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| --- | --- | --- |
|  | Name | Task(s) |
| 1 | Manav Alpeshbhai Zadafiya | Task 1 |
| 2 | Patel Arth Bimalbhai | Task 2 |
| 3 | Niroopah Bonifus Joseph | Task 3 |

**GROUP 02**

**Date: 2023-12-02**

**Purpose: Assignment2 DBS211**

**We, members of Group2, declare that the attached assignment is our own work in accordance with the Seneca Academic Policy. No part of this assignment has been copied manually or electronically from any other source (including web sites) or distributed to other students.**

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Part I. Database Normalization and Entity Relationship Model

UNF:

**[BookingID (PK)**, **Flight\_num (PK)**, BookedOn, Airline\_code, Airline\_Name, Aircraft\_code, Aircraft\_desc, operatedBy, dep\_date, dep\_time, dep\_airport\_code, dep\_airport\_name, dep\_city, arr\_date, arr\_time, arr\_airport\_code, arr\_airport\_name, arr\_city**, eticket\_num(PK)**, **traveler\_id(PK)**, BookingID, traveler\_Fname, traveler\_Lname, Gender, Meal\_preference, ticket\_price, taxes\_fees**]**

NF1:

**BOOKING** **[BookingID**, **Flight\_num**, BookedOn, Airline\_code, Airline\_Name, Aircraft\_code, Aircraft\_desc, operatedBy, dep\_date, dep\_time, dep\_airport\_code, dep\_airport\_name, dep\_city, arr\_date, arr\_time, arr\_airport\_code, arr\_airport\_name, arr\_city**]**

**TICKET [eticket\_num**, **traveler\_id**, BookingID (FK), traveler\_Fname, traveler\_Lname, Gender, Meal\_preference, ticket\_price, taxes\_fees**]**

NF2:

**BOOKING [BookingID (PK),** BookedOn**]**

**FLIGHT [Flight\_num (PK)**, Airline\_code, Airline\_Name, Aircraft\_code, Aircraft\_desc, operatedBy**]**

**FLIGHTBOOKING [BookingID (PK,FK), Flight\_num (PK,FK),** dep\_date, dep\_time, dep\_airport\_code, dep\_airport\_name, dep\_city, arr\_date, arr\_time, arr\_airport\_code, arr\_airport\_name, arr\_city**]**

**TICKET [eticket\_num (PK)**, BookingID (FK), traveler\_id (FK) ticket\_price, taxes\_fees**]**

**TRAVELER [traveler\_id (PK),** traveler\_Fname, traveler\_Lname, Gender, Meal\_preference**]**

NF3:

**BOOKING [BookingID (PK),** BookedOn**]**

**FLIGHT [Flight\_num (PK)**, Airline\_code (FK), Aircraft\_code (FK), operatedBy**]**

**FLIGHTBOOKING [BookingID (PK,FK), Flight\_num (PK,FK),** dep\_airport\_code(FK), arr\_airport\_code(FK), dep\_date, dep\_time, arr\_date, arr\_time**]**

**AIRLINE [Airline\_code (PK)**, Airline\_Name**]**

**AIRCRAFT [Aircraft\_code (PK)**, Aircraft\_desc**]**

**AIRPORT [airport\_code (PK)**, airport\_name, city**]**

**TICKET [eticket\_num (PK)**, BookingID (FK), traveler\_id (FK) ticket\_price, taxes\_fees**]**

**TRAVELER [traveler\_id (PK),** traveler\_Fname, traveler\_Lname, Gender, Meal\_preference**]**

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Part II. Database IMPLEMENTATION

CREATE TABLE TRAVELER

(

traveler\_id NUMBER PRIMARY KEY,

traveler\_Fname VARCHAR(50),

traveler\_Lname VARCHAR(50),

Gender VARCHAR2(10),

Meal\_preference VARCHAR(20)

);

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INSERT ALL

INTO TRAVELER VALUES (111,'Andrew','Smith','Male','Vegetrian')

INTO TRAVELER VALUES (112,'Mariam','Daoud','Female','Halal')

INTO TRAVELER VALUES (113,'Yasmine','Ch','Female','Vegetrian')

INTO TRAVELER VALUES (114,'Hasan','Ch','Male','Halal')

SELECT \* FROM DUAL;

COMMIT;

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CREATE TABLE BOOKING (

BookingID NUMBER PRIMARY KEY,

BookedOn DATE

);

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INSERT ALL

INTO BOOKING VALUES (56753365,'28-Jan-19')

INTO BOOKING VALUES (56753936,'25-Jun-19')

SELECT \* FROM DUAL;

COMMIT;

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CREATE TABLE AIRLINE (

Airline\_code VARCHAR(10) PRIMARY KEY,

Airline\_name VARCHAR(100)

);

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INSERT ALL

INTO AIRLINE VALUES ('AF','Air France')

SELECT \* FROM DUAL;

COMMIT;

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CREATE TABLE AIRCRAFT(

Aircraft\_code VARCHAR(20) PRIMARY KEY,

Aircraft\_desc VARCHAR(100)

);

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INSERT ALL

INTO AIRCRAFT VALUES ('772','BOEING 777 285-305 STD')

INTO AIRCRAFT VALUES ('332','AIRBUS INDUSTRIE JET 200-345 STD')

SELECT \* FROM DUAL;

COMMIT;

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CREATE TABLE FLIGHT (

Flight\_num VARCHAR(50) PRIMARY KEY,

Airline\_code VARCHAR(10),

AirCraft\_code VARCHAR(20),

operatedBy VARCHAR(10),

FOREIGN KEY (Airline\_code) REFERENCES AIRLINE(Airline\_code),

FOREIGN KEY (Aircraft\_code) REFERENCES AIRCRAFT(Aircraft\_code)

);

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INSERT ALL

INTO FLIGHT VALUES ('AF393','AF','772','AF')

INTO FLIGHT VALUES ('AF386','AF','772','AF')

INTO FLIGHT VALUES ('AF5106','AF','332','MEA')

SELECT \* FROM DUAL;

COMMIT;

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CREATE TABLE AIRPORT

(

Airport\_code VARCHAR(10) PRIMARY KEY,

Airport\_name VARCHAR(100),

city VARCHAR(50)

);

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INSERT ALL

INTO AIRPORT VALUES ('YYZ','Toronto Pearson Intl','Toronto')

INTO AIRPORT VALUES ('CDG','Charles de Gaul','Paris')

INTO AIRPORT VALUES ('BEY',NULL,'Beirut')

SELECT \* FROM DUAL;

COMMIT;

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CREATE TABLE TICKET

(

eticket\_num NUMBER PRIMARY KEY,

BookingID NUMBER,

traveler\_id NUMBER,

ticket\_price NUMBER,

taxes\_fees NUMBER,

FOREIGN KEY (BookingID) REFERENCES BOOKING(BookingID),

FOREIGN KEY (traveler\_id) REFERENCES TRAVELER(traveler\_id)

);

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INSERT ALL

INTO TICKET VALUES (573480996631,56753936,111,1200,182)

INTO TICKET VALUES (573480996619,56753365,112,1353,182)

INTO TICKET VALUES (573480996620,56753365,113,1142,180)

INTO TICKET VALUES (573480996621,56753365,114,1142,180)

SELECT \* FROM DUAL;

COMMIT;

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CREATE TABLE FLIGHTBOOKING

(

BookingID NUMBER,

Flight\_Num VARCHAR(50),

dep\_airport\_code VARCHAR(10),

arr\_airport\_code VARCHAR(10),

dep\_date DATE,

dep\_time VARCHAR(10),

arr\_date DATE,

arr\_time VARCHAR(10),

PRIMARY KEY(BookingID, Flight\_num),

FOREIGN KEY (BookingID) REFERENCES BOOKING(BookingID),

FOREIGN KEY (Flight\_num) REFERENCES FLIGHT(Flight\_num),

FOREIGN KEY (dep\_airport\_code) REFERENCES AIRPORT(airport\_code),

FOREIGN KEY (arr\_airport\_code) REFERENCES AIRPORT(airport\_code)

);

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INSERT ALL

INTO FLIGHTBOOKING VALUES (56753365,'AF393','YYZ','CDG','22-Jun-19','9:20 PM','23-Jun-19','10:50 AM')

INTO FLIGHTBOOKING VALUES (56753936,'AF393','YYZ','CDG','22-Jun-19','9:20 PM','23-Jun-19','10:50 PM')

INTO FLIGHTBOOKING VALUES (56753936,'AF386','CDG','YYZ','17-Jun-19','5:00 PM','17-Jun-19','7:20 PM')

INTO FLIGHTBOOKING VALUES (56753365,'AF5106','CDG','BEY','23-Jun-19','1:40 PM','23-Jun-19','6:55 PM')

SELECT \* FROM DUAL;

COMMIT;

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All Tables:

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Part III. Data Manipulation

**ANSWER 1:** Number of Rows affected: 2

SELECT

fb.Flight\_num,

f.Airline\_code,

al.Airline\_name,

f.Aircraft\_code,

ac.Aircraft\_desc,

dep.Airport\_code AS Departure\_Airport\_Code,

dep.Airport\_name AS Departure\_Airport\_Name,

arr.Airport\_code AS Arrival\_Airport\_Code,

arr.Airport\_name AS Arrival\_Airport\_Name

FROM

flightbooking fb

JOIN Flight f ON f.Flight\_num = fb.flight\_num

JOIN Airline al ON f.Airline\_code = al.Airline\_code

JOIN Aircraft ac ON f.Aircraft\_code = ac.Aircraft\_code

JOIN Airport dep ON fb.dep\_airport\_code = dep.Airport\_code

JOIN Airport arr ON fb.arr\_airport\_code = arr.Airport\_code

WHERE f.Flight\_num = 'AF393';

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**ANSWER 2:** Number of rows affected: 2

SELECT

b.bookingid,

b.bookedon,

fb.flight\_num,

fb.dep\_airport\_code AS departure\_airport\_code,

fb.dep\_date AS departure\_date,

fb.dep\_time AS departure\_time,

fb.arr\_airport\_code AS arrival\_airport\_code,

fb.arr\_date AS arrival\_date,

fb.arr\_time AS arrival\_time

FROM Booking b

INNER JOIN FlightBooking fb ON b.BookingID = fb.BookingID

WHERE b.BookingID = 56753365

ORBER BY fb.dep\_date, fb.dep\_time;

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**ANSWER 3:** Number of rows affected: 3

SELECT

b.bookingid,

e.eticket\_num,

t.traveler\_fname,

t.traveler\_lname

FROM booking b

JOIN

ticket e ON b.bookingid = e.bookingid

JOIN

traveler t ON e.traveler\_id = t.traveler\_id

WHERE b.bookingid = 56753365

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**ANSWER 4:** Number of rows affected: 3

SELECT

SUM(t.ticket\_price + t.taxes\_fees) AS "total\_fees"

FROM booking b

INNER JOIN ticket t ON b.bookingid = t.bookingid

WHERE

t.bookingid = 56753365

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**ANSWER 5:** Number of rows affected: 4

CREATE VIEW Book\_ticket AS

SELECT

B.BookingID,

B.Bookedon,

COUNT(T.eticket\_num) AS NumberOfTickets

FROM

Booking B

LEFT JOIN

Ticket T ON B.BookingID = T.BookingID

GROUP BY

B.BookingID, B.Bookedon;

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View:

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