جامعة أم القرى
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Database Project
Airport

Section Number: 6
Group Number: 1

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GROUP WORK REPORT

	Work	Arwa Emam	Lujain Bahathiq	Haneen Almalki	Arub Althobaiti	Refal kadarjan	Mawaddah Abu Humrah
phase 1	Business Rule	✓	✓				
	chen's notation				✓	✓	
	UML Notation			✓			✓
phase 2	Schema Mapping	✓	✓	✓	✓	✓	✓
	Normalization	✓	✓	✓			

presentation	Arwa Emam
Report	Lujain Bahathiq

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Introduction

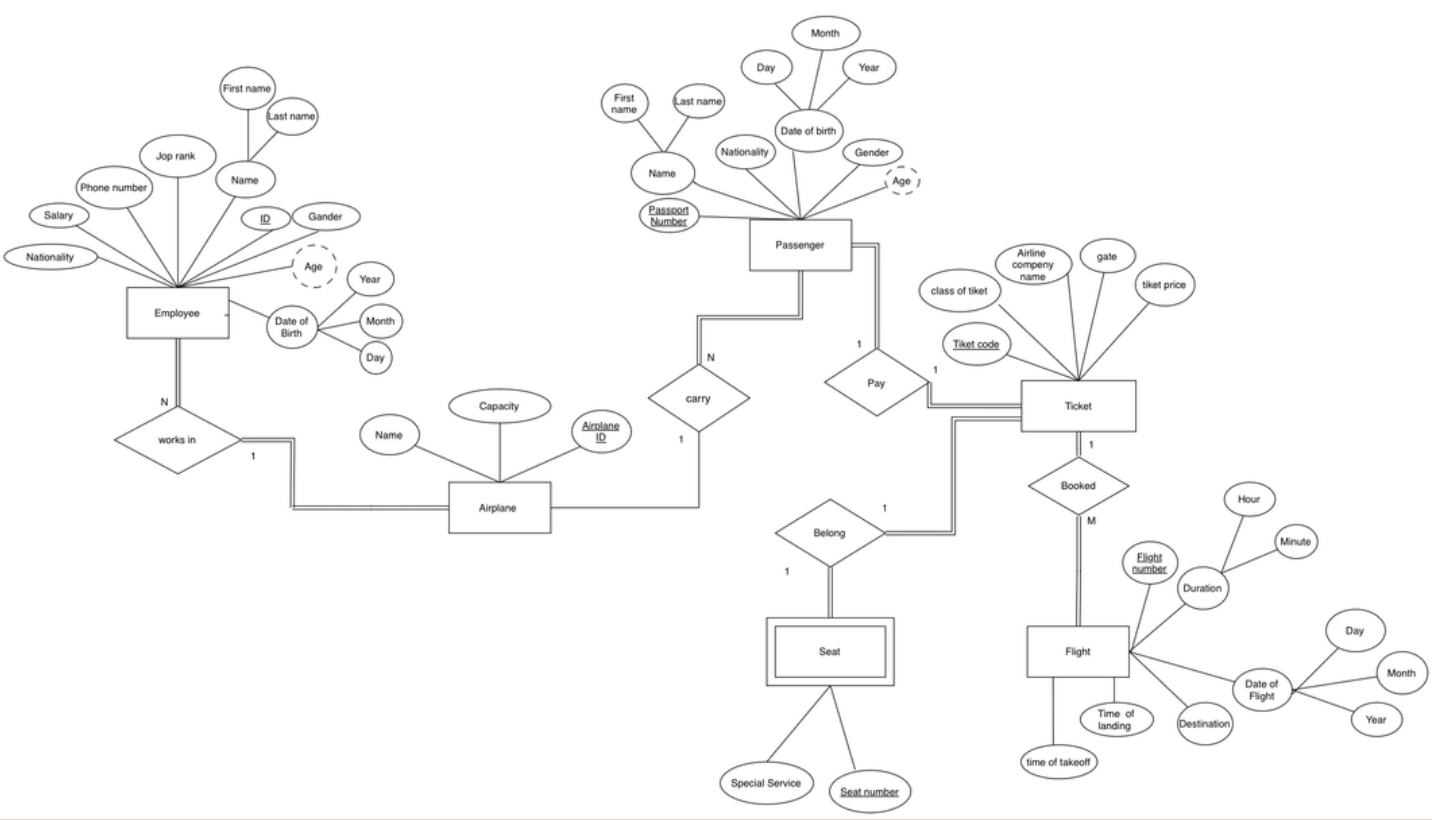
In our project, we will be making a simple database for an Airplane. We will first clarify the business rules and decide the proper relationships between the entities. So, after everything is clear and organized, we will be moving to the next step which is creating the ER and UML diagrams. Those are going to be the base for us to build the database.

BUSINESS RULE

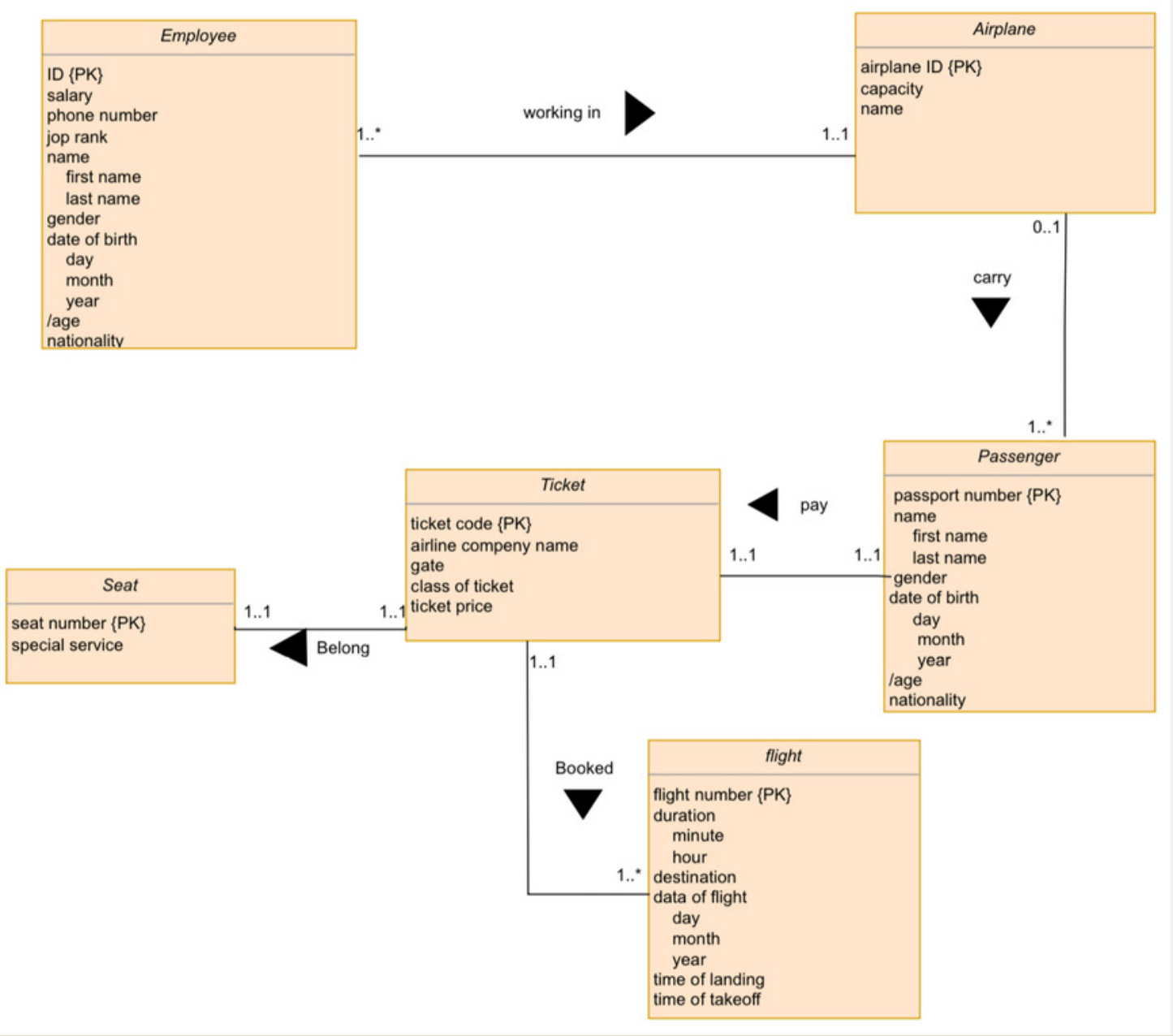
The Airport is the site of landing and take-off of airplanes.

- The airplane carry passengers. and There are employees working in the airplane.
- Eash Employee has a name, date of birth, age, ID, jop rank ,phone number , salary ,gander ,and nationality. and each employee work in plane .
- Airplane has airline name, plane ID and specific capacity. each Airplane has number of passengers and employees ,and special ticket to get on.
- Eash passenger has a name, passport number, date of birth , age , gender , and nationality.
- Each passenger pay for a ticket and booked for one filght or more (like a Transit).
- Each ticket contains ticket code, airline company name, gate , class of ticket , ticket price.
- Each ticket belong to one seat that has seat number and get special service.
- Each ticket can be used for one or more flight.
- Each flight has flight number, duration, destination, date of flight, time of landing and takeoff.

CHEN'S NOTATION



UML NOTATION



RELATIONAL SCHEMA MAPPING

Step 1: Mapping of Regular Entity Types

Passenger

Passport Number	First name	Last name	Nationality	Day	Month	Year	Gender

Airplane

Airplane ID	name	Capacity

Employee

ID	First name	Last name	Day	Month	Year	Gender	Jop rank	Phone number	Salary	Nationality

Ticket

Ticket code	Airline company name	Class of ticket	Gate	Ticket price

Flight

Flight number	Hour	Minute	Destination	Day	Month	Year	Time of takeoff	Time of landing

Step 2: Mapping of Weak Entity Types

Seat

Ticket code	Seat number	Special Service

Step 3: Mapping of Binary 1:1 Relationship Types

Belong relationship type:

Ticket

Ticket code	Airline company name	Class of ticket	Gate	Pay_Passport Number	Ticket price

Seat

Ticket code	Blg_Ticket_code	Seat number	Special Service

Payment relationship type:

Ticket

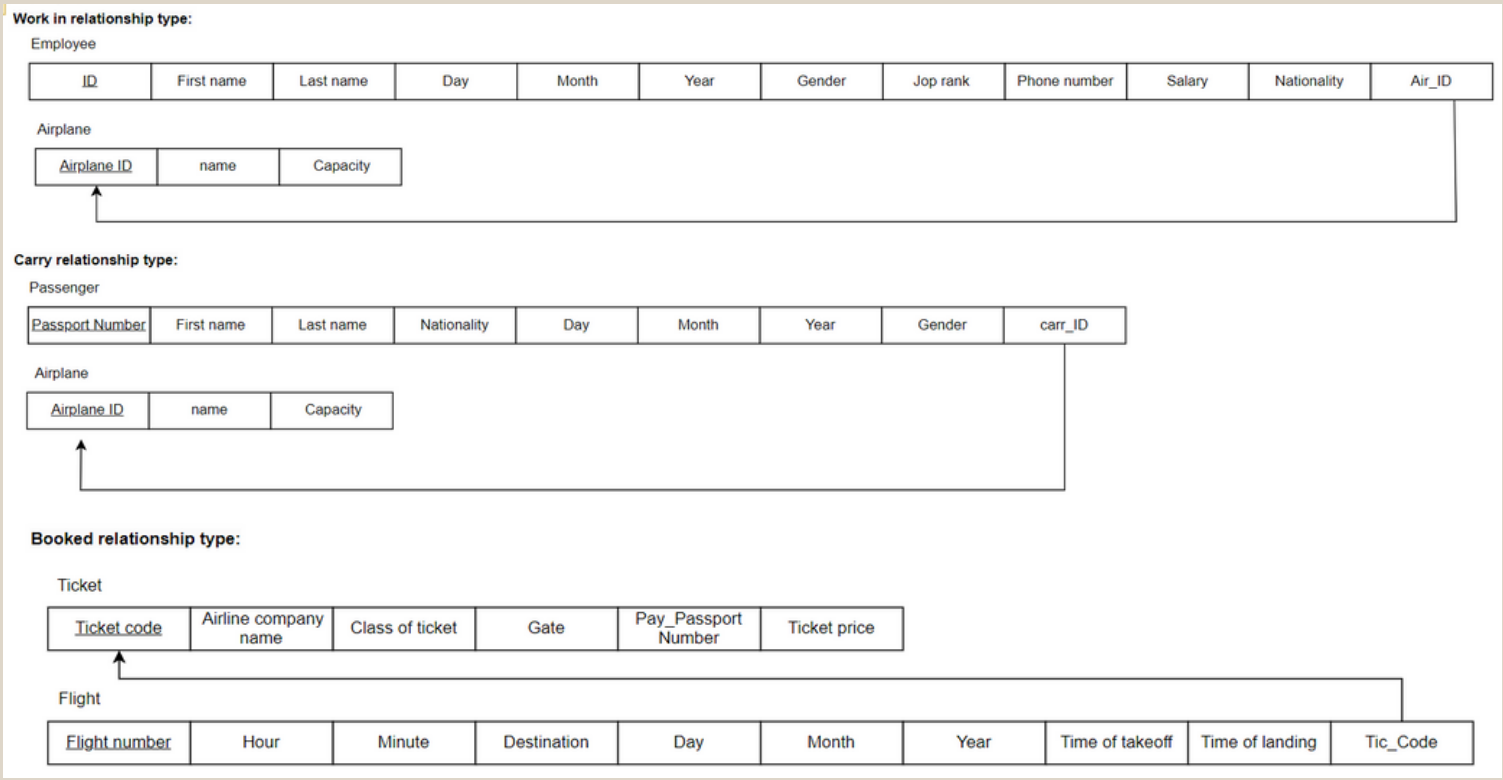
Ticket code	Airline company name	Class of ticket	Gate	Pay_Passport Number	Ticket price

Passenger

Passport Number	First name	Last name	Nationality	Day	Month	Year	Gender

RELATIONAL SCHEMA MAPPING

Step 4: Mapping of Binary 1:N Relationship Types

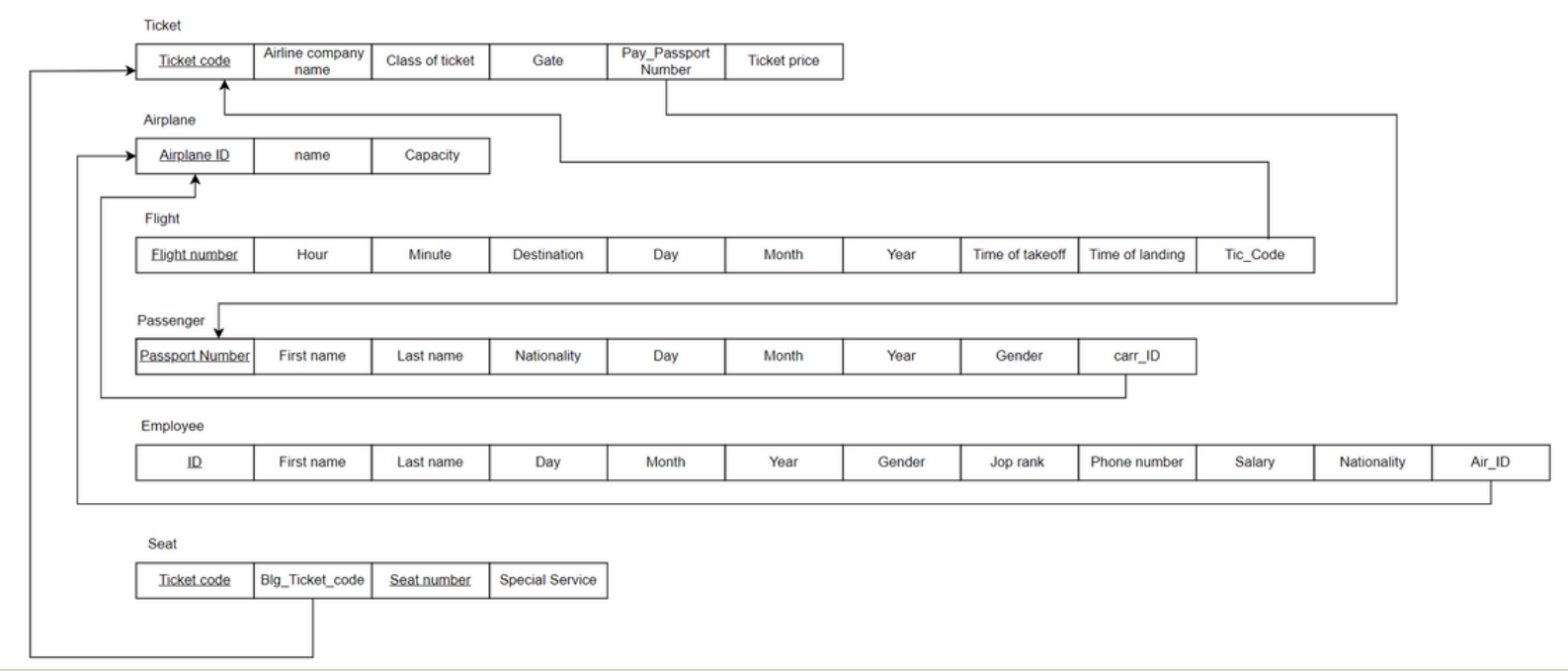


Step 5: Mapping of Binary M:N Relationship Types :None.

Step 6: Mapping of Multivalued attributes:None.

Step 7: Mapping of N-ary Relationship Types:None.

FINAL MAPPING



NORMALIZATION

1. First Normal Form (1NF)

No multi-valued

No repeating groups

Ticket

Ticket code	Airline company name	Class of ticket	Gate	Pay_Passport Number	Ticket price

Airplane

Airplane ID	name	Capacity

Flight

Flight number	Hour	Minute	Destination	Day	Month	Year	Time of takeoff	Time of landing	Tic_Code

Passenger

Passport Number	First name	Last name	Nationality	Day	Month	Year	Gender	carr_ID

Employee

ID	First name	Last name	Day	Month	Year	Gender	Jop rank	Phone number	Salary	Nationality	Air_ID

Seat

Ticket code	Blg_Ticket_code	Seat number	Special Service

2.Second Normal Form (2NF)

no partial dependencies.

Ticket

Ticket code	Airline company name	Class of ticket	Gate	Pay_Passport Number	Ticket price

Airplane

Airplane ID	name	Capacity

Flight

Flight number	Hour	Minute	Destination	Day	Month	Year	Time of takeoff	Time of landing	Tic_Code

Passenger

Passport Number	First name	Last name	Nationality	Day	Month	Year	Gender	carr_ID

Employee

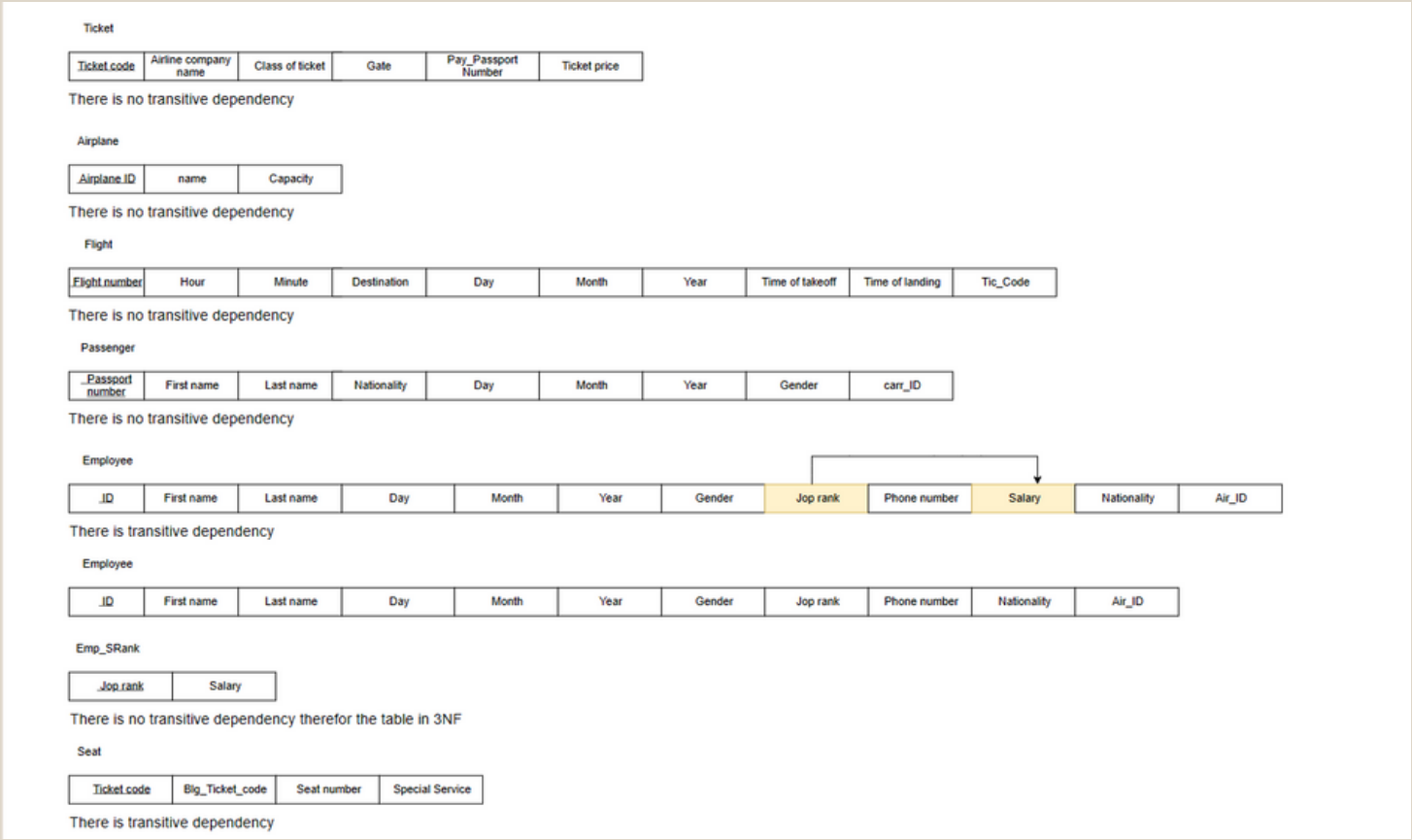
ID	First name	Last name	Day	Month	Year	Gender	Jop rank	Phone number	Salary	Nationality	Air_ID

Seat

Ticket code	Blg_Ticket_code	Seat number	Special Service

NORMALIZATION

3.Third Normal Form (3NF)



AIRPORT FINAL MAPPING