**DBS Lab 2**

**Roll No: 22SW037 (section I)**

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**Lab Tasks:**

The Flight Database stores details about an airline's flights and seat bookings.

Consider the Following requirement List:

* The airline has one or more airplanes.
* An airplane has a model number, a unique registration number, and the capacity.
* An airplane flight has a unique flight number, a departure airport, a destination airport, a departure date and time and an arrival date and time.
* Each flight is carried out by a single airplane.
* A passenger has given names, a surname and a unique email address.
* A passenger can book one or more seats on a flight.
* **For the above mentioned case study**
* **1. Identify the Entities.**
* **2. Specify the attributes for each of the entity.**
* **3. Specify the relationship among entities.**
* **Draw the Conceptual Model, Logical Model and Physical Model.**

**Solution**

* **Entities:**

1. Airline
2. Airplane
3. Flight
4. Passenger
5. Seat

* **Attributes:**

**1. Airline:** 1. No\_of\_airplanes

**2**. Airline\_name

**2. Airplane:**

1. model\_number

2. registration\_number

3. capacity

**3. Flight:**

1. flight\_number

2. departure\_airport

3. destination\_airport

4. departure\_date

5. departure\_time

6. arrival\_date

7. arrival\_time

**4. Passenger:**

1. name

2. surname

3. email\_address

**5. Seat:**

1. seat\_no

* **Relationships**

1. Airline and Airplane: one to many
2. Airplane and flight: one to many
3. Seat and flight: Many to one
4. Passenger and seat: One to many

* **Models**

1. **Conceptual Model**

Airplane

Airline

N

1

N

N

N

1

Flight

Passenger

1

Seat

1. **Logical Model**

Airline

Airplane

No\_of\_airplanes

Airline\_name

N

model\_number

registration\_number

capacity

1

N

1

1

N

Seat

N

Seat\_no

Flight

flight\_number

departure\_airport

destination\_airport

departure\_date

departure\_time

arrival\_date

arrival\_time

1

Name

surname email\_address

Passenger

1

1. **Physical Model**

Airplane

Airline

N

N

N

N

1

1

1

1

flight\_number: INTEGER

departure\_airport: VARCHAR(30)

destination\_airport: VARCHAR(30)

departure\_date: DATE

departure\_time: TIME

arrival\_date: DATE

arrival\_time: TIME

Name: VARCHAR(30)

Surname: VARCHAR(30)

email\_address: VARCHAR(30)

model\_number: INTEGER

registration\_number: INTEGER

capacity: INTEGER

No\_of\_airplanes: INTEGER

Airline\_name: VARCHAR(30)

Seat

Seat\_no: INTEGER

Passenger

Flight

**Lab Task 2: Give 2 Examples of relational Database:**

1. **Microsoft SQL Server:**

Microsoft SQL Server is a relational database management system developed by Microsoft. It is commonly used in conjunction with Microsoft's .NET framework and is suitable for enterprise-level applications.

1. **MySQL:**

MySQL is one of the most popular open-source relational database management systems. It is widely used for web applications and works well with various programming languages.

**Lab Task 3: Give 1 Example of Strong and week entity**

An example of Strong and week entity is “Bank” and “Bank Account”. The bank can exist independently but the Bank Account is dependent on Bank it can’t exists independently.

has

Bank Account

Bank