# Introduction

Millennials are obsessed with all forms of social networking sites and our team think that Cathay Pacific can do something more than that, to combine a social platform with the the idea of crowdsourcing and to obtain customer data for analytics and chat bot from the platform, so we could provide a more customized and targeted service.

Cathay Travel will be an App that provide a whole new experience to explore travel destination. An AI chatbot will be included to aid users to identify destination for their next trip. Through shared travel blogs and branded travel content, users may get insights for their next trip. Data will be collected through each user interaction within the app, data analytics will be applied to identify user's preference and behaviour to provide personalized suggestion and discounts. At the same time, crowdsourcing technique will be applied to travel blogs uploaded to the system to identify destination information for the chatbot.

Use Case List

Use Case #	Use Case
UC01	Chat Bot : Find destination by list of events
UC02	Chat Bot: Find destination by country
UC03	Upload Travel Blog
UC04	Read Travel Blog
UC05	Searching
UC06	Purchase Ticket

Big Data Analytics
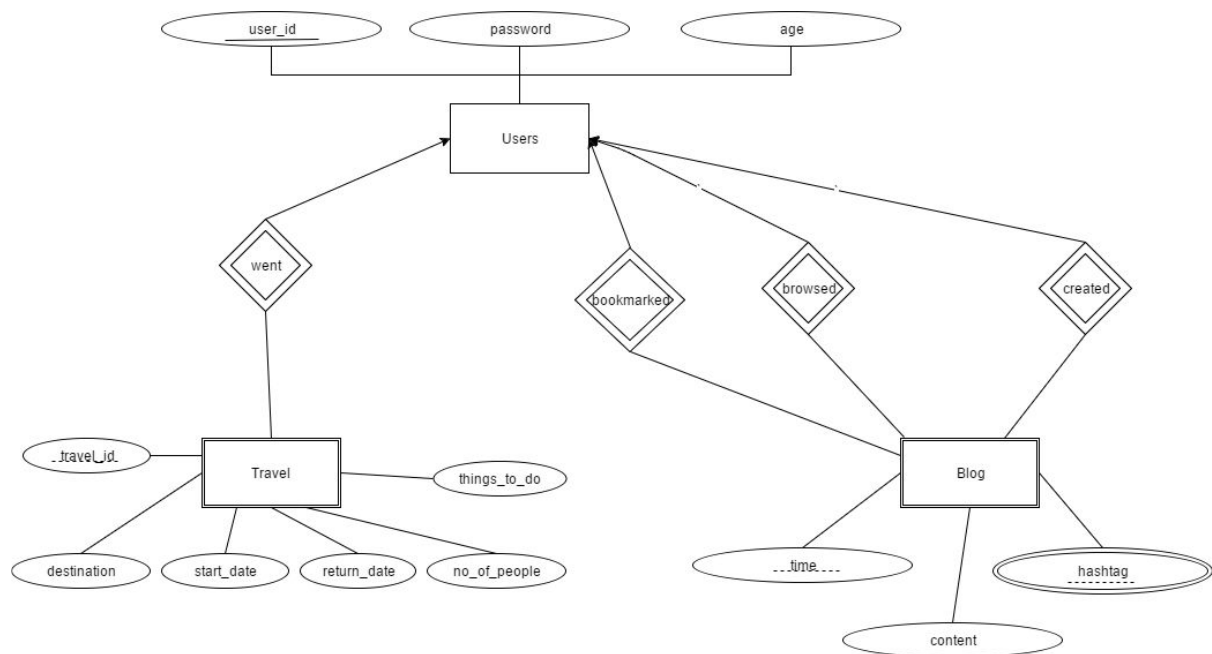
The data collected from Cathay Travel can be stored as the database diagram shown. Each user can have many trips. They can browse, create and bookmark different blog posts. The information about each customers' browsing and purchasing history can be analyzed by the Big Data analysis techniques such as kth nearest neighbor.

Working Mechanism
For the kth nearest neighbor, the feature matrix of each customer would be compared in term of distance. The closer the customers are, the higher weight would be put. Relevant travel posts from similar customers could be recommended.
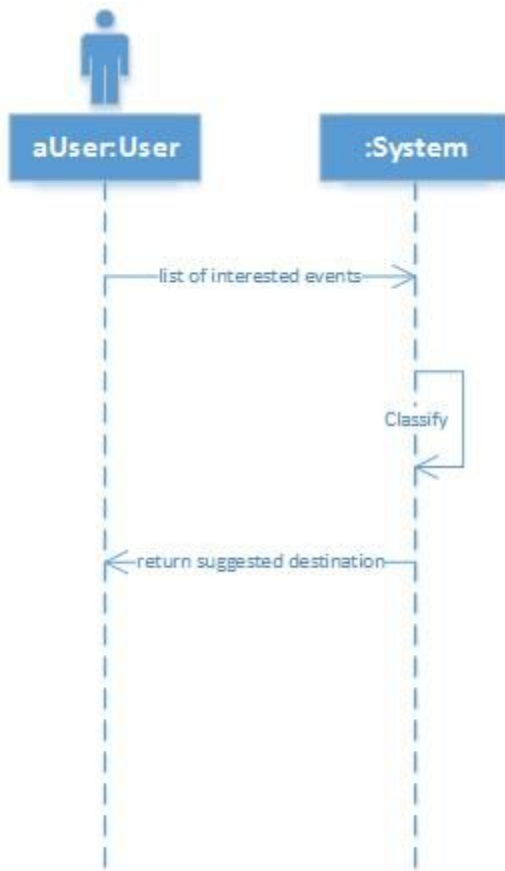In the another way, the recommendation can be functioned like a knowledge graph. Travel posts with same hashtags can be grouped in a network of nodes. Therefore, posts with similar hashtags would also be loaded onto the front page of the user interface.

Chat Bot AI

The basics working mechanism of AI chatbot was shown in the live demo. However, the chatbot could be extended to perform voice recognition and natural language processing (NLP) through the use of artificial intelligence (AI) and deep learning algorithm. The customers' order to flight or search for travel information can be done through personalized conversation. Their request would be translated into query to match the relevant information to the customer.

System diagram of major use cases

UC01 - Chat Bot: Find destination by list of events

UC02 - Chatbot: Find destination by country

UC03 - Upload Travel Blog