We, Yicheng Wang, Ivy Nicole Dioso, Sanjil Amgain, declare that the attached assignment is our own work in accordance with Seneca’s Academic Policy. No part of this assignment has been copied manually or electronically from any other source (including websites) or distributed to other students.

**Member Contributions**

Each member must specify their contribution to the project:

|  |  |
| --- | --- |
| **Name** | **Task(s) Completed** |
| 1. |  |
| 2. |  |
| 3. |  |
|  |  |

**PART I: DATABASE NORMALIZATION & ERD (50%)**

* BookingRecord Table
* 1NF

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

* 2NF

BookingID, Flight\_num→ dep\_date, dep\_time, arr\_date, arr\_time

BookingID → BookedOn

Flight\_num → Airline\_code, Airline\_Name, Aircraft\_code, Aircraft\_desc, operatedBy, dep\_airport\_code, dep\_airport\_name, dep\_city, arr\_airport\_code, arr\_airport\_name, arr\_city

* 3NF

BookingID, Flight\_num→ dep\_date, dep\_time, arr\_date, arr\_time

BookingID → BookedOn

Airline\_code → Airline\_Name

Aircraft\_code → Aircraft\_desc

dep\_airport\_code → dep\_airport\_name, dep\_city

arr\_airport\_code → arr\_airport\_name, arr\_city

Flight\_num → Airline\_code, Aircraft\_code, operatedBy, dep\_airport\_code, arr\_airport\_code

* Ticket Table
* 1NF

eticket\_num → BookingID, traveler\_id, traveler\_fname, traveler\_lname, Gender, Meal\_preference, ticket\_price, taxes\_fees

* 2NF

Already in 2NF. No partial dependencies since the PK is not composite

* 3NF

traveler\_id → traveler\_fname, traveler\_lname, Gender

eticket\_num → BookingID, traveler\_id, Meal\_preference, ticket\_price, taxes\_fees

Final 3NF Tables:

Booking(BookingID → booking\_date)

Airline(Airline\_code → Airline\_Name)

Aircraft(Aircraft\_code → Aircraft\_desc)

Airport(Airport\_code → Airport\_name, City)

Flight(Flight\_num → Airline\_code, Aircraft\_code, operatedBy, dep\_airport\_code, arr\_airport\_code)

BookingRecord(BookingID, Flight\_num → dep\_date, dep\_time, arr\_date, arr\_time)

Traveler(traveler\_id → first\_name, last\_name, gender)

TICKET(eticket\_num → BookingID, traveler\_id, Meal\_preference, ticket\_price, taxes\_fees)

logical database design:

Booking[BookingID(PK), booking\_date]

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

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

Airport[Airport\_code(PK), Airport\_name, City]

Flight[Flight\_num(PK), Airline\_code(FK), Aircraft\_code(FK), operatedBy(FK), dep\_airport\_code(FK), arr\_airport\_code(FK)]

BookingRecord[BookingID(PK,FK), Flight\_num(PK,FK), dep\_date, dep\_time, arr\_date, arr\_time]

Traveler[traveler\_id(PK), first\_name, last\_name, gender]

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

PART II: DATABASE IMPLEMENTATION (20%)

Provide a screenshot of the object explorer displaying tables, columns, and constraints.

A screenshot of a computer

AI-generated content may be incorrect.

A diagram of a plane

AI-generated content may be incorrect.

PART III: DATA MANIPULATION (30%)

For the following queries, include: (a) The **SQL command** (in the SQL file and the document)  
(b) The **output in text format**  
(c) The **number of rows affected**