ABSTRACT

Automation is the motto of this fast moving world, and being able to do anything from anywhere is the luxury this generation has provided. Airline Reservation system which evolved in Computer reservation system is used for reservation of a particular airline and interfaces with Global Distribution System(GDS) which support travel agencies and other distribution channels in making reservation for major airlines in a single system. Airline reservation systems incorporate airline schedules, fare tariffs, passenger reservations and ticket records. This project aims at demonstrating the working of these systems with the above mentioned services highly comparable to their real-world implementations.

ACKNOWLEDGEMENT

The fulfillment and rapture that go with the fruitful finishing of any assignment would be inadequate without the specifying the people who made it conceivable, whose steady direction and support delegated the endeavors with success.

I would like to profoundly thank **Management** of **RNS Institute of Technology** for providing such a healthy environment to carry out this Project work.

I would like to thank our beloved Director **Dr. H N Shivashankar** for his confidence feeling words and support for providing facilities throughout the course.

I would like to express my thanks to our Principal **Dr. M K Venkatesha** for his support and inspired me towards the attainment of knowledge.

I wish to place on record my words of gratitude to **Dr. M V Sudhamani,** Professor and Head of the Department, Information Science and Engineering, for being the enzyme and master mind behind my Project work.

I would like to express my profound and cordial gratitude to my Lab Incharge **Mrs. Kusuma S**, Assistant Professor, Department of Information Science and Engineering for their valuable guidance, constructive comments and continuous encouragement throughout the Project work.

I would like to express my profound and cordial gratitude to my Faculty Incharge **Mrs. Vanishree**, Assistant Professor, Department of Information Science and Engineering for his/her valuable guidance in preparing Project report.

I would like to thank all other teaching and non-teaching staff of Information Science & Engineering who have directly or indirectly helped me to carry out the project work.

And lastly, I would hereby acknowledge and thank my parents who have been a source of inspiration and also instrumental in carrying out this Project work.

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Chapter 1

INTRODUCTION

1.1   Background

A **database** is an organized collection of data, generally stored and accessed electronically from a computer system. Where databases are more complex they are often developed using formal design and modeling techniques.

The database management system (DBMS) is the software that interacts with end users, applications, the database itself to capture and analyze the data and provides facilities to administer the database. The sum total of the database, the DBMS and the associated applications can be referred to as a "database system". Often the term "database" is also used to loosely refer to any of the DBMS, the database system or an application associated with the database. The DBMS manages three important things: the data, the database engine that allows data to be accessed, locked and modified and the database schema, which defines the database's logical structure. These three foundational elements help provide concurrency, security, data integrity and uniform administration procedures. Typical database administration tasks supported by the DBMS include change management, performance monitoring/tuning and backup and recovery. Many database management systems are also responsible for automated rollbacks, restarts and recovery as well as the logging and auditing of activity.

1.2   Introduction to Airline Reservation System

An airline reservation system (ARS) is part of the so-called passenger service systems (PSS), which are applications supporting the direct contact with the passenger.

ARS eventually evolved into the computer reservations system (CRS). A computer reservation system is used for the reservations of a particular airline and interfaces with a global

distribution system (GDS) which supports travel agencies and other distribution channels in making reservations for most major airlines in a single system.

Today all persons are busy with their schedule and no one have time to make a trip for holidays with their family. And this Airline Reservation Process is very difficult to understand in General meaning. But we are providing a Solution for that Problem.

This system provides a facility to easy access towards a customers and a real time users. They can easily connected through it and just 3 steps. There is no requirement for any type of Agent.

The Airline Reservation System project is an implementation of a general Airline Ticketing website like Goibibo, which helps the customers to search the availability and prices of various airline tickets, along with the different packages available with the reservations. This project also covers various features like online registration of the users, modifying the details of the website by the management staff or administrator of the website, by adding, deleting or modifying the customer details, flights or packages information.

In general, this website would be designed to perform like any other airline ticketing website available online. It demonstrates the use of payment gateways to accept payment and shows the implementation of transaction management if multiple transactions are made at the same time. It also demonstrates the use of AJAX calls for dynamic control over webpages. This project also implements the use of PHPMailer which is used to automatically send emails of their ticket confirmation and boarding passes. All the data for this project is collected using the **Flight Data API** which results in a very realistic experience when using the website.

Chapter 2

E R DIAGRAM AND RELATIONAL SCHEMA DIAGRAM

2.1 Description of ER Diagram

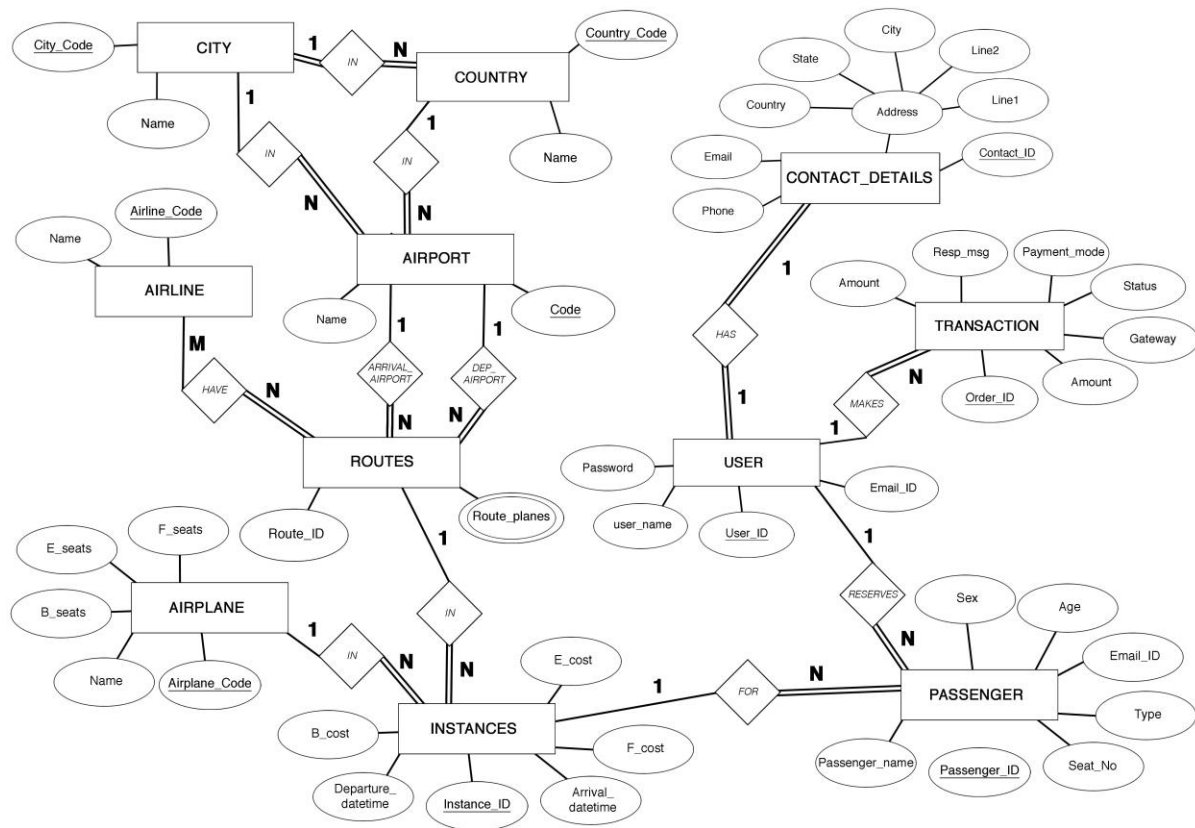*Figure 2.1: E-R Diagram for Airline Reservation System*

Entity relationship diagram displays the relationships of entity set stored in a database. In other words, we can say that ER diagrams help you to explain the logical structure of databases. At first look, an ER diagram looks very similar to the flowchart. However, ER Diagram includes many specialized symbols, and its meanings make this model unique.

2.1.1 Facts about E-R Diagram

1. ER model allows you to draw Database Design
2. It is an easy to use graphical tool for modeling data
3. Widely used in Database Design
4. It is a GUI representation of the logical structure of a Database
5. It helps you to identifies the entities which exist in a system and the relationships between those entities

2.1.2 Components of E-R Diagram

1. Entities
2. Attributes
3. Relationship

2.1.3 Components of Airline Reservation System E-R Diagram Figure 2.1

1. Entity types like **ROUTES** and **PASSENGER** are in rectangular boxes.
2. Relationships like **ARRIVAL_AIRPORT** and **HAS** are in diamond boxes, attached to entity types with straight lines.
3. Attributes are shown in ovals like **Name** and **Seat_No**, each attached by a straight line to entity or relationship type.
4. Key attributes like **Passenger_ID** and **Airport_code** are underlined.
5. Component attributes of a composite attribute like **address** are attached to oval representing it.
6. Multivalued attributes like in **Route_planes,** are represented using double layered oval.

2.1.4 E-R Diagram relationships Description

1. **CITY : AIRPORT** is of cardinality 1:N as one city can possibly have more than one airport and therefore connected by an **IN** relationship. There is total participation from AIRPORT as all airports are located in some city, but partial participation from CITY as a city may exist without an airport.
2. **COUNTRY : AIRPORT** is of cardinality 1:N as one country can have more than one airport and therefore connected by an **IN** relationship. There is total participation from

AIRPORT as all airports are location is some country, but partial participation from COUNTRY as a country may exist without an airport.

3. **AIRPORT : ROUTES** is of cardinality of 1:N in both the relationships **ARRIVAL_AIRPORT** and **DEPARTURE_AIRPORT** as one airport can be involved in multiple routes, but one route can have only one departure and arrival airport. There is total participation from routes as all routes are with respect to some airport, and partial participation from AIRPORT as an airport can exist without being assigned to a route.

4.

2.2 Description of Relational Schema Diagram

COUNTRY

Country_code	Country_name

CITY

City_code	City_name	Country_code

AIRPORT

Airport_code	Airport_name	Country_code	City_code

AIRLINE

Airline_code	Airline_name

ROUTES

Route_ID	Airline_code	Departure_airport_code	Arrival_airport_code

AIRPLANE

Airplane_ID	Airplane_name	B_seats	E_seats	F_seats

ROUTE_PLANE

Route_ID	Plane_ID

CONTACT_DETAILS

Contact_ID	Email	Phone	Line1	Line2	City	State	Country

USERS

User_ID	User_name	Email	Password	Contact_ID

FLIGHT_INSTANCES

Instance_ID	Route_ID	Plane_ID	E_seats	B_seats	F_seats	E_cost	B_cost	F_cost	Departure	Arrival

PASSENGERS

Passenger_ID	Passenger_name	Type	Seat_no	User_ID	Flight_inst_ID	Email_ID	Phone	Age	Sex	Confirmed	Cancelled

TRANSACTIONS

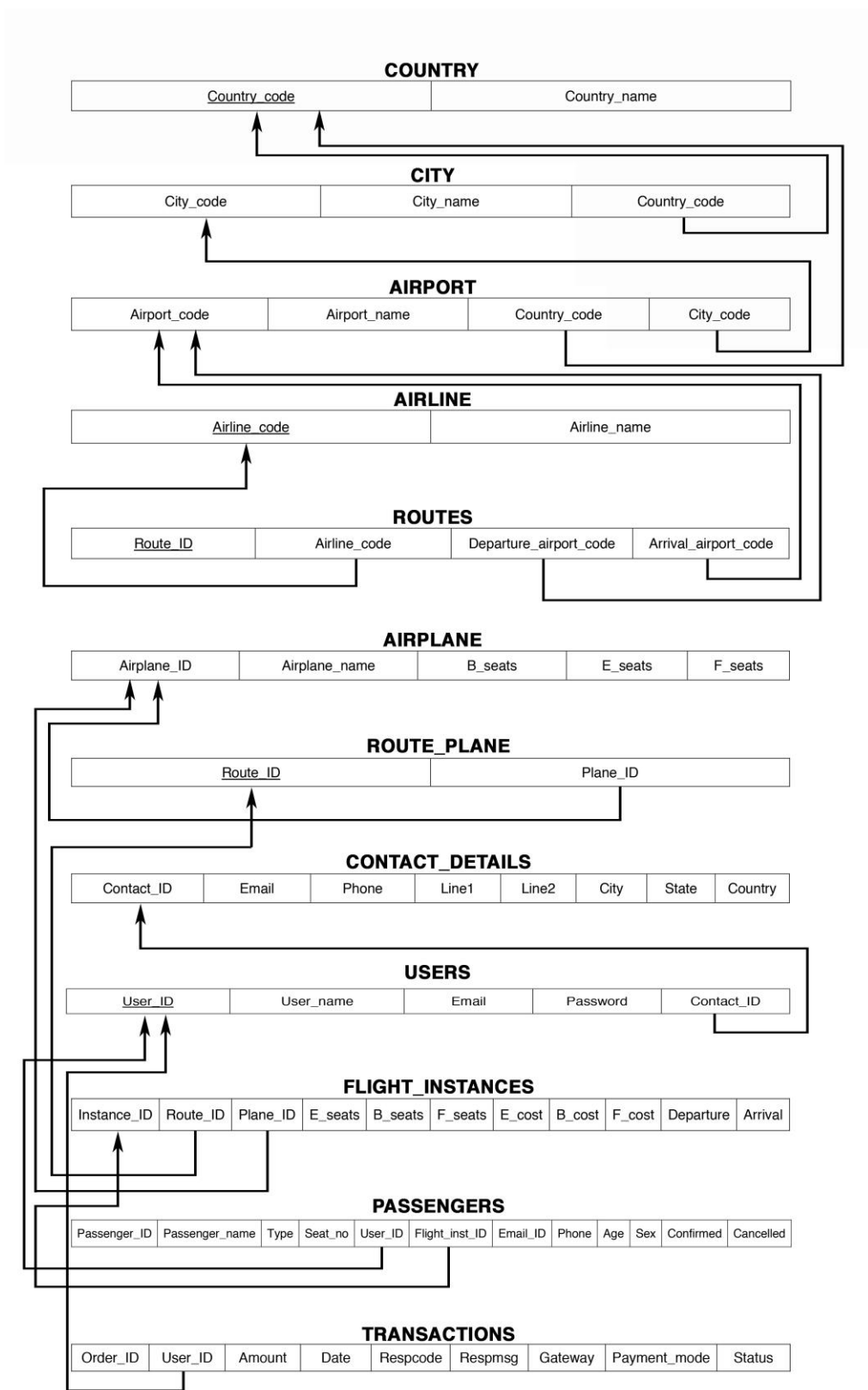| Order_ID	User_ID	Amount	Date	Respcode	Respmsg	Gateway	Payment_mode	Status

Figure 2.2 Relational Schema Diagram for Airline Reservation System