

# Requirement Analysis Review

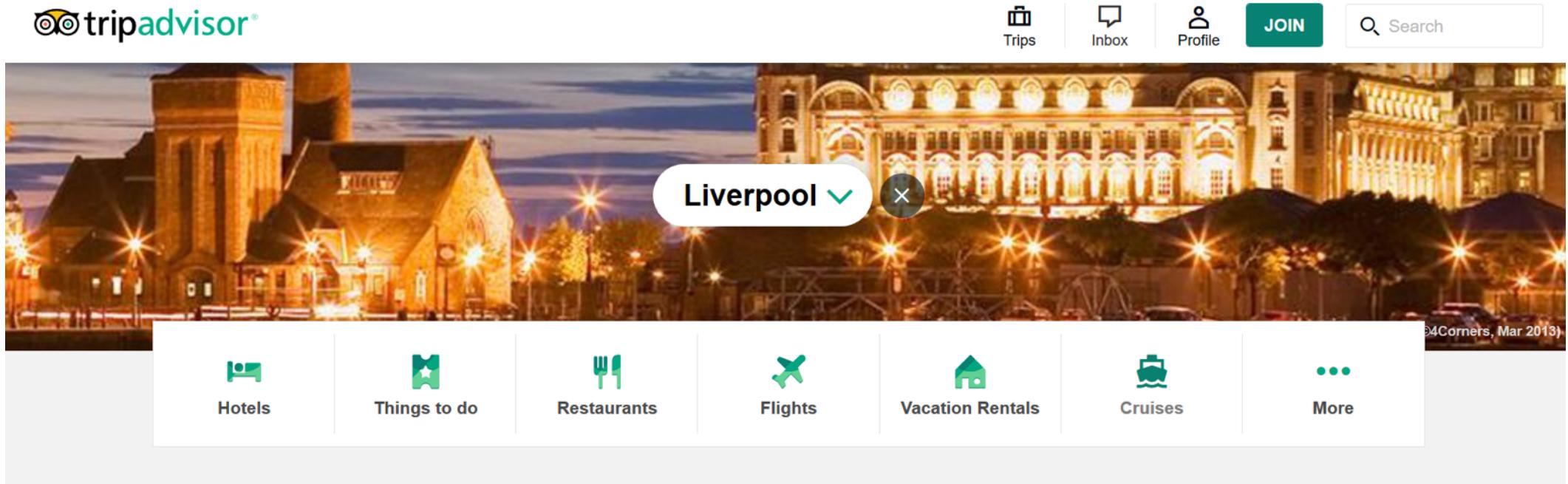
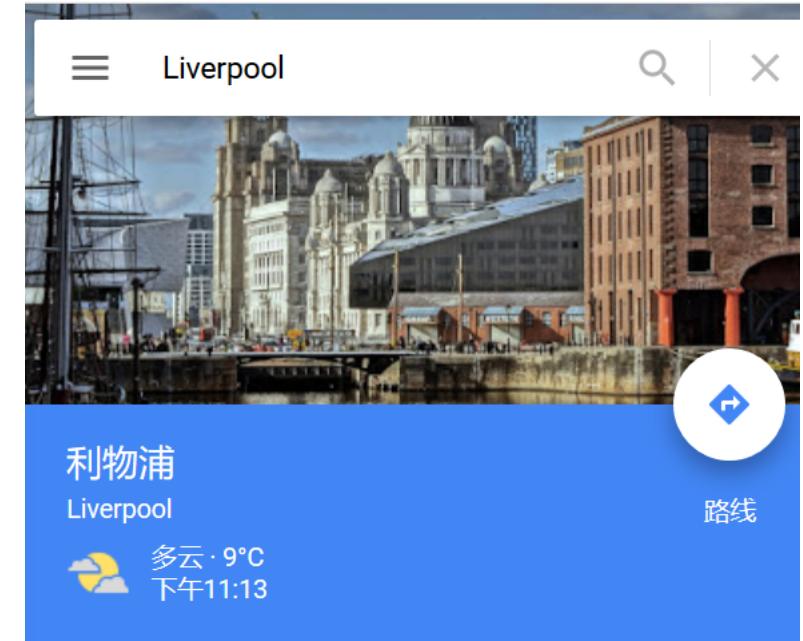
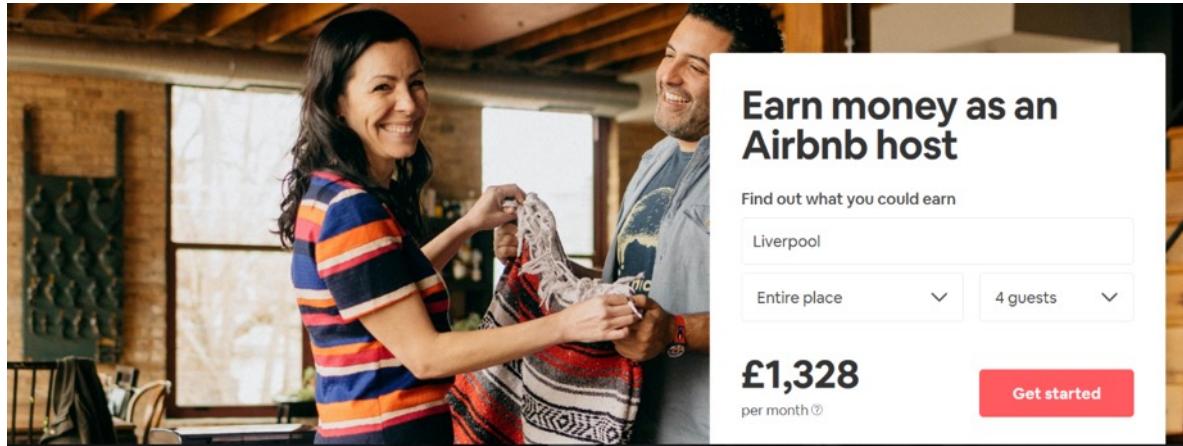
Feb, 2019

Team15

# Project Description

- Inspiration
- Target Customer
- Feature
- Project Objectives

# Inspiration



# Target Customer

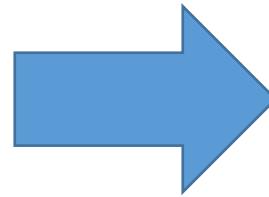
- Backpacker
- Short period
- Inexperienced Travellers

# Features

- Standard Recommendation
- Preference Recommendation
- Ultimate Recommendation

# Project Objectives

- To maintain (enter, update and delete data) on Countries.
- Cities.
- Tourist attractions.
- User account information.
- User travel preferences.
- Registered users.
- To perform searches on countries.



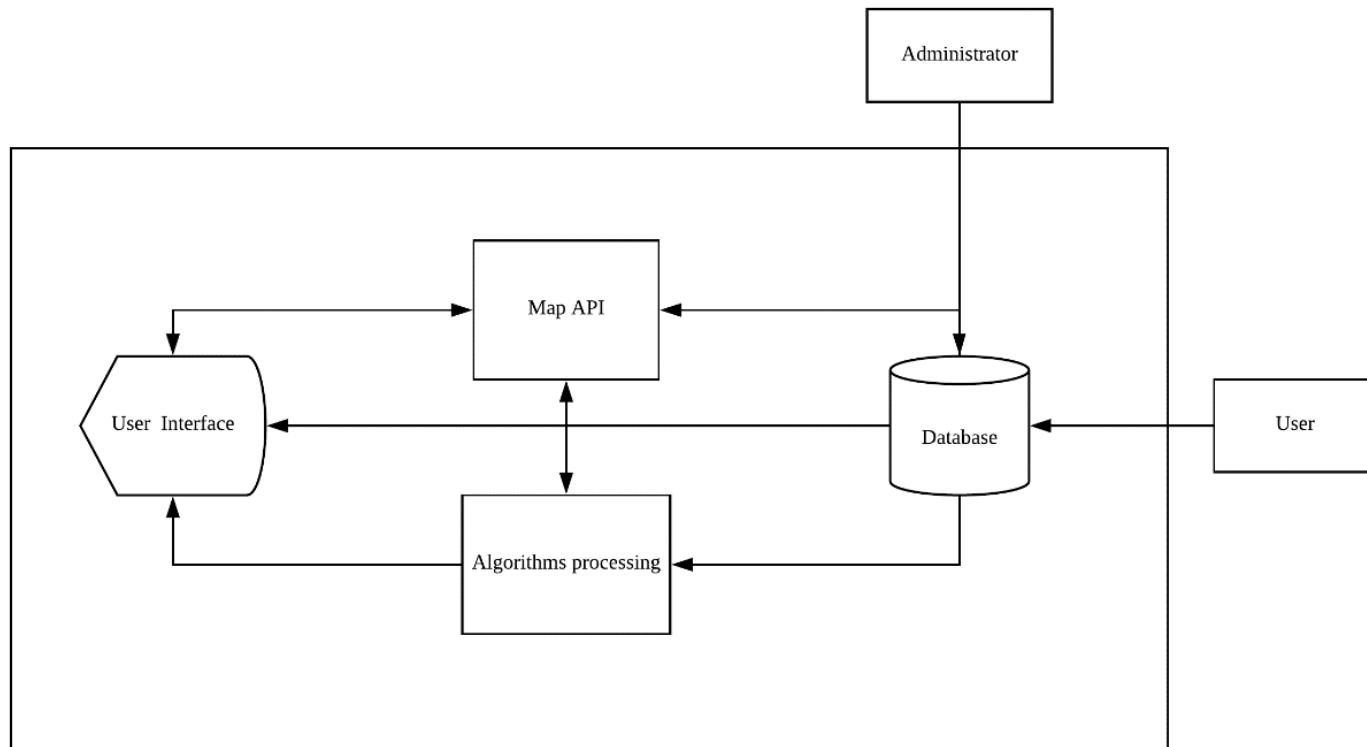
Recommend the best  
Travel route

- To report on users activities.
- tourist attractions.
- countries and cities.

# Anticipated documentation

- Preference Questionnaire
- Frequent Asked Questions
- Feedback Survey

# System Boundary Diagram

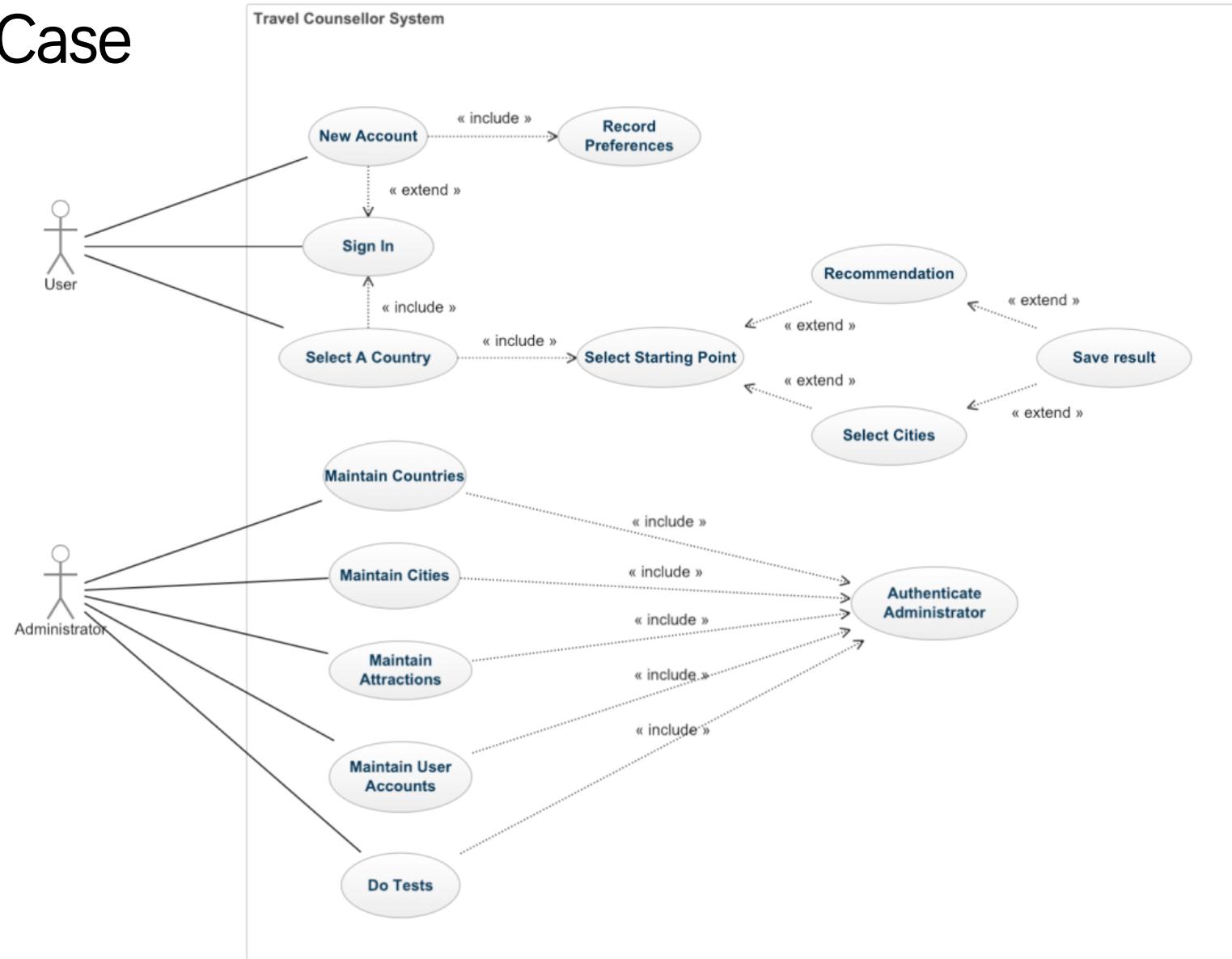


**Database:** preference, history queries, destination, attractions

**Algorithms:** route solution, Travelling time, distance, travel costs(Travelling Salesman, Dijkstra)

**Map API:** external navigation application

# Use Case



# User Views

Data	Access Type	User	Administrator
Countries	Maintain		X
	Search	X	X
	Report		X
Cities	Maintain		X
	Search	X	X
	Report		X
Attractions	Maintain		X
	Search	X	X
	Report		X
Registered Users	Maintain		X
	Search		X
	Report		X

# Non-Functional requirement

## Speed requirement:

- The number of processed transaction per second : Our team evaluates the number of processed transaction per second is 1000
- Event response time: Our team evaluates 100 ms as expected

## Size requirement:

Amounts of bytes of system : 200 megabytes for system size

## Ease of use requirement:

- Training time : half of hour
- Number of help frames : As much as possible, especially involves main function of system

## Security requirement:

- The system will have a secure login which complies with NIST Special Publication 800-63-1 authentication guidelines
- The system will allow user three times attempt and login before locking user out

## Reliability:

1. Mean time to failure : 1000000 operations one failure
2. Probability of unavailability : 1/1000000
3. Rate of failure occurrence : 1/1000000

## Robustness:

1. Time to restart after failure : 1~3 seconds
2. Probability of data corruption on failure : 1/1000000

## Portability

1. Percentage of target dependent statements
2. Number of target system

\*\*\*Both of two methods are hard to specify

# Methods of evaluation work

## Survey:

Conduct a survey to find out whether our product is suitable or convenient for user. This survey will be published after we implement demo version of product and our team will modify product according to suggestion of users

## Benchmark:

our team will use benchmark software or invite professional benchmark company to test for system. We analysis testing result which based on response speed, network security, robustness, reliability and draw conclusion whether we need to improve or optimize our product.

# Conduct of the Project and Plan

- Preparation stage
- Design stage
- Implementation stage

# Preparation stage

## Background research

- Data acquisition
- AI (machine learning model)
- Java programming (shortest path algorithm)
- GUI

# Data required

- Google map API
- User preference (acquire during user registration)
- Optional: tourism websites

# Design Stage

## **Six phrases of system design:**

- architectural design
- abstract specification
- interface design
- component design
- data structure design
- algorithm design

# Design Stage

Four parts of design:

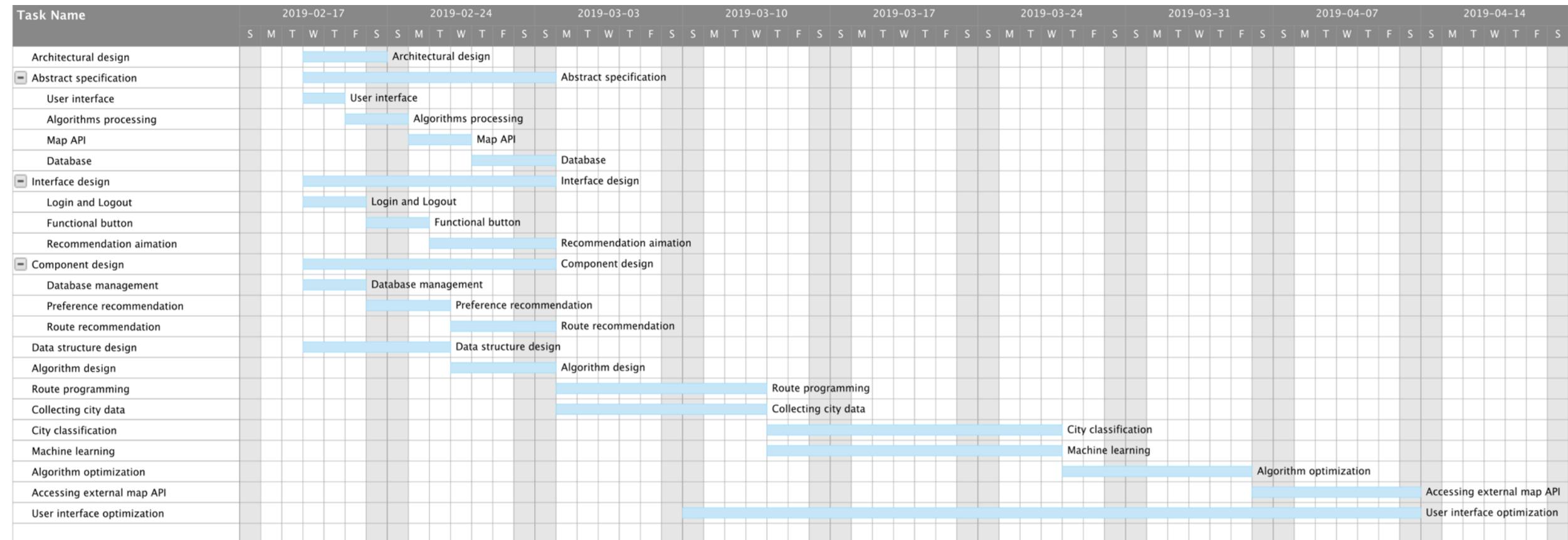
- Understand the problem
- Identify the potential solution
- Describe the abstraction of solution
- Repeat the processes above

**Mainly implement the object-oriented design method to design the whole system**

# Implement stage

- Hardware: Devices compatible with HTML
- Software: HBuilder, Visual Studio, Adobe Dreamweaver, Adobe Photoshop, Firefox, WordPress
- Testing: integration testing, interface testing, stress testing, black box testing and white box testing

# Gantt Diagram



# Risk Assessment

- User privacy
- Denied access to external map API
- Machine learning result beyond expectation
- Algorithm design is complex

# Major Challenges

- Balance between shortest path and user preference
- Acquiring reliable geographic information
- Maintain reliable database
- Design algorithm to consider most real-life factors

Thanks

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