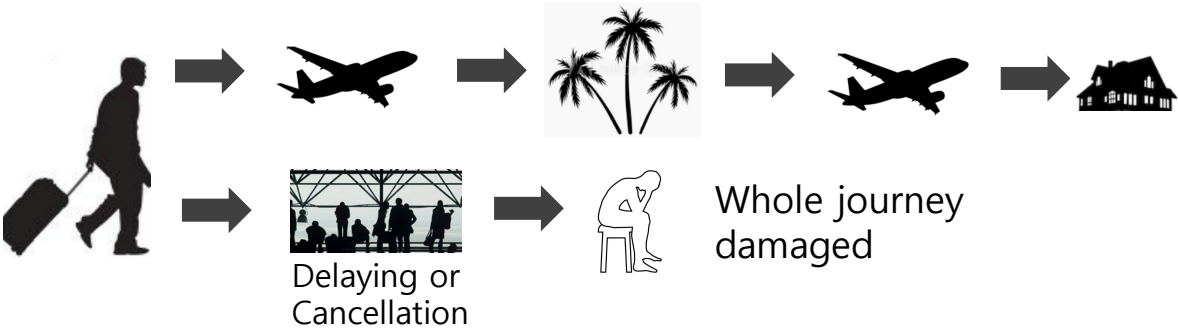# Android Developer Challenge
No More Creepy Journey

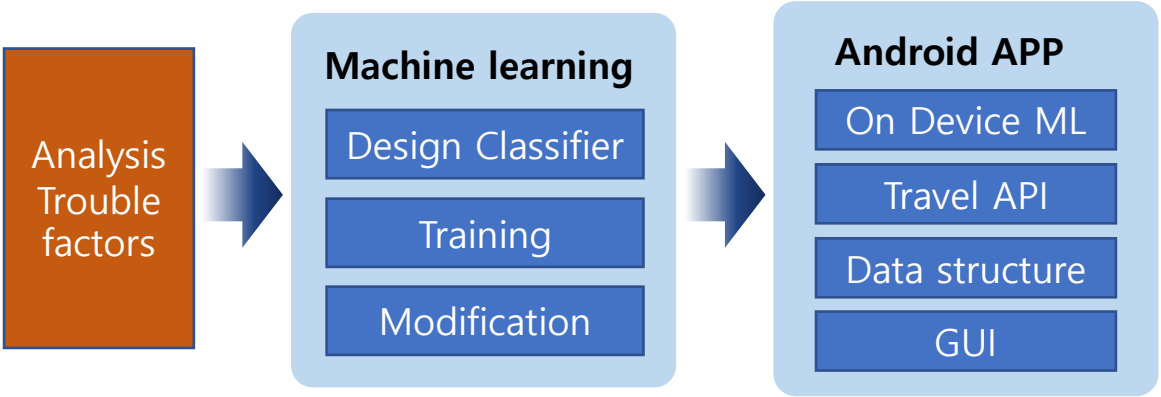KUNWOO CHANG

1. Title : No More Creepy Journey

2. Ideas

The risks of travel make to destroy whole schedule. This APP helps to reduce the risks during journey. It will prevent the risks and manage the travel until going home.
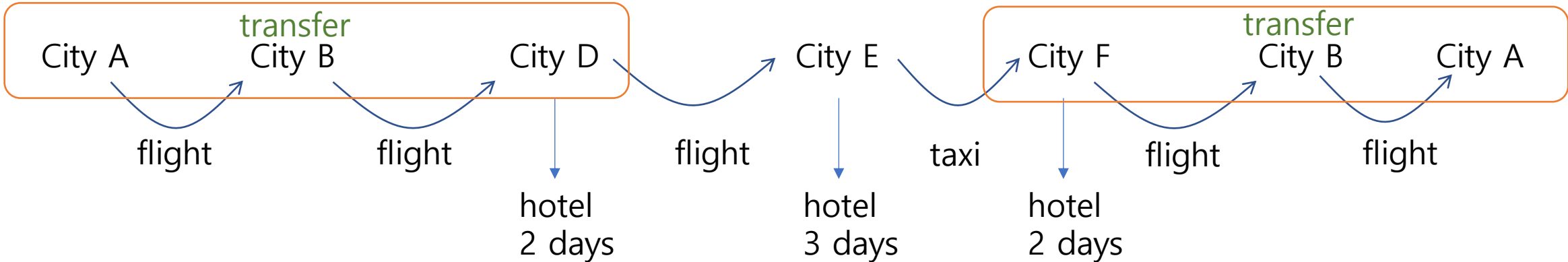
Delaying or Cancellation

Whole journey damaged

3. Plan

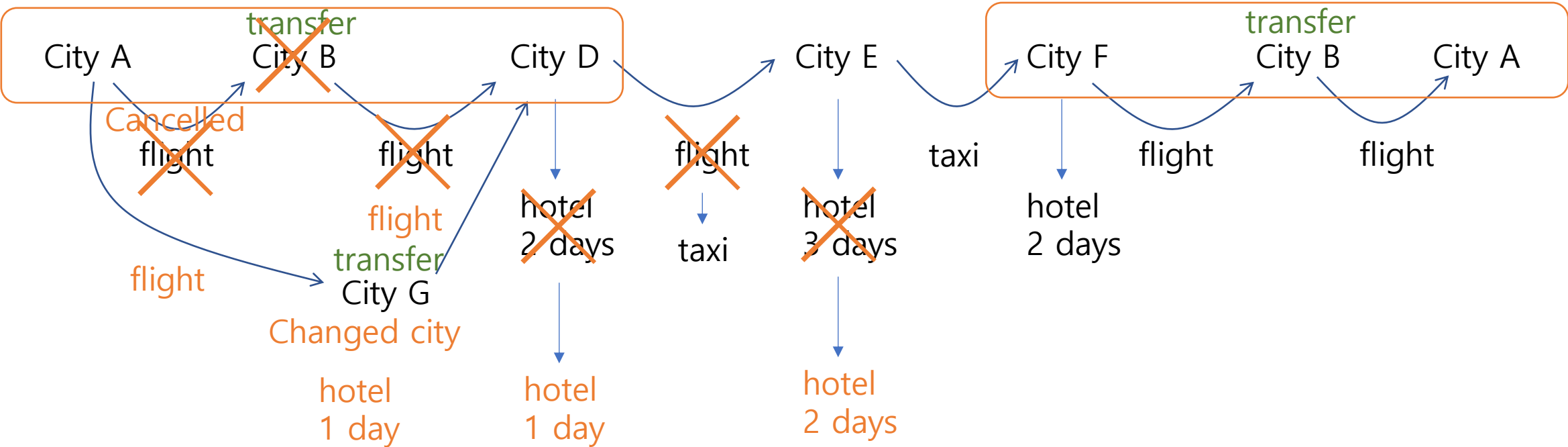| Classifier		December	January	February	March	April
Classifier	Design	■				
	train	■				
	Modifying		■			
Design service	UI, features	■				
Bootcamp			■			
Finalize details	UI, features		■			
APP Development	API Implementation			■		
	API combine			■		
	Classifier combine			■		
	GUI development			■		
Test					■	
Release						■

Analysis Trouble factors

Machine learning
- Design Classifier
- Training
- Modification

Android APP
- On Device ML
- Travel API
- Data structure
- GUI

Case study – what happened after flight cancel

Original plan

City A — transfer — City B — City D — City E — City F — transfer — City B — City A

flight — flight — flight — taxi — flight — flight

hotel 2 days — hotel 3 days — hotel 2 days

Changed schedule because of flight cancel

City A — transfer — City B — City D — City E — City F — transfer — City B — City A

Cancelled flight — flight — flight — taxi — flight — flight

flight
transfer
City G
Changed city

flight

hotel 2 days — taxi — hotel 3 days — hotel 2 days

hotel 1 day — hotel 1 day — hotel 2 days
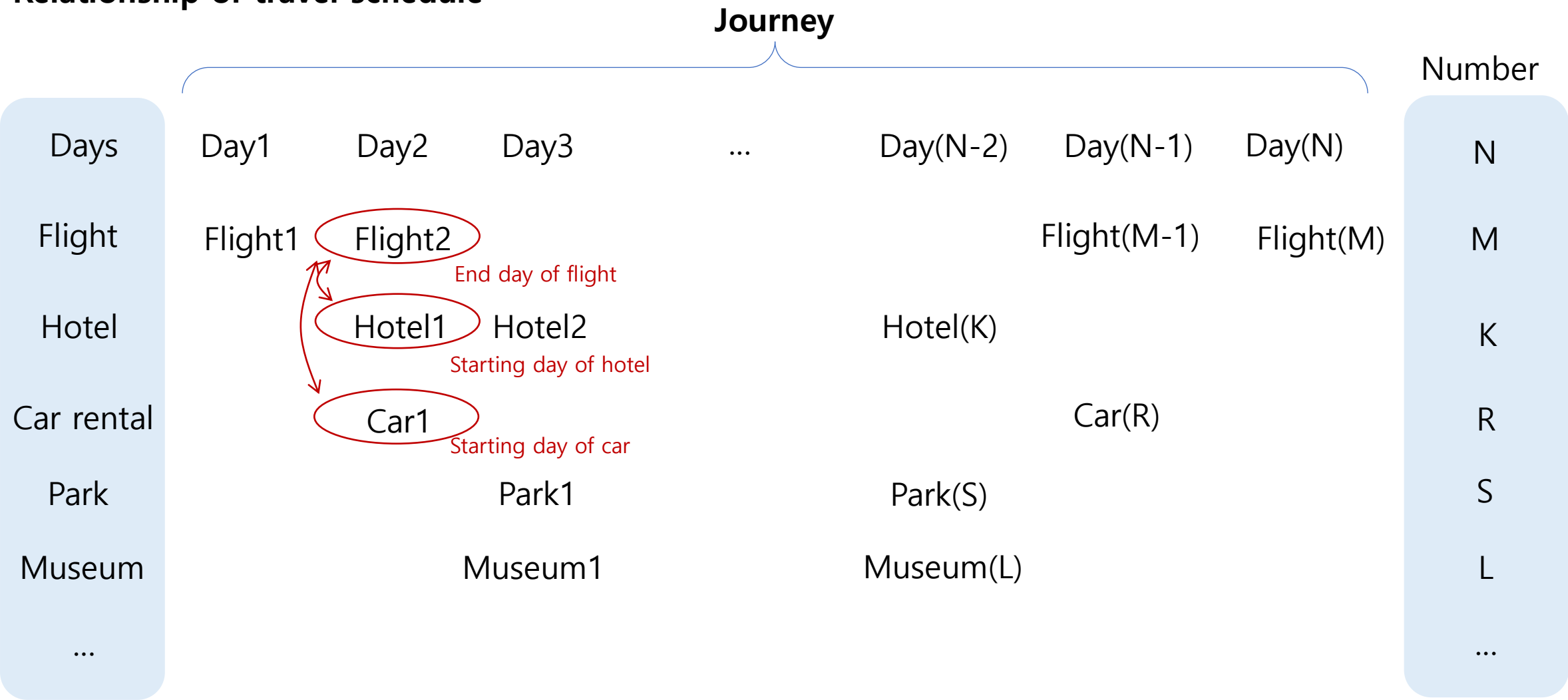
Analysis of changes

Changed schedule with factor

Heavy rain makes flight cancel. The flight cancel makes to change the other schedules.
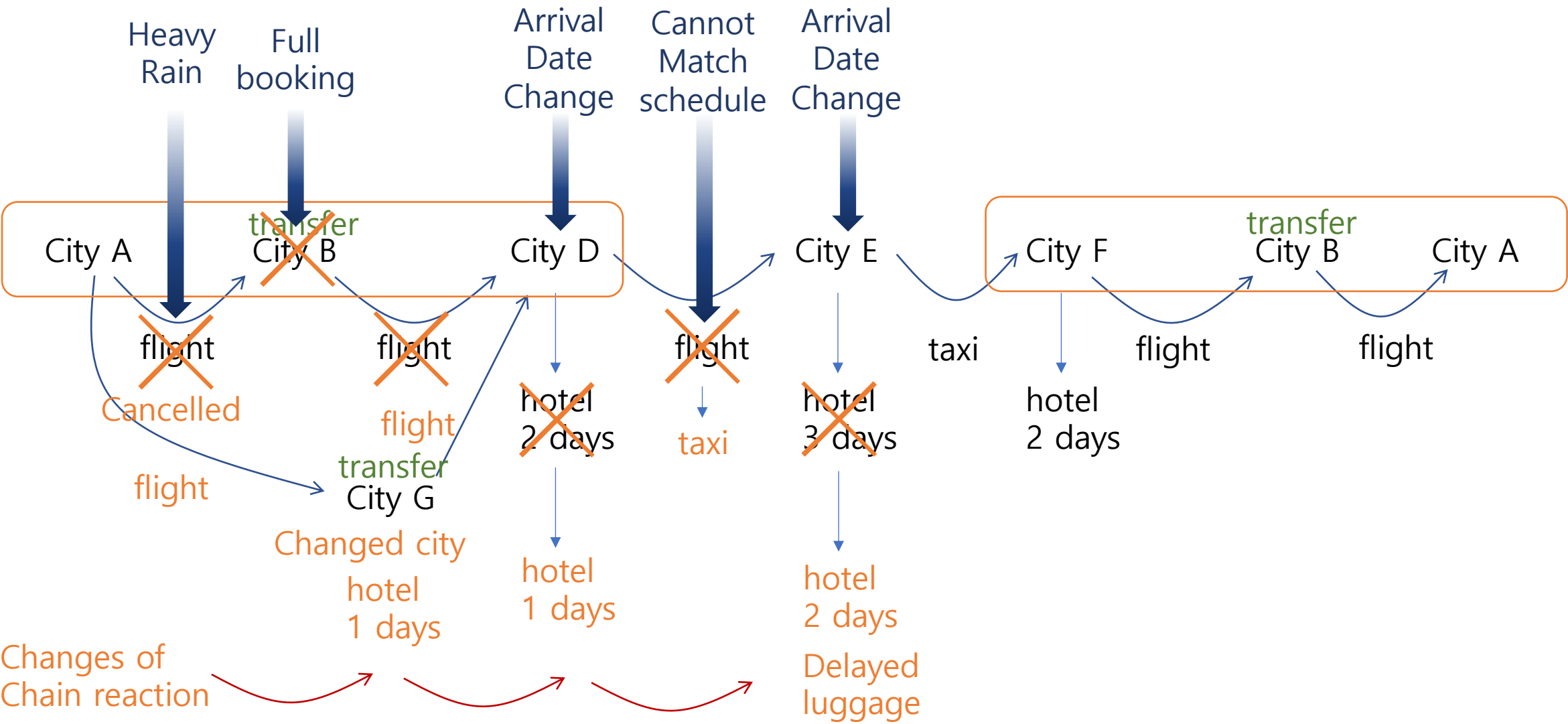
Analysis of changes

Relationship of travel schedule

Journey

Number

	Day1	Day2	Day3	...	Day(N-2)	Day(N-1)	Day(N)	N
Days								
Flight	Flight1	Flight2				Flight(M-1)	Flight(M)	M
Hotel		Hotel1	Hotel2		Hotel(K)			K
Car rental		Car1				Car(R)		R
Park			Park1		Park(S)			S
Museum			Museum1		Museum(L)			L
...								...

End day of flight

Starting day of hotel

Starting day of car

Travel items are related starting day. Some items starting day is the other item's end day.
→ **Plan to make relationship for travel schedule**

Analysis of changes

The reasons of changes. → Risk factors

Flight	Weather, mechanical problems, departure airport issues, …
Hotel	No arrival, booking error, small room, Remodeling …
Car rental	No arrival, car accident, car repairing, …
Park	No arrival, Changed price, No opening date, Under construction, …
Museum	No arrival, Changed price, No opening date, Under construction, …
…	

Machine Learning Classifier

Plan to make machine learning classifier based on trouble data.

Trouble factors

Flight cancellation
(Kaggle)

IATA_CODE					
Airline Identifier	A String	UA	7%	Valid ■	14 100%
		AA	7%	Mismatched ■	0 0%
		US	7%	Missing ■	0 0%
		F9	7%	Unique	14
		Other (10)	71%	Most Common	UA 7%

AIRLINE					
Airport's Name	A String	United Air Lines Inc.	7%	Valid ■	14 100%
		American Airlines Inc.	7%	Mismatched ■	0 0%
		US Airways Inc.	7%	Missing ■	0 0%
		Frontier Airlines Inc.	7%	Unique	14
		Other (10)	71%	Most Common	United Air 7%

Hotel reviews
(Kaggle)

⊞ hotel-reviews.csv (34.14 MB)		5 of 5 columns ▾	Views		
A **User_ID** ▼	A **Description** ▼	A **Browser_Used** ▼	A **Device_Used** ▼	A **Is_Response**
ID	Customer Review	Browser used to post the review	Device used to post the review	Sentiment/Polarity of the review
38932 unique values	**38932** unique values	**Firefox** 19% **Edge** 18% Other (9) 63%	**Desktop** 39% **Mobile** 38% Other (1) 23%	**happy** 68 **not happy** 32
1 id10326	The room was kind of clean but had a VERY strong smell of dogs. Generally below average but ok for a overnight stay if you're not too fussy. Would consider staying again if the price was right. Breakf...	Edge	Mobile	not happy

Travel APIs

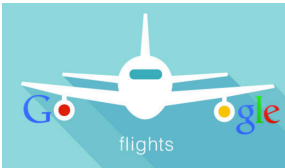Plan to implement logic structure based on travel API.

APIs

Hotel API
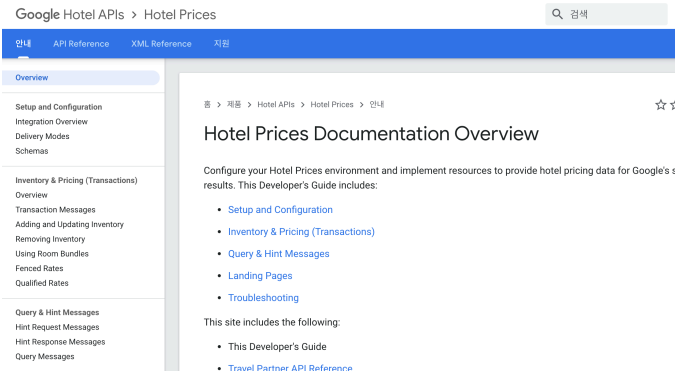
Google API, Booking API, Kayak, Hotels API, ...

Flight API

Google API, Skyscanner API, ...

Weather API

Google API, OpenWeatherMap API, Weatherbit API, ...

...

Comfortable GUI

Plan to make simple and comfort GUI.

Complex Schedule
. Flight info
. Hotel info
. Park, museum, etc.

➡ Easy management

Test and Release

- Unit test
    . Classifier, Machine Learning modules
    . API features for each functions
    . GUI modules

- Integration test

- Release : before May 1st

Future Action

Plan to add the other risk factors such as restaurant, criminal area, taxi, political situation, etc.

THANKS