

FLIGHT DELAYS



Data Engineering Project

Delayed Flight-Data Analysis

Dennis Ssekamaanya

Delayed-Flight Data:

- Flight delays happen everyday but still remain a surprise occurrence
- Passengers never know / are worst affected
- Airlines must delay track-records
- Airports do the same
- Could customers know in advance ? Damage limitation



The Project Task

- ❑ Build a data pipeline feeding into a client dash-board to extract:
- ❑ Airports/Layovers to Avoid
- ❑ Airlines to Avoid
- ❑ Predict Flight Delay



The Data

- 2015 Flights data from kaggle.com
- 5m records plus
- Airlines, Airports, Flights, Longitude & Latitude

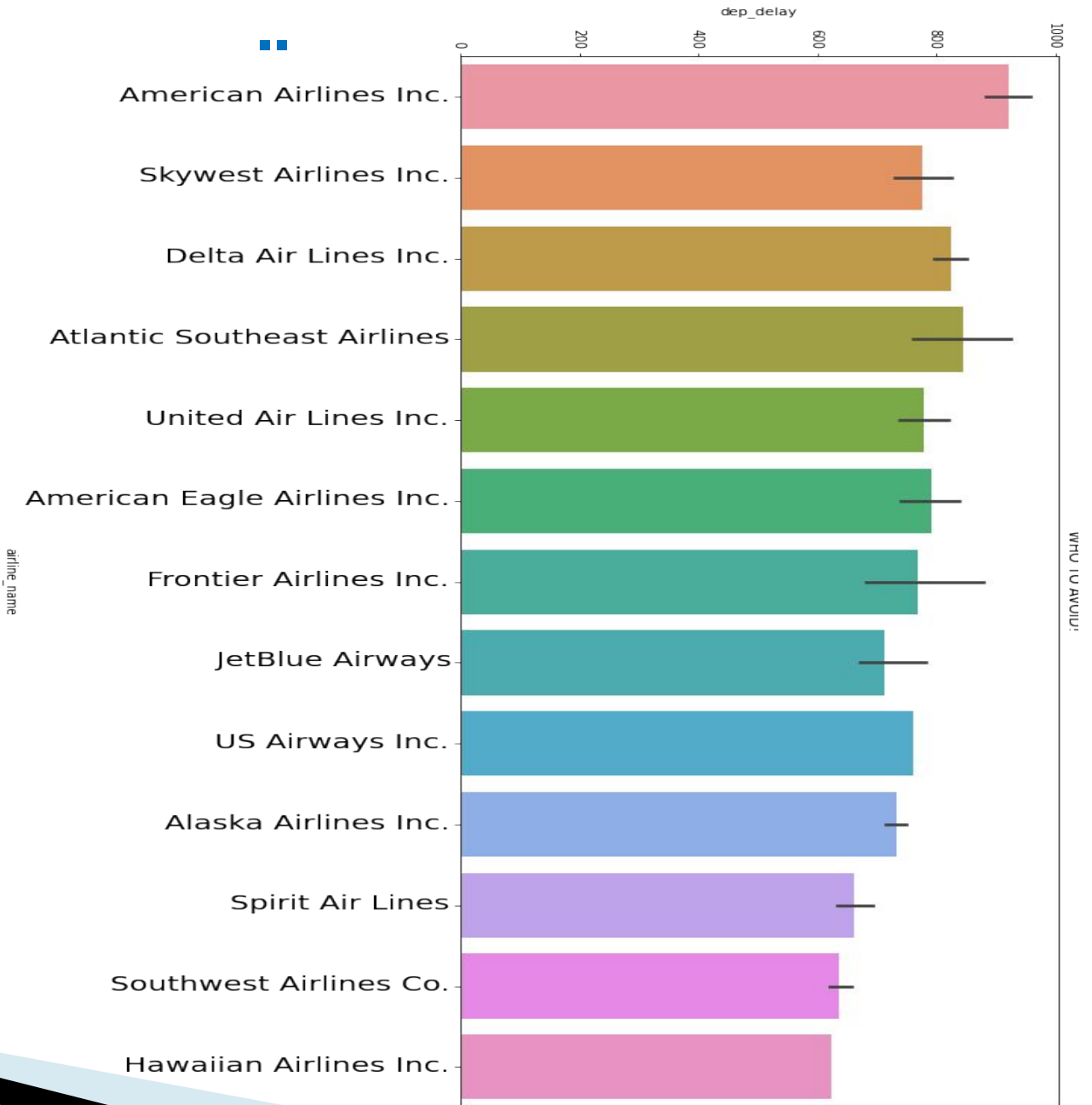


Tools

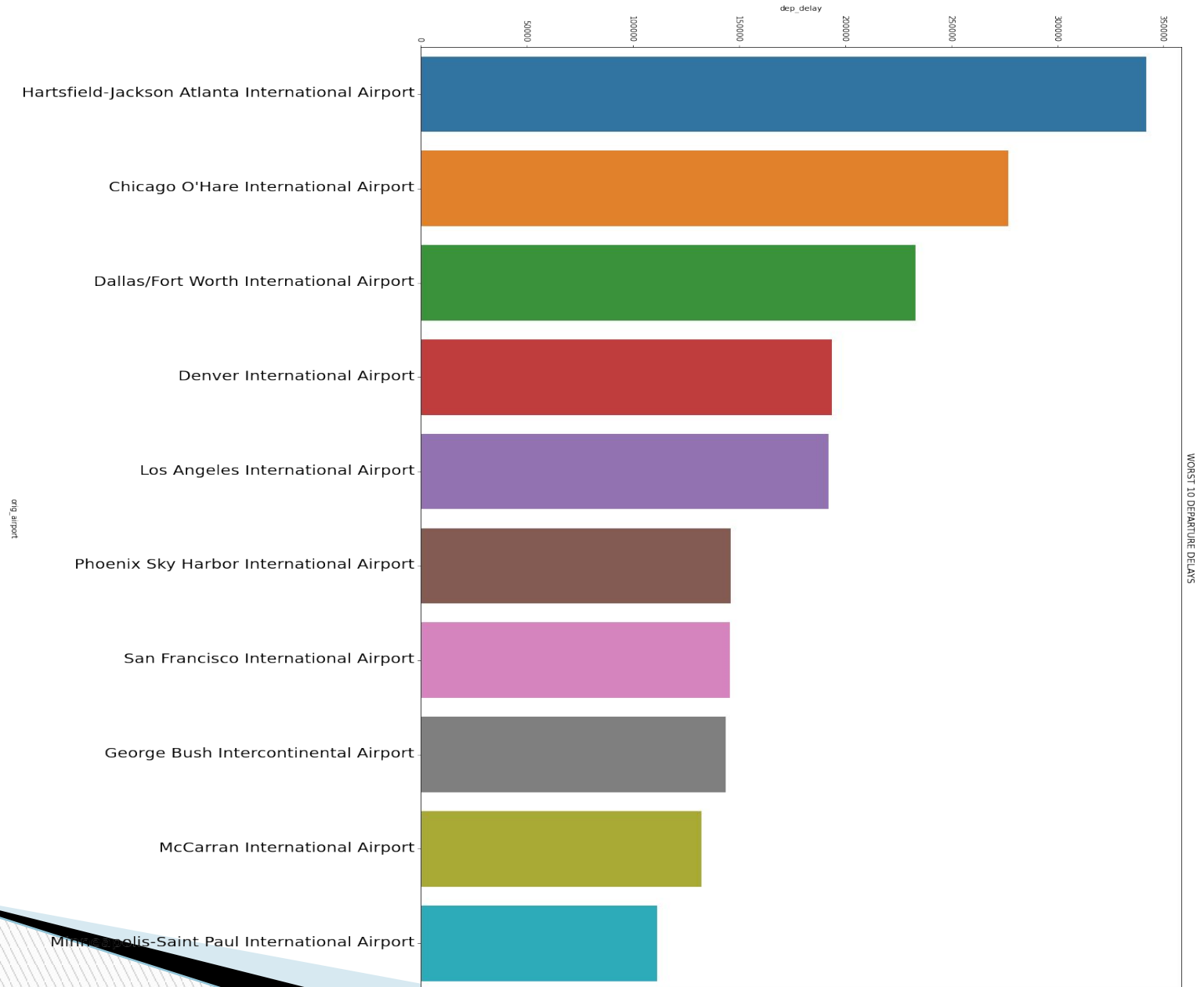
- - Python: SQL,
- - Pandas,
- - Matplotlib, Seaborn
- - Streamlit



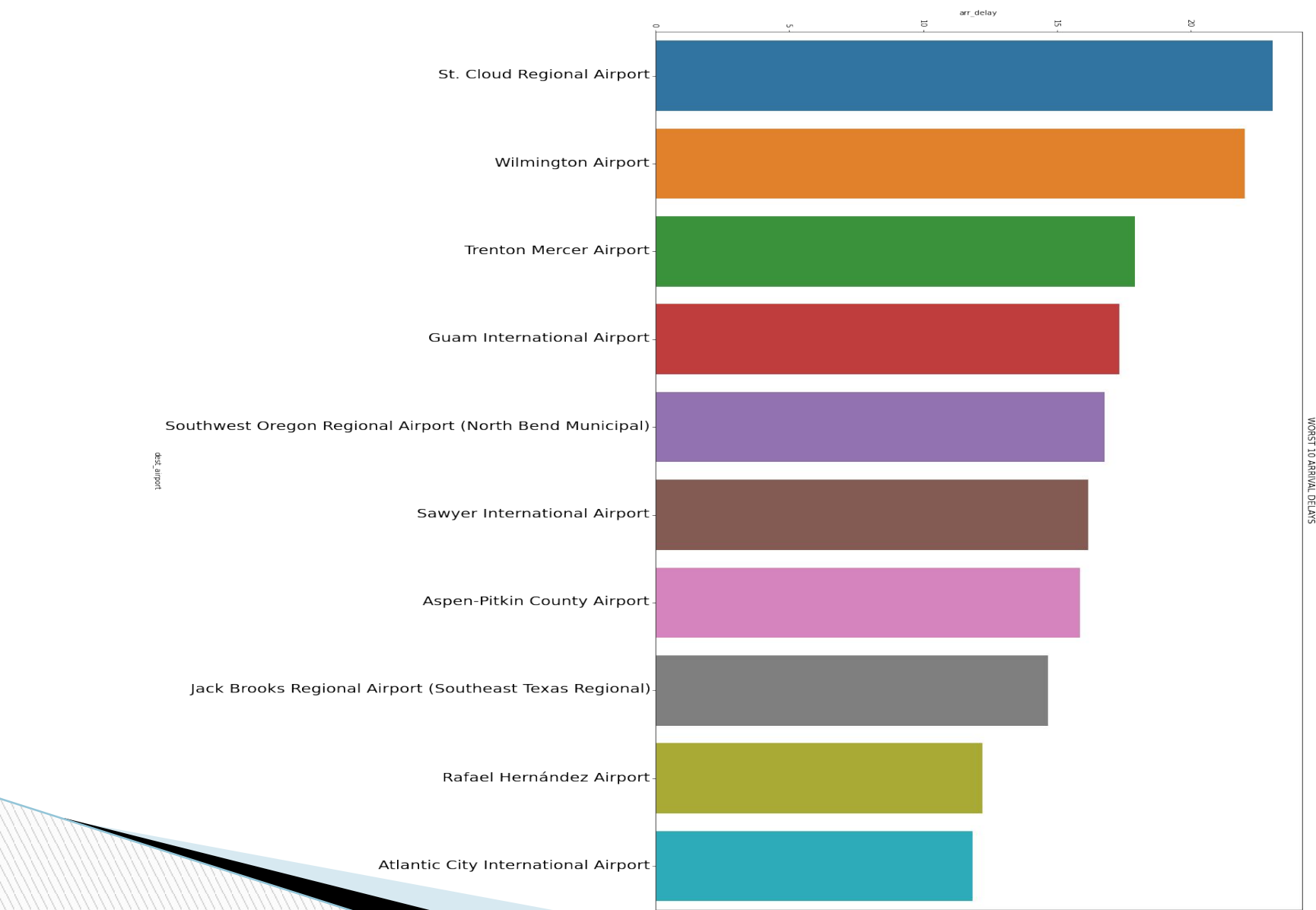
EDA: Airline To Avoid



EDA: Worst Departure Delays



Worst 10 Arrival Delays



App Demo...



▣ Here goes.....

☒ Departure Delays

Select Departure Airport

Lehigh Valley International Airport

☒ Departing Airline

Select Airline

United Air Lines Inc.

☒ Arrival Airport

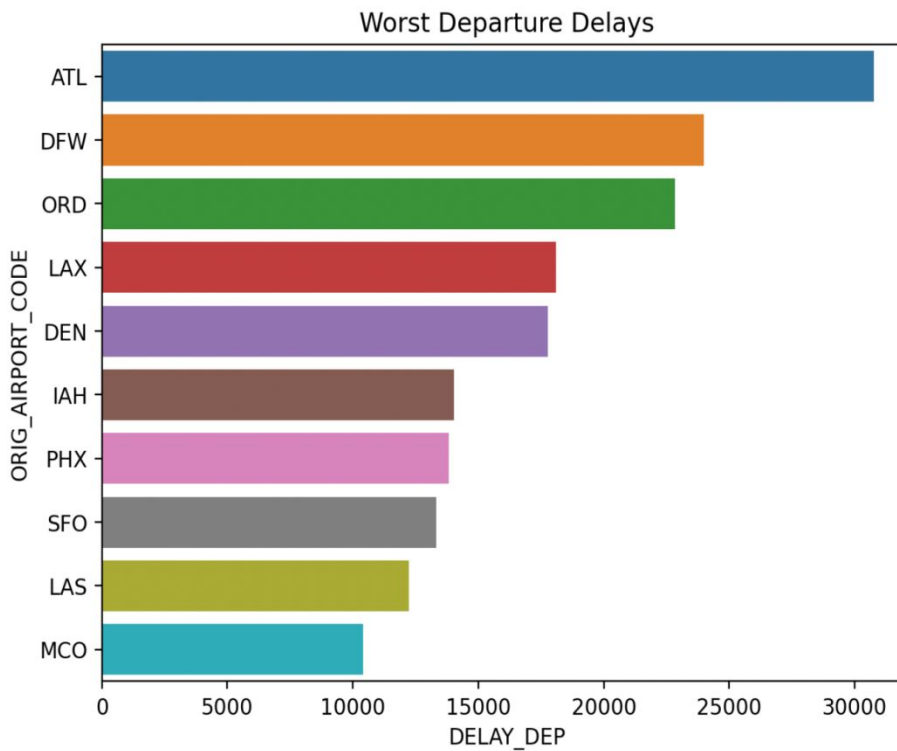
Select Arrival Airport

Lehigh Valley International Airport

Welcome to DLinks Flight Dashboard

Flight Selection

Airports: Worst Departures



☒ Departure Delays

Select Departure Airport

Lehigh Valley International Airport ▾

☒ Departing Airline

Select Airline

United Air Lines Inc. ▾

☒ Arrival Airport

Select Arrival Airport

Lehigh Valley International Airport ▾

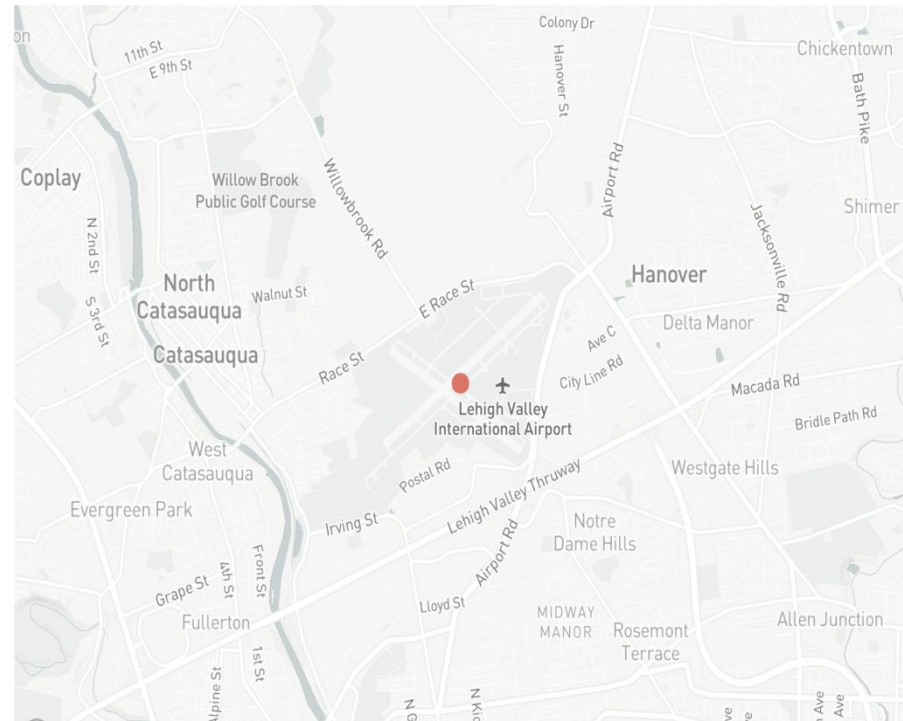
Welcome to DLinks Flight Dashboard

Flight Selection

Airports: Worst Departures

Airports: Worst Arrivals

Update Map



conclusion and future work..

- Complete prediction utility
 - Extract route-specific flight-delay patterns
- Thank you.

Departures				Arrivals			
Terminal	Flight	Destination	Time Gate Remark	Terminal	Flight	Destination	Time Gate Remark
Terminal D	BA117	Edinburgh	06:45 40	Terminal A	RY125SC	Basel	06:40 110A
Terminal B	CX1347	Bucharest	06:50 22	Terminal B	AC 566	Manchester	06:40 110A
Terminal A	BA165	Brussels	06:55 41 CHECK-IN	Terminal C	KL1256E	Tel Aviv	06:45 110A
Terminal D	BA3925	Amsterdam	07:05 42 CHECK-IN	Terminal C	KF 102C	Brussels	07:00 110A
Terminal D	BA872	Istanbul	07:10 02 CHECK-IN	Terminal A	RN 800	Kviv	07:05 110A
Terminal D	AA6706	Copenhagen	07:15 23 CHECK-IN	Terminal D	DV9581	Vancouver	07:10 110A
Terminal Z	AY6554	Glasgow	07:15 43 CHECK-IN	Terminal D	Y1125SC	Munich	07:15 110A
Terminal B	AF2651AY	Zurich	07:15 11 CHECK-IN	Terminal A	RY 105	Beijing	07:15 110A
Terminal A	DL8611CO	Rome	07:25 12 CHECK-IN	Terminal C	K8802	Shanghai	07:15 110A
Terminal D	AZ 300AF	Newcastle	07:35 45 ON TIME	Terminal A	RY815	Taipei	07:15 110A
Terminal A	51007DL	Dusseldorf	07:35 31 ON TIME	Terminal Z	T10	Dubai	07:15 110A
		Berlin	07:40 04 ON TIME	Terminal C	RY751Z	Paris	07:15 110A
		Heiden	07:45 24 ON TIME	Terminal B	BE 780	Singapore	07:15 110A
			07:50 25 ON TIME	Terminal A	AF3300FE	Frankfurt	07:15 110A
			07:55 46 ON TIME	Terminal D	BE 397	Berlin	07:15 110A
			08:00 47 ON TIME	Terminal A	SV58190	New York	07:15 110A
				Terminal A	CP979 80	Los Angeles	07:15 110A
				Terminal A	EK 607	Hong Kong	07:15 110A
				Terminal A	AF1255	Zurich	07:15 110A
				Terminal A	CX 605	Sydney	07:15 110A
				Terminal B	BA 125	Seoul	07:15 110A
				Terminal D	CC8078	Beijing	07:15 110A
				Terminal A	CC888	London	07:15 110A

■ Dennis Sseamaanya