



Vidya Jyothi Institute of Technology

(Accredited by NAAC & NBA , Approved By A.I.C.T.E., New Delhi, permanently affiliated JNTUH)

(AUTONOMOUS)

Department of Computer Science & Engineering

Innovative /Student Centric Teaching Method Form

Innovative Technique implemented: Case Based Learning

Subject: Database Management Systems

Name of the Faculty: B.Sailaja

Class/ Section: II B.Tech II-Sem

Implementation:

Students of 4 made a group and analyze the case study.

Database Design for Airline Reservation

Entities & their relevant attributes

Entity list

1. AirCrafts
2. Route
3. AirFare
4. Flight_Schedule
5. Discounts
6. Charges
7. Countries
8. State
9. Contact_Details
10. Passengers
11. Branches
12. Employee
13. Transactions

Entity structures with relevant attributes:

AirCrafts

Field	Data Type	Description	Constraints
AcID	INT	Field will store unique row number.	Primary Key
AcNumber	Varchar(32)	Aircraft number that identifies the plane.	NOT ULL
Capacity	INT	No. of seats available.	NOT NULL
MfdBy	Varchar(128)	Manufacturing company.	NOT NULL
MfdOn	DATETIME	Manufactured date of aircraft.	NOT NULL

Route

Field	Data Type	Description	Constraints
RtID	INT	Stores unique row id.	Primary Key
Airport	Varchar(32)	From where the flight will take off.	NOT NULL
Destination	Varchar (32)	Flight destinations.	NOT NULL
RouteCode	Varchar(16)	A unique Route code generated using Source & Destination of flight.	NOT NULL UNIQUE

AirFare

Field	Data Type	Description	Constraints
AfID	INT	Stores unique row id.	Primary Key

Route	INT	Route id from Route table.	Foreign Key
Fare	Currency	Stores service charge amount.	NOT NULL
FSC	Currency	Stores fuel surcharge amount.	NOT NULL

Flight_Schedule

Field	Data Type	Description	Constraints
FIID	INT	Unique number to identify the flight.	Primary Key
FlightDate	DATETIME	Date of flight.	NOT NULL
Departure	DATETIME	Stores the departure time of flight.	
Arrival	DATETIME	Stores the arrival time of flight on destination.	
AirCraft	INT	Aircraft number that will fly, a number from Aircraft table.	Foreign Key
NetFare	INT	To determine total fare of flight, an ID from Air_Fare table.	Foreign Key

Discounts

Field	Data Type	Description	Constraints
DiID	INT	Unique row id.	Primary Key
Title	Varchar(32)	Label to know discount.	NOT NULL
Amount	INT	Discount amount in %	NOT NULL
Description	Varchar(255)	Discount remarks & details.	

Charges

Field	Data Type	Description	Constraints
ChID	INT	Unique row id.	Primary Key
Title	Varchar(32)	Label for charge.	NOT NULL
Amount	INT	Amount of charge in %.	NOT NULL
Description	Varchar(255)	Describe cause of charge.	

Countries

Field	Data Type	Description	Constraints
CtiID	INT	Unique row id.	Primary Key
CountryName	Varchar(32)	Room to store country name	NOT NULL

State

Field	Data Type	Description	Constraints
StID	INT	Unique row id.	Primary Key
StateName	Varchar(32)	State name will take place here.	
Country	INT	PK from Country table.	Foreign Key

Contact_Details

Field	Data Type	Description	Constraints
CnID	INT	Unique row id.	Primary Key
Email	Varchar(16)	Passenger's contact email for transaction about flights.	NOT NULL
Cell	Varchar(16)	Passenger's contact cell no for transaction about flights.	NOT NULL
Tel	Varchar(16)	Passenger's contact telephone no. for transaction about flights.	
Street	Varchar(64)	Street address of the passengers.	NOT NULL
State	INT	PK from State table.	Foreign Key

Passengers

Field	Data Type	Description	Constraints
PsID	INT	Unique row id.	Primary Key
Name	Varchar(32)	Passenger's name	NOT NULL
Address	Varchar (64)	Passenger's address	NOT NULL
Age	INT	Passenger's age	NOT NULL
Nationalities	Varchar (16)	Nationality of the passenger.	NOT NULL
Contacts	INT	ContactID from Contact_Details table.	Foreign Key

Branches

Field	Data Type	Description	Constraints
BrID	INT	Unique id for each branches	Primary Key
Center	Varchar(16)	Branch Title	NOT NULL
Address	Varchar(32)	Address of the branch	NOT NULL
State	INT	State ID from state table	Foreign Key

Data Definition Language implementations:

* 0. Create Database & use it */

```
CREATE DATABASE BuddhAirBase;
```

```
USE BuddhAirBase;
```

* 1. Create AirCrafts table*/

```
CREATE TABLE AirCrafts(  
    AcID INT Primary Key,  
    AcNumber Varchar(32) NOT NULL,  
    Capacity INT NOT NULL,  
    MfdBy Varchar(128) NOT NULL,  
    MfdOn Datetime NOT NULL  
);
```

* 1.1 Insert data into AirCrafts table*/

```
INSERT INTO AirCrafts  
(AcID, AcNumber, Capacity, MfdBy, MfdOn)  
VALUES  
(1, "ATR 72-500", 75, "Alenia Aeronotica", "23 April 1998");
```

* 2. Create Route table*/

```
CREATE TABLE Route(  
    RtID INT,  
    Airport Varchar(32) NOT NULL,  
    Destination Varchar(32) NOT NULL,  
    RouteCode Varchar(16) NOT NULL UNIQUE,  
    PRIMARY KEY (RtID)  
);
```

* 2.1 Insert data into Route table*/

```
INSERT INTO Route  
Values (1, "Kathmandu", "Pokhara", "KTM-PKR");
```

* 3. Create AirFare table*/

```
CREATE TABLE AirFare(  
    AfID INT,  
    Route INT,  
    Fare Currency,  
    FSC Currency,  
    PRIMARY KEY (AfID),  
    CONSTRAINT fk_Route FOREIGN KEY (Route) REFERENCES  
Route(RtID)  
);
```

Outcome: Facilitates collaborative learning in the classroom. Provides students with hands-on learning opportunities to connect and apply their theoretical understanding.

Course Instructor

HOD-CSE