## **Airline Travel Company Database Management System Bug Report and Lessons Learned**

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**Bug 1:**

In the beginning, we had an airport table. Therefore, in the flight table, there are two foreign keys are from one airport id. In later we want to select departure airport name and arrival airport name by selecting both tables, but because one same attribute is inserted in two attributes. SQL said errors because it is conflicting with each other.

create table Airport (

AirportId Integer not null,

AirportName varchar(100) not null,

AirportCity varchar(30) not null,

AirportCountry varchar(30) not null,

constraint Candidate\_PK Primary Key (AirportId)

);

create table Flight(

FlightID VARCHAR(20) not null,

ACId Integer not null,

DepartureAirportId Integer not null,

ArrivalairportId Integer not null,

Totalflightduration FLOAT not null,

constraint Flight\_PK Primary Key(FlightID),

constraint Flight\_FK1 Foreign Key (ACId) references AirlineCompany(ACId),

constraint Flight\_FK2 Foreign Key (DepartureAirportId) references Airport(AirportId),

constraint Flight\_FK3 Foreign Key (ArrivalairportId) references Airport(AirportId),

**Solution 1:**

we create arrival airport table and departure airport table that both separately connect with flight table. Therefore, the three foreign keys in flight table will be from three separate tables. Then, we can select airport names and other airport information associated with flight.

**Bug 2:**

When we design Access interface, we found that ‘case’, ‘as’, ‘view’, and ‘/’ (dividing) SQL queries would not be executed in Access.

**Solution 2:**

We just design simple queries in Access.

**Bug 3:**

We limit one attribute in three values in SQLtable. By linking SQL with Access, the limitation of input will not automatically active. For example:

Flightservicestatus varchar(20) not null check (Flightservicestatus in ('Delayed','On Time','Cancelled')),

**Solution 3:**

We manually change it by using lookup wizard in Access to limit input values.

**Lessons learned:**

1: One major mistake of our database system is that flight usually is two-way. However, because flight number has to be unique identifier in flight table, there is impossible in our flight table to contains two-way information. Our flight table contains one-way information which is against the norm. If I had a second chance, I would never choose this subject ever 😊.

2: Our Access interface contains needed functions but has limited efforts of designing background because of the context of COVID-19.

3: Overall, my team implements 95% of learned SQL skills from the class in our project.