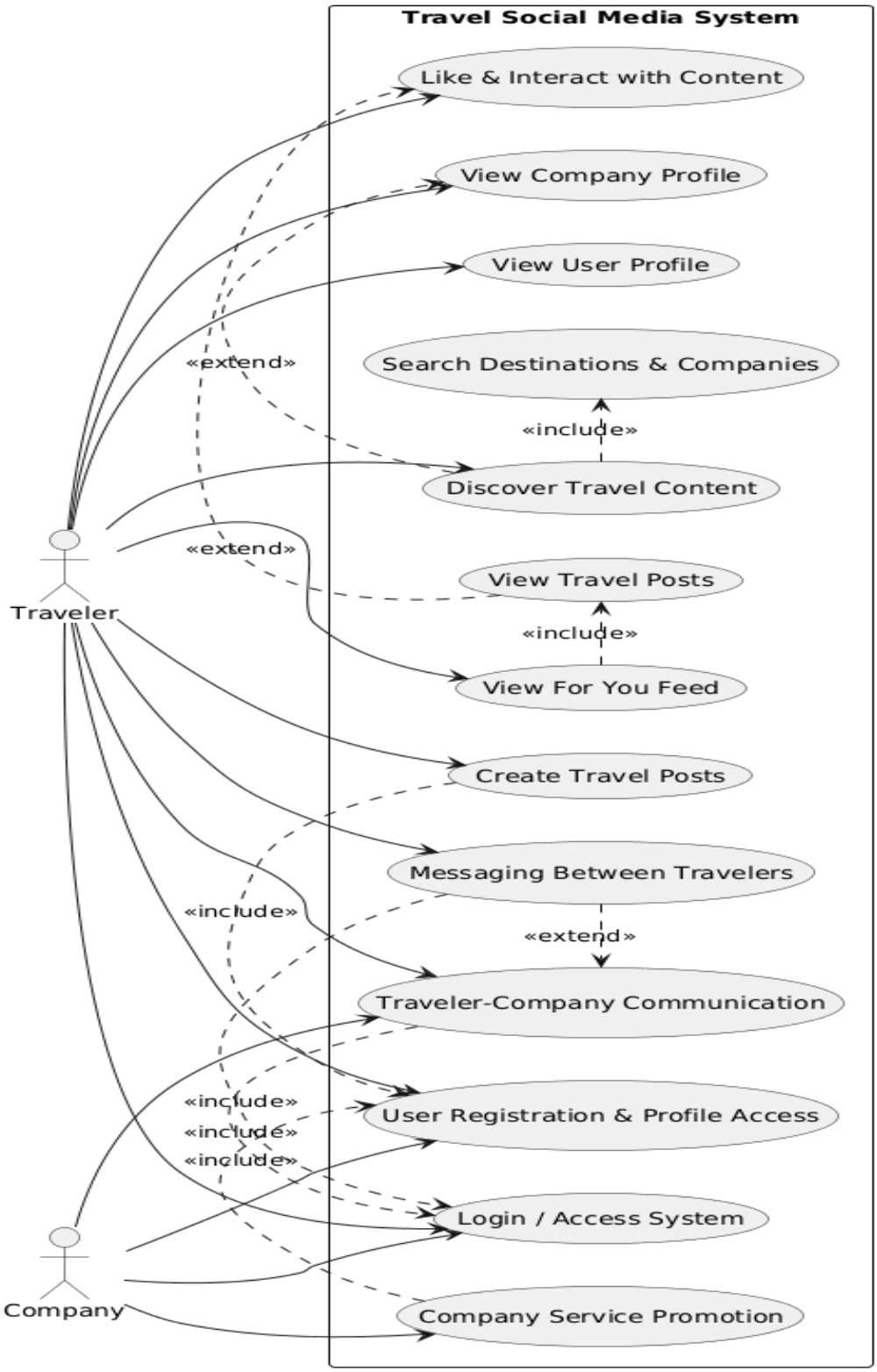
8. Traveler–Company Communication

- **Actor:** Traveler, Company

- **Description:** Travelers communicate with companies through the messaging feature to inquire about services related to specific destinations.

- **Outcome:** Communication is displayed within the messaging interface.

Use Case Diagram



Use Case Summary

The proposed system integrates social media interaction with travel discovery by allowing travelers to explore destinations, share content, and communicate with both other travelers and companies. By focusing on destination-based discovery and local travel services, the system addresses the limitations of existing platforms and provides a unified and user-friendly travel-centered experience.