An Airline Ticketing Information Management System

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Abstract

In recent years, China's aviation industry has developed rapidly. Flying has become a common thing for many ordinary people. In the capital, Beijing, there are up to 1000 aircraft entering Hong Kong every day. The aviation industry has developed into a huge industry, and the competition among airlines is becoming increasingly fierce. Airlines need to consider the impact of weather, festivals and other conditions while facing the increasing flight orders. Therefore, airlines need a complete database system to process all kinds of complex information such as ticket booking, ticket refund, ticket change, flight arrangement and flight change. Therefore, I will design a database system to simulate the airline's information management system for simulating and processing its work business.

Keywords

Aviation Industry; Information Management System.

1. Introduction

The system takes the customer information as the center, starts from the customer's choice of flight, to the purchase of air tickets until the completion of the flight or cancellation of air tickets, establishes the flight management system, customer information system, revenue and expenditure management system, crew management system and catering management system, simplifies the complex management operation by using computers, and provides customers with the most standardized and convenient services within a reasonable time.

The design purpose of this system is as follows:

1. Improve the management efficiency of airlines, arrange personnel reasonably and effectively, and improve economic benefits

2. Improve the environmental adaptability of the route, change the flight information and adjust the route in time

3. Improve the processing speed of flight information and optimize the customer experience to the greatest extent

2. System requirements analysis

2.1 Requirements analysis

The management personnel involved in the aircraft include the captain and purser. The captain manages the things in the cockpit, while the purser manages the relevant services in the passenger cabin. The ground personnel and consultants provide customers with check-in, ticket purchase, ticket refund, ticket change and other services.

Airlines have multiple sorties of aircraft, each aircraft has an independent aircraft number, each route has an independent flight number, and one route has multiple sorties of aircraft. There are seven types of aircraft: Boeing 737, Boeing 747, Boeing 767, Boeing 777, Airbus 320, Airbus 3330 and Airbus 340. There are six flight statuses: plan, delay, cancellation, alternate landing, take-off and arrival.

Airlines are required to understand the basic information of customers, provide customers with a series of related services such as ticket purchase, ticket change, ticket refund and aircraft status query,

plan the number and model of aircraft on the route, and reasonably arrange the crew to participate in the flight work. Manage customer information, route information and crew information during the normal operation of the company.

2.2 Database entity

2.2.1 Principal entity

A. Aircraft (aircraft number, model)

B. Route (flight number, flight time, route weather, flight status, number of people)

C. Customers (ID number, name, gender, phone number)

D. Order Information (order number, ID number, flight number, flight status, amount, order status)

E. Flight Team (job number, name, gender, position)

F. Crew (job number, name, gender, position)

As show in Fig.1

2.2.2 Generated contact entity

A. Flight Schedule (flight number, job number, flight time)

B. Current Scheduled Flights (ID number, flight number, flight time)

As show in Fig.1

2.3 Relationship between major entities

Route and aircraft: one route can be flown by multiple aircraft, while one aircraft can only fly one route in the same period, which is a one to many relationship

Routes and customers: each route has multiple customers, and each customer can order multiple routes, which is a many to many relationship

Customer and order information: a customer has multiple order information, and each order information corresponds to a customer, which is a one to many relationship;

Flight group and route: a flight group can fly multiple routes, and each route is executed by multiple flight groups, which is a many to many relationship

Crew and route: one crew can fly multiple routes, and each route is operated by multiple crew, which is a many to many relationship

As show in Fig.2, Fig.3

3. System logic model

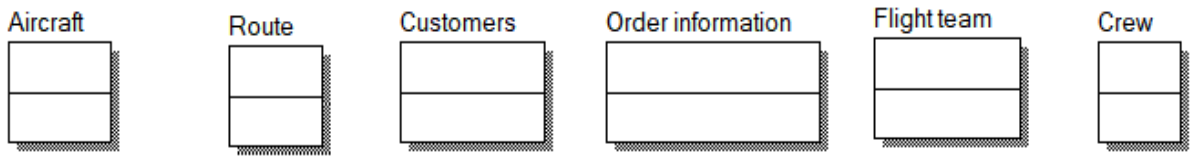

Fig. 1 Preliminary Model

logical model:

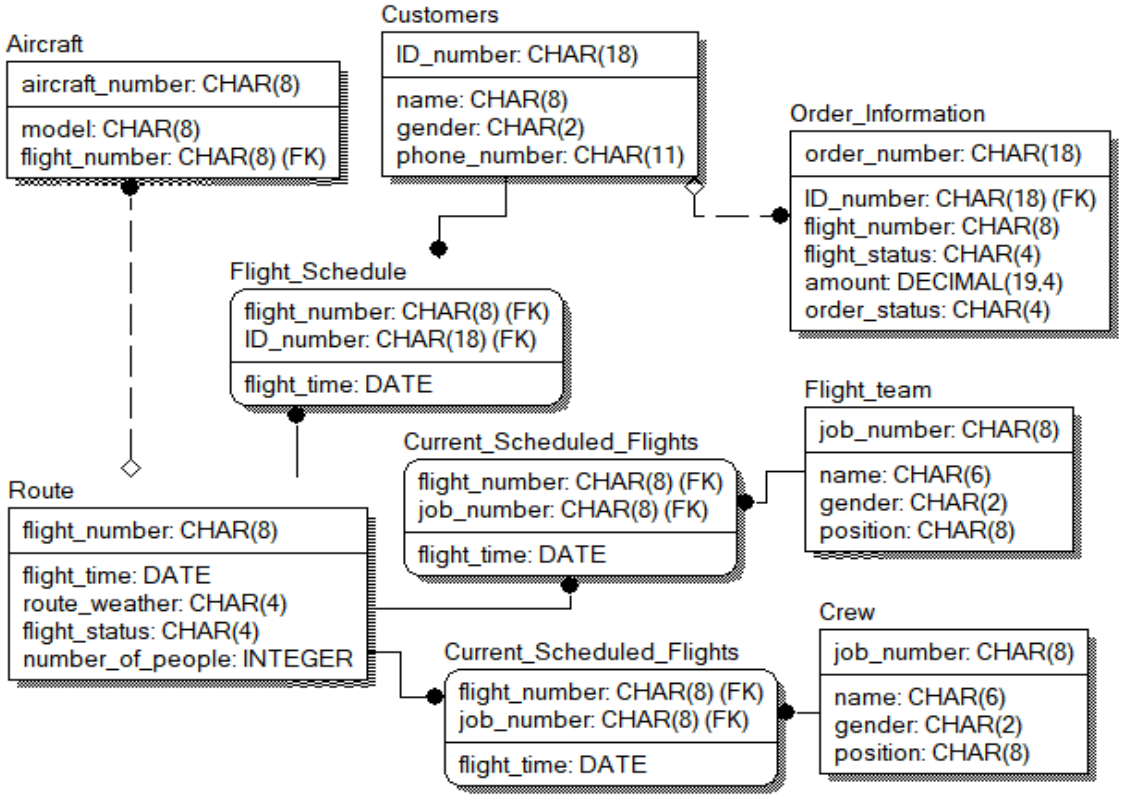

Fig. 2 Logical Model

physical model:

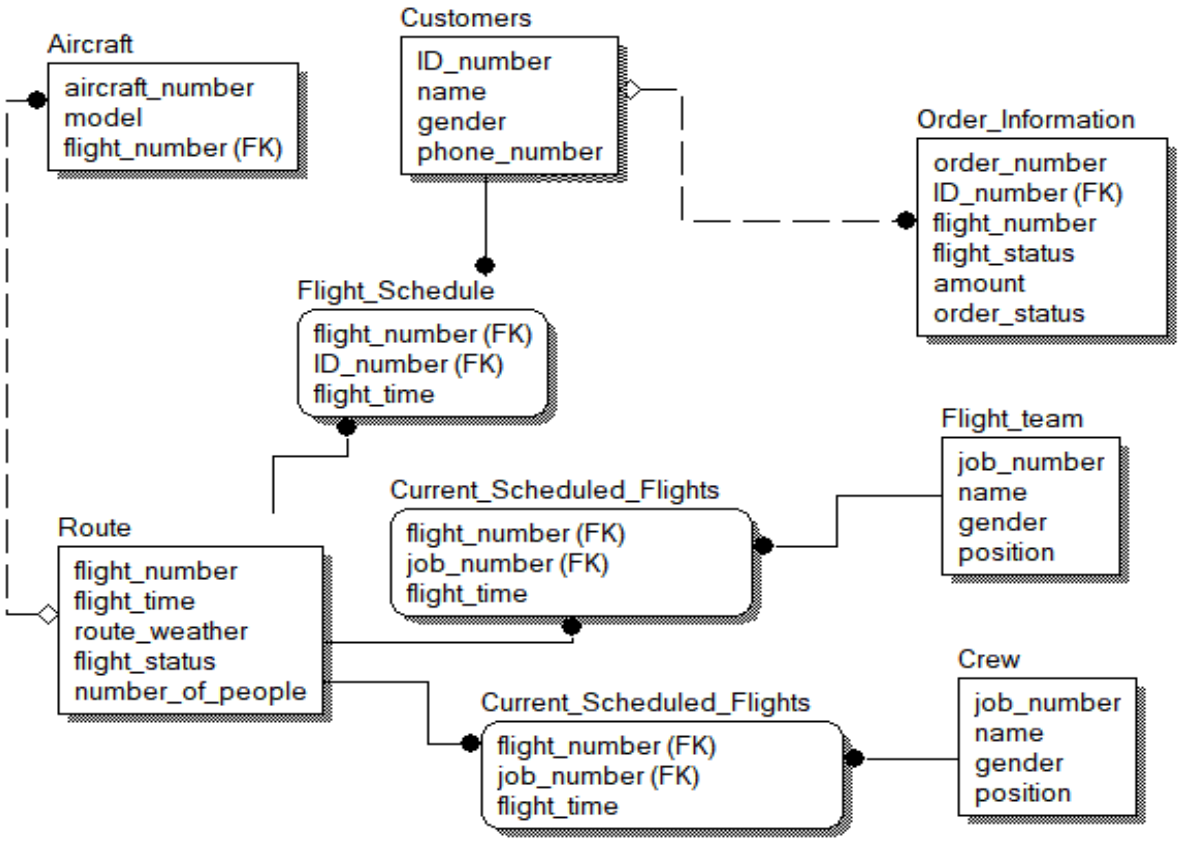

Fig. 3 Physical Model

4. Database design

Select tools in the upper menu option and select alter script / scheme generation. As show in Fig. 4

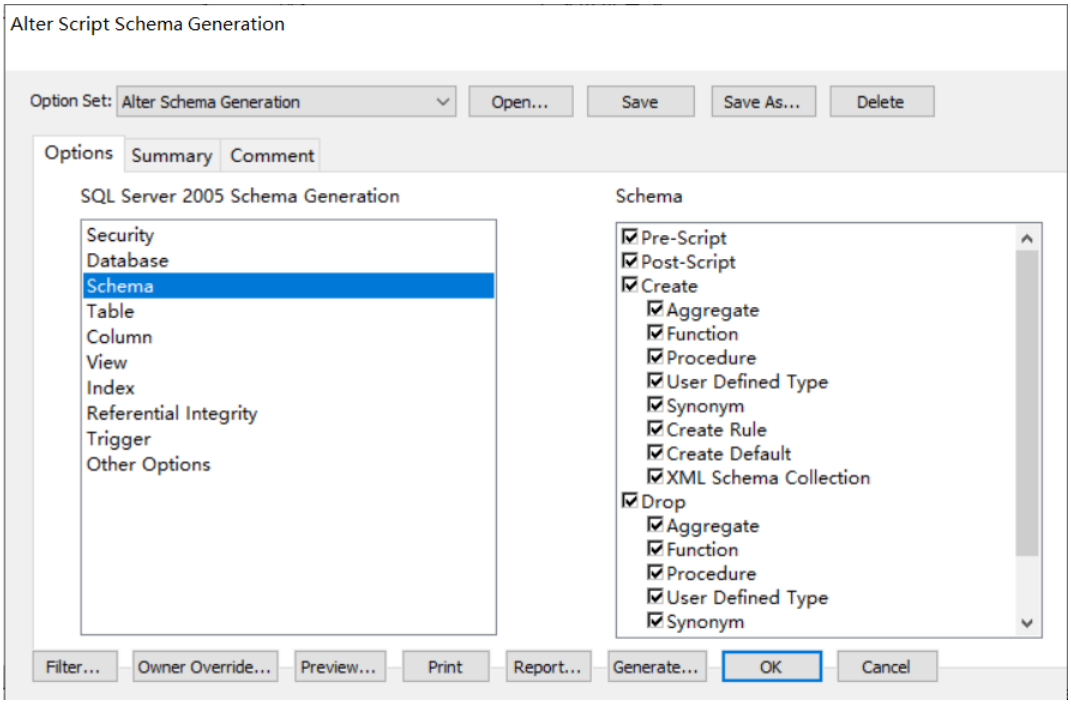

Fig. 4 Select Page

Select generate... And click Connect to generate the SQL table. As show in Fig. 5

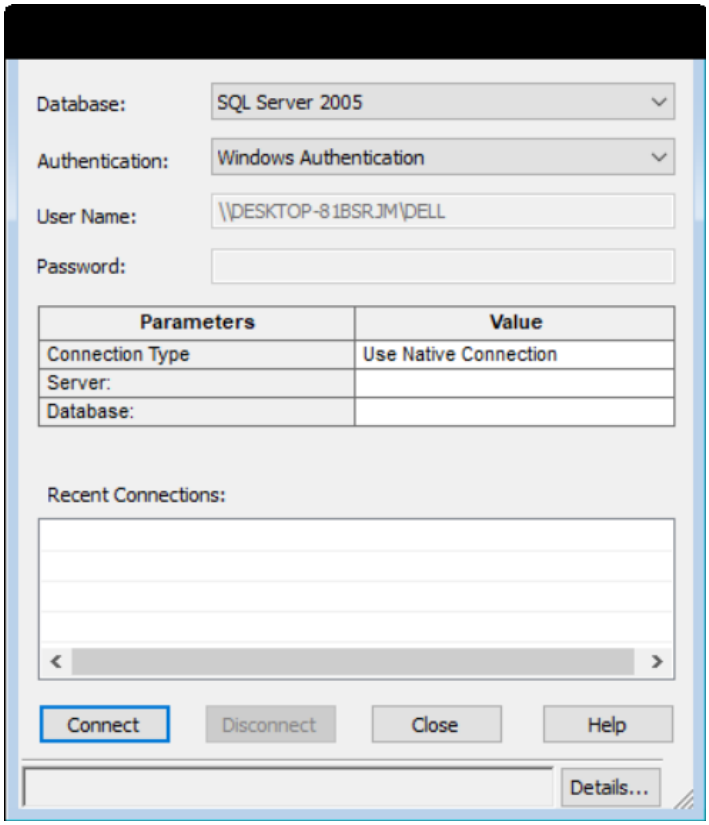

Fig. 5 Setup Page

Open SQL2005 and find the table connected in the past

5. Conclusions

Based on my understanding of the usage of Erwin, I can skillfully establish entities and build relationships between entities through the basic operations of Erwin. In the design process, how to clarify entities and attributes, determine the logical relationship between entities, and then form a reasonable structure is an important problem that needs to be clarified first. At the same time, with the increasing number of database entities, the attributes also overlap. At this time, how to reasonably construct the relationship between entities is testing my logic ability and association ability. Although I have paid more attention to this problem, in the process of increasing entities, there will still be the phenomenon that the logical relationship between entities is not clear and can not stand scrutiny. Further clarifying the logical relationship of entities in the database system is my ability to be improved in my future study.

In the design process, we focus on what field to build the database. With the advent of the information and data age, there will be a place for the database in any field. Through the query of materials, we find that there are still many common information management systems, except the daily information system and the common library, hotel and express management system. Therefore, I chose the aviation field from my daily life. In the aviation field, there is a large amount of information, and there are many emergencies. In the face of the weather, there will be cancellations and delays, as well as a series of problems such as ticket refund and ticket change. In our life, the processing of these processes is very cumbersome, often takes a lot of time, and often causes time and economic losses, which requires a huge database, Through the design of this E-R diagram, I learned to decompose complex processes, simplify complexity, build relatively clear small parts, and gradually solve each small problem by dividing the overall problem into several small blocks, so that the problem can be solved more easily.

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