1. **Undertake the following exercise from the perspective of a stakeholder in your case study.**

What is your Business?

My business is "**Business Aviation (NYAirlines)**". It is the use of some aircraft for a business purpose. It provides communities large and small with fast, flexible, safe, secure and cost-effective access to destinations across the country and around the world.

Who is the Stakeholder?

In my case, there are 2 key stakeholders. They are:

i. **Airport Management Authority.**
ii. **Customer Care Department**

What is your KPI?

Key performance indicators (KPIs) of my business are:

i. **To deliver a quality service.**
ii. **Ensure Customer Satisfaction**

List & clarify relevant business question(s) that need to be answered for the Investor

Business Questions related to Quality Service KPI

- How many flights which are delayed per year?
- How many flights diverted per year?
- What's the number of arrival delays per year?
- What's the number of departure delays per year?
- What's the number of flights cancelled per year?
- What are the reasons behind flight cancellation?

Business Questions related to Customer Satisfaction KPI

- What are the different complains of a customer?
- How many complains are resolved in the span of one year?
- What the different types are of complains from the customer?
- What is the total number of compensation per complaint type per year?
- What is the compensation type offered to customers?

What current tables and columns are required to answer questions above?

For questions related to **Quality Service KPI**, we need **"Flights_2015_2000_rows (table)"** with the following columns.

- YEAR
- FLIGHT_NUMBER
- DEPARTURE_DELAY
- ARRIVAL_DELAY
- DIVERTED
- CANCELLED
- CANCELLATION_REASON

For questions related to **Customer Satisfaction KPI**, we need **"COMPLAINT_NYAirlines (table)"** with the following columns.

- COMPLAINT_TYPE
- DESCRIPTION
- COMPLAINT_STATUS
- COMPENSATION_AMNT
- COMPENSATION_TYPE

What dimensions that would hold the values (attributes) identified above?

The dimension that will hold the values (attributes) identified above are:

- COMPLAINT_NYAirlines (table)
- Flights_2015_2000_rows (table)

Identify lowest level of granularity (for each Dimension)

For Flights_2015_2000_rows (Table)

- Arrival_Delay and Departure_Delay will become **total_delay_time.**
- Elapsed_Time and Air_Time will become **total_time**.
- Air_System_Delay, Security_Delay, Airline_Delay, Late_Aircraft_Delay, Weather_Delay will become **Total_Delay**

For COMPLAINT_NYAirlines (Table)

The_Year, The_Month, The_Day will become **Date.**

Identify the measures (calculations or facts) to support the business questions (your reports)

Measures related to Quality Service KPI

- Total flights delayed per year
- Total flights diverted per year
- Total arrival delays per year
- Total departure delays per year
- Total flights cancelled per year
- Reasons behind flight cancellations

Measures related to Customer Satisfaction KPI

- Different complains of a customer
- Total complains resolved per year
- Reasons behind customer complains
- Total compensation per year
- Compensation type offered to customers

Define (name, data type) suitable attributes of the Dimension tables

COMPLAINT_NYAirlines Table:

i. COMPLAINT_ID(**int)**
ii. FLIGHT_ID_NO(**int)**
iii. TAIL_NUMBER**(varchar)**
iv. THE_YEAR**(DateTime)**
v. THE_MONTH**(DateTime)**
vi. THE_DAY**(DateTime)**
vii. COMPLAINT_TYPE**(text)**
viii. DESCRIPTION**(text)**
ix. COMPLAINT_STATUS**(text)**
x. ALLOCATED_TO**(varchar)**
xi. COMPENSATION_AMNT(**int)**
xii. COMPENSATION_TYPE(**int)**
xiii. FK1_CUSTOMER_ID**(varchar)**

Flights_2015_2000_rows Table:

i. Flights_2015_key **(int)**
ii. YEAR**(DateTime)**
iii. FLIGHT_NUMBER(**int)**
iv. TAIL_NUMBER**(varchar)**
v. ORIGIN_AIRPORT **(text)**
vi. DESTINATION_AIRPORT **(text)**
vii. SCHEDULED_DEPARTURE**(DateTime)**
viii. DEPARTURE_TIME**(DateTime)**
ix. DEPARTURE_DELAY**(DateTime)**
x. TAXI_OUT**(DateTime)**
xi. WHEELS_OFF**(DateTime)**
xii. SCHEDULED_TIME**(DateTime)**
xiii. ELAPSED_TIME**(DateTime)**
xiv. AIR_TIME**(DateTime)**
xv. DISTANCE**(int)**
xvi. WHEELS_ON**(DateTime)**
xvii. TAXI_IN**(DateTime)**
xviii. SCHEDULED_ARRIVAL**(DateTime)**
xix. ARRIVAL_TIME**(DateTime)**
xx. ARRIVAL_DELAY**(DateTime)**
xxi. DIVERTED **(text)**
xxii. CANCELLED **(text)**
xxiii. CANCELLATION_REASON **(text)**

xxiv. AIR_SYSTEM_DELAY **(text)**
xxv. SECURITY_DELAY **(text)**
xxvi. AIRLINE_DELAY **(text)**
xxvii. LATE_AIRCRAFT_DELAY **(text)**
xxviii. WEATHER_DELAY **(text)**

Define (name, data type) the Fact table (keys and measures)

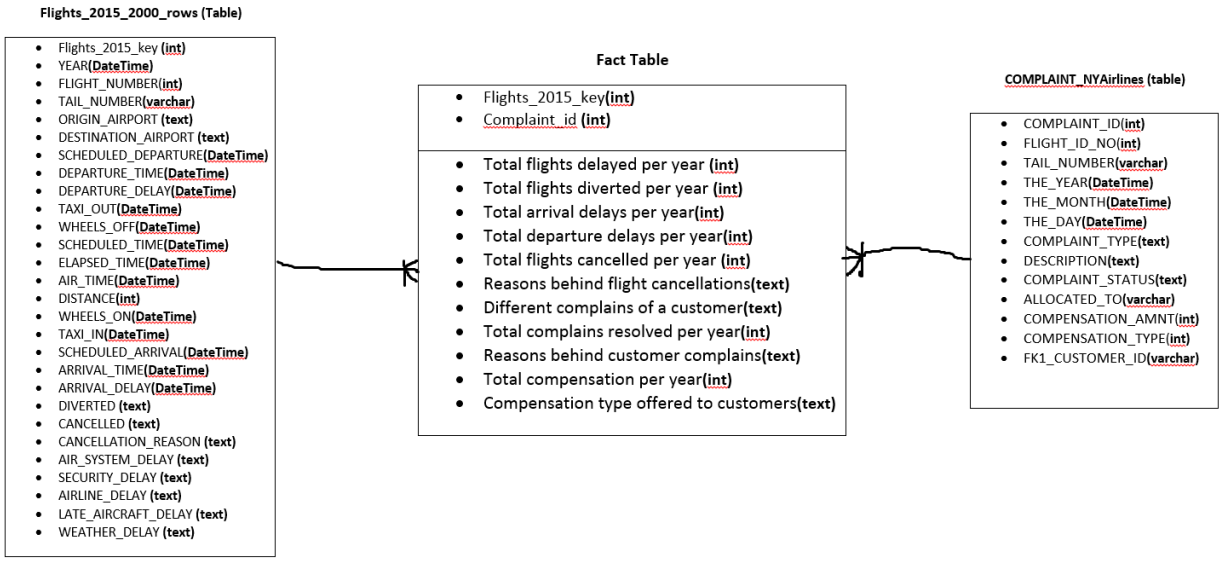
Fact Table Keys:

- Flights_2015_key **(int)**
- Complaint_id **(int)**

Fact Table Measures:

- Total flights delayed per year **(int)**
- Total flights diverted per year **(int)**
- Total arrival delays per year**(int)**
- Total departure delays per year**(int)**
- Total flights cancelled per year **(int)**
- Reasons behind flight cancellations**(text)**
- Different complains of a customer**(text)**
- Total complains resolved per year**(int)**
- Reasons behind customer complains**(text)**
- Total compensation per year**(int)**
- Compensation type offered to customers**(text)**

Draw the Star Schema



Project Ended