



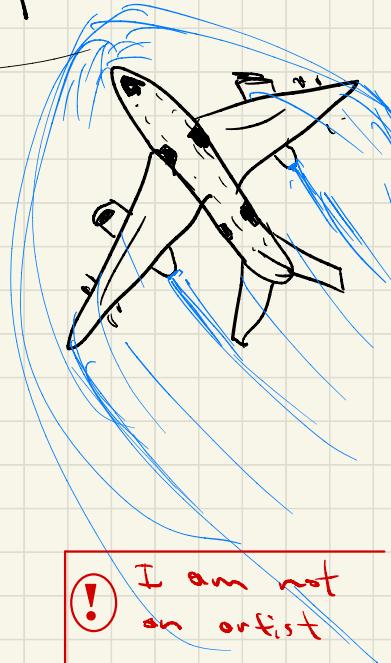
# Flight Project

- API Code done first

- shows...

- Airline
- Dep. time
- Arr. time
- status
- Flight No.
- Estimate + Actual\*
- Estimate + Actual\*
- Dep/Arr. Delay

(i) \* = not all have...  
initially at least



## Plan

- Raw load into "Lake"

Hourly Data
UUID
PK
- Timestamp
- Airline code
- Plane code
- Departure time
- estimated, actual
- Arrival time
- estimated, actual
- status
- Dep. Delay
- Arr. Delay

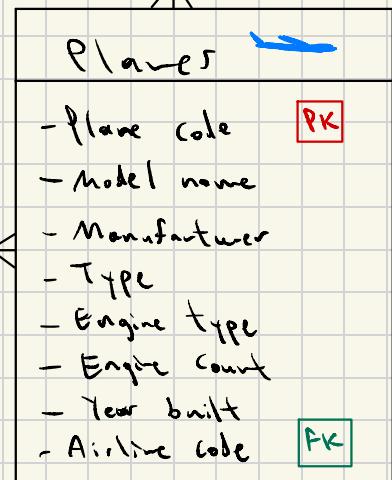
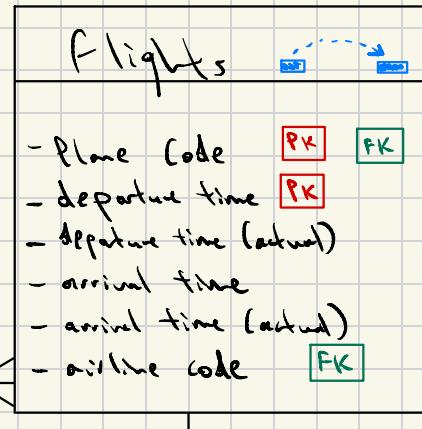
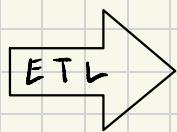
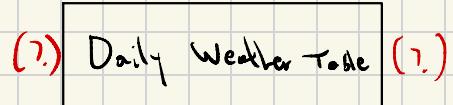
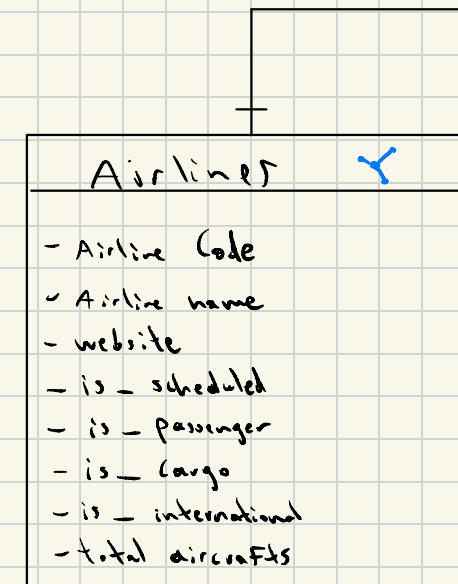
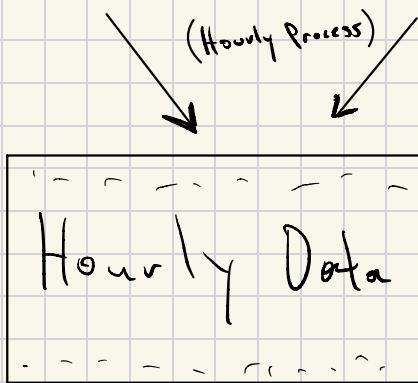
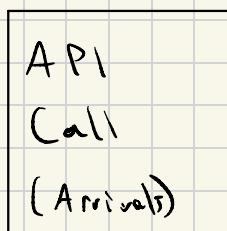
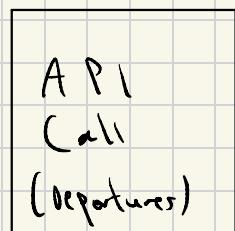
- Initial data received from Airlabs.co API

- 1000 free calls / month
- Hourly calls
- $24 \times 31 = 744$  calls / mo
- Load in these fields
  - "Raw" data
  - UUID for each + timestamp
  - can track each individual entry
- ETL this data into flight history table
  - use for populating and updating
- Transformation rules
- Next Page

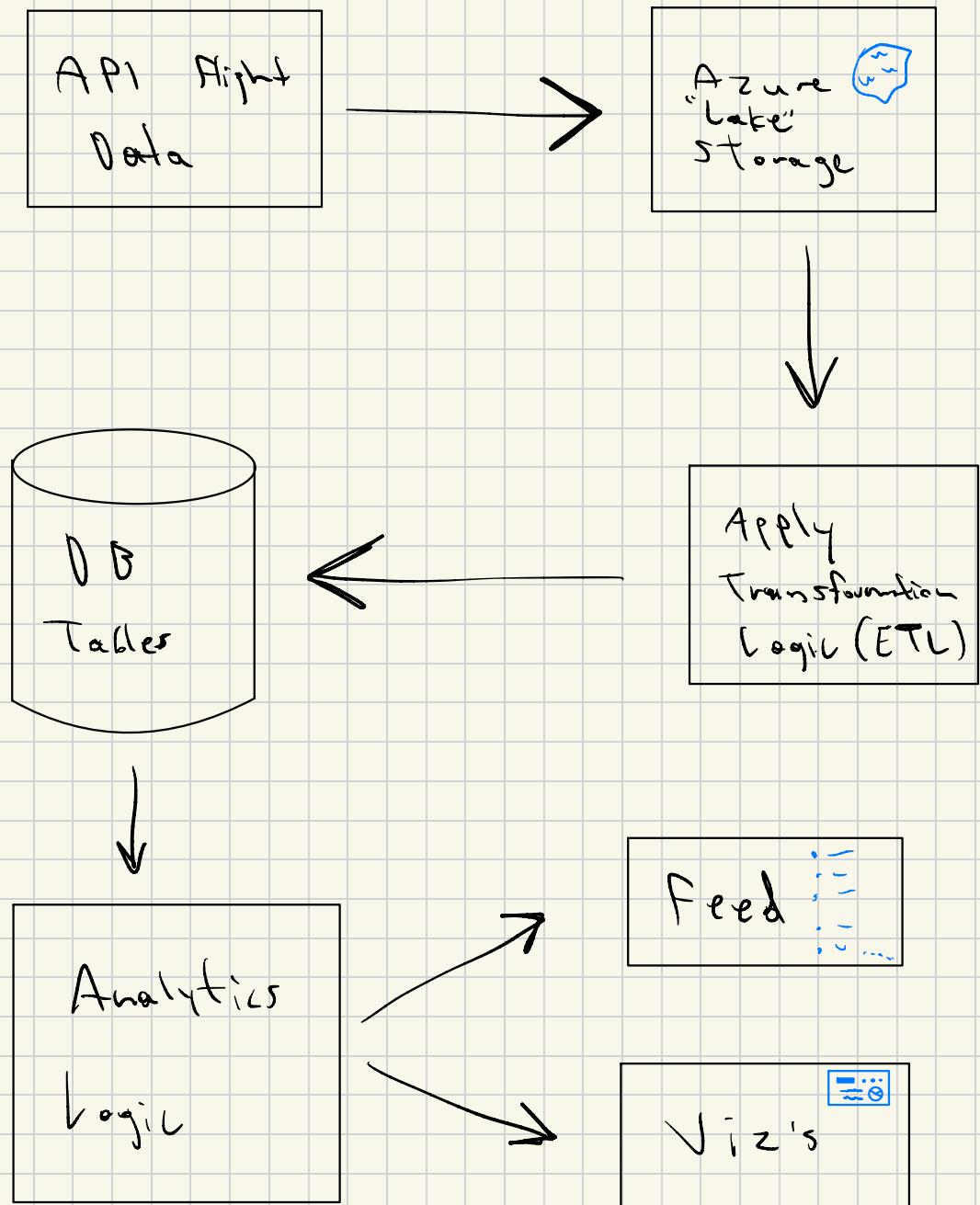
# Transformation (Take to DW)

- Every hour, take latest load
  - for every row loaded:
    - if plane code and dep-time already in flights:  
update flight record to reflect current data
    - else:
      - add as new record
      - if plane code not in planes table:  
add as new record (other fields null)
      - if airline code not in airline table:  
add as new record (other fields null)
  
- Every week (?)
  - for all rows in plane table with Null values:
    - run API to get data and update
    - .... (likewise for airline table)

# Scheme



# Workflow





## Analytics

① find out how many gates/runways MIA has

- on time arrival %
- on time departure %
- Avg arrival delay (min)
- Avg departure delay (min)
- Avg flight turnaround time (arr  $\rightarrow$  dep)
- % cancelled
- % diverted
- Compare based on carrier - Rank???
- no. delayed over time
- Rate of gate availability for arriving flights
  - Gate utilization efficiency
- Most commonly used aircraft-



## ML Ideas

- Weather AI
  - another table for weather (?)
  - Predict delays given weather
- Delays affected by airport traffic level?
- Anomaly detection of traffic?
  - clustering





# Site Design

- Home page
  - Hero section
    - brief intro, aim of site
    - Real-time ticker
  - RSS type feed / schedule
  - Latest crowd analytics/ KPIs
- Dashboard
  - Analytics
    - tabs or sections for all different visuals / reports
      - historic, KPIs, metrics, rank
  - Insights
    - Place for ML, predictions, anomaly detection
  - Info
    - info on airliner/planes
    - could place ranks here for airline/planer along with the info
- (?) - Data
  - section to query data? if possible
  - or to just download it
- About
  - About the Dev.
  - Methodology
    - section to place report of how it was done
    - video?
- Footer
  - Contact info
  - links
    - LinkedIn, Github repository, sources of data, etc..

