City University of Hong Kong
2024-2025 Semester A
CS3343 Software Engineering Practice

Project Plan
Group 38
Hong Kong Journey Planner

Conducted by:

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1. Summary of the Project

1.1 Project Description

Hong Kong has many different attractions distributed in many areas, such as historical sites, restaurants or beautiful scenery. There is an increasing number of tourists coming from around the world. However, planning a trip for first-time visitors has considerable difficulty because the city is overcrowded and provides a wide range of options and activities.

To address these issues, the project plans to establish a system to meet the needs of tourists and make planning for Hong Kong's tourism easier. The app will then provide them with an optimized route showing the suggested locations and activities during their visit. The application will also enhance the entire travel experience by providing route options while taking into consideration users' preferences and specific date range, allowing them to optimize their time spent in Hong Kong efficiently. Such a solution not only raises the level of satisfaction but also motivates users to discover different corners and landmarks of Hong Kong.

1.2 Stakeholders

Stakeholders Description

Stakeholders	Description
Users	Users of this system are basically tourists who come to Hong Kong. They can input information to get desirable travel routes in Hong Kong's various districts.
Developers	Developers are the team members who are responsible for developing and maintaining the program.
Local Government	The government can help to promote tourism.

1.3 Objectives of the Project

The main objectives of the project are to:

- **Provide Personalized Routes**
  - Develop a system that allows users to input their travel dates and preferred district, generating customized travel routes based on their preferences. This will help tourists maximize their visit by presenting relevant attractions and experiences.

- **Help users solve real problem**
  - Create an user-friendly interface that simplifies trip planning for users of all ages and tech familiarity. The design will emphasize quick access to suggestions and easy modifications for itinerary adjustments.

- **Promote Exploration of Diverse Districts**
  - Encourage tourists to explore various Hong Kong districts by recommending a balanced mix of popular attractions and lesser-known local spots. This will not only offer a fuller experience but also support local businesses and cultural sites.

1.4 Project Requirements

- **User Input**
  - The preference distracts.
    - E.g. Hong Kong Island, Kowloon, New Territories, Outlying Island
  - The date range
    - We can calculate the number of days that they will be visited and plan a scheduled trip for them each day.
  - Budget in the trip
    - We can suggest the activities that are most suitable for their budgets.

- **Attractions**
    - A list of interests, including restaurants, plazas and scenic spots nearby the selected district.
    - Prioritize highly rated locations.

- **Dijkstra Algorithm**
    - The shortest distance will be calculated among the attractions.

2. Software Development Methodology

Concurrent engineering models are adopted in our project. The divide and conquer principle is applied. We design the requirements in the early stage of our project. After the requirements are designed and analysed, we are assigned to different team works on our own component at the same time with the other teams. We develop parallel, then we integrate our components periodically and keep improving our codes.

2.1 Project Team Organization

Name	**Position**	**Job Description**
Fan Tianrui	Project Manager	Programming
Wang Fan	Assistant Project Manager	Testing
GAO Nanjie	Developing Analyst	Database
CHEUNG Lok Yi	Testing Engineer	Testing
LIU Hengche	Program Developer	Algorithm Core

2.2 Development Tools

2.2.1 Database

- Web Scraping

2.2.2 Development IDE

Software:

- Eclipse IDE for Java Developers - 2024-09

Library:

- Jackson (jor JSON)

2.2.3 Development Platform

- Windows 10 with Java Development Kit (JDK) v16.0.2

- macOS Monterey 12.0.1 (x86_64)

2.2.4 Test Cases

- JUnit v5

2.2.5 Coverage Checking

- Eclipse IDE built-in coverage runner

2.2.6 Testing Platform

- Windows 10

- macOS Monterey 12.0.1 (x86_64)

2.2.7 Documentation

- Visual Paradigm 16.2 - Use Case Diagram, Class Diagram and Sequence Diagram

- Bugzilla - Bug Report

- Google Doc - Report

- Google Slide - Presentation

2.2.8 Project Management

● Excel - Project Scheduling

● GitHub - Project Collaboration

● Fork - Project File Management

● Google Drive - Project Documentation

2.2.9 Version Control

Github is a great project file sharing and progress synchronization platform. Engineering case members can keep track of team progress and make changes in a timely manner. When pushed, all changes will be recorded. In the event of a conflict, members may determine differences between conflicting documents to ensure overall correctness projects. Our members will work under their respective branches and make consolidation requests develop independently from the main branch without interrupting the main branch. Branch, thereby increasing efficiency.

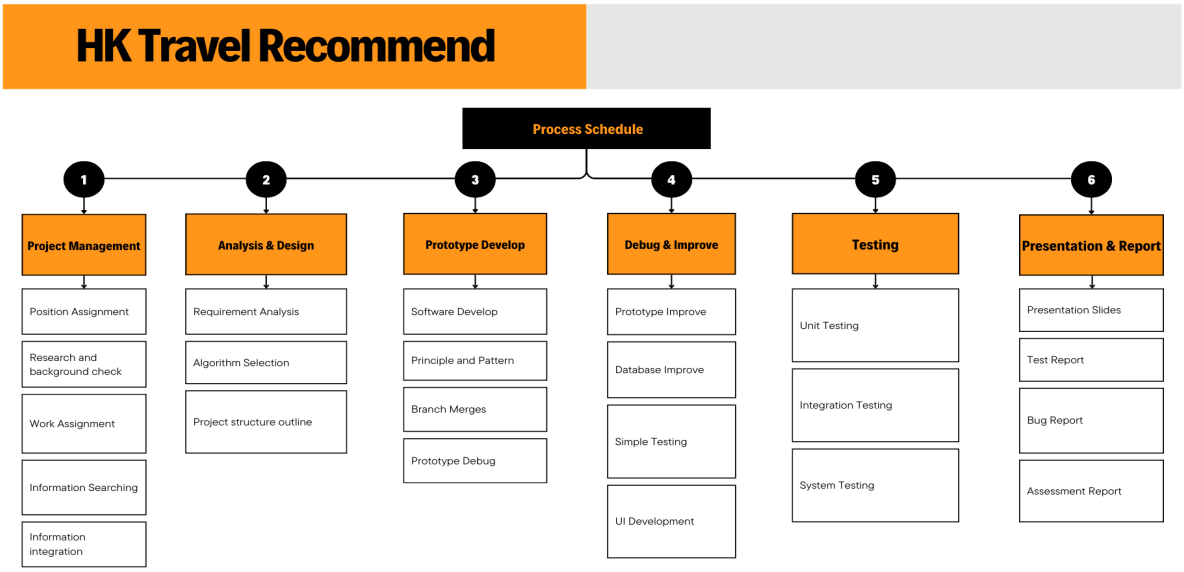
We also use Fork to better arrange local files and Github files. With it, we can visualize the difference between the latest version and the old version. It also allows rollback of the version in case some pull requests are processed errors.

2.2.10 Reporting

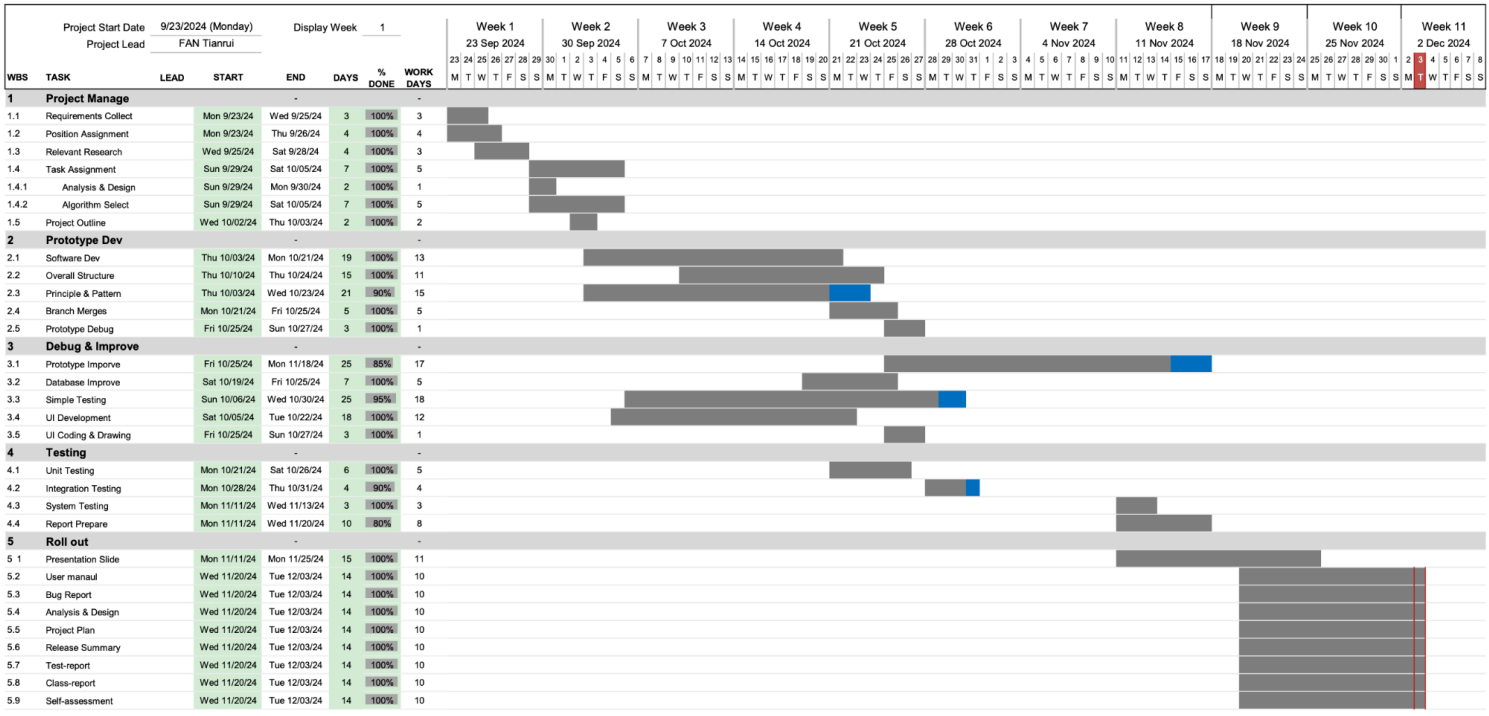
We created a shared folder on Google Drive to edit documents in parallel. Members can also view content in real time. This will increase the speed and accuracy of writing.

3. Work Breakdown Structure

We adopt process-type WBS to generalize and define the overall scope of work of the project. We use tree structure to present different phases of our job. We have various stages and the branches are extended. We can ensure the tasks are ready for the next stage.



4. Project Schedule

Task	Start Date	End Date
1. Project Management		
1.1 Requirement Collect	23/09/2024	25/09/2024
1.2 Position Assignment	23/09/2024	26/09/2024
1.3 Relavant research	25/09/2024	28/09/2024
1.4 Task Assignment	29/09/2024	05/10/2024
1.5 Project Outline	02/10/2024	03/10/2024
2. Prototype Development		
2.1 Software Development	03/10/2024	21/10/2024
2.2 Overall Structure	10/10/2024	24/10/2024
2.3 Principle and Pattern	03/10/2024	23/10/2024
2.4 Branch Merges	21/10/2024	25/10/2024
2.5 Prototype Debug	25/10/2024	27/10/2024
3. Debug and Improvement		
3.1 Prototype Improvement	25/10/2024	18/11/2024
3.2 Database Improvement	19/10/2024	25/10/2024
3.3 Simple Testing	06/10/2024	30/10/2024
3.4 UI Development	05/10/2024	22/10/2024
3.5 UI Coding and Drawing	25/10/2024	27/10/2024
4. Testing		
4.1 Unit Testing	21/10/2024	26/10/2024
4.2 Integration Testing	28/10/2024	31/10/2024
4.3 System Testing	11/11/2024	20/11/2024
5. Rollout		
5.1 Presentation	11/11/2024	16/11/2024
5.2 Deliverables	11/11/2024	04/12/2024

HK Travel Recommender