

# Riyadh Bus Reservation System

Department of Computer & Information Sciences

CS340 Project deliverable 1

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# Phase 1- Describing the Information System to Be Developed

# 1. Introduction

This document serves as the comprehensive foundation for the Riyadh Bus Reservation System project, including a series of interrelated phases. Our aim is to meticulously define the project's scope, clarify its purpose, explain the organizational context, outline essential data requirements, and specify functional and non-functional requirements, employing diverse data presentation techniques. IEEE and ACM professional codes of ethics will be embedded into the project. Begin by providing a clear overview of the Information System to be developed. We delve into the intricate task of ER/EER Modeling, which forms the foundation for the system's data structure. Then, we focus on Designing the Database and Normalization to ensure data integrity and efficiency. As the project transitions from design to implementation, we proceed to create tables using Oracle 10g, transforming our conceptual model into a practical database system. Finally, we conclude the project by crafting queries using Oracle, enabling users to interact with the system.

## 1.1. Background

In earlier years, transportation from one destination to the other has been significantly difficult and time-consuming because of poor systems, opportunities, and poor system management. However, nowadays numerous improvements to the existing transportation infrastructure have been undertaken and improved. Among these interventions are tour planners, ticketing systems, travel guides, etc. Bus travel is a significant and expanding industry in many nations; nevertheless, the current manual process of making bus reservations is time-consuming and physically demanding. In order to make bus reservations easier for customers, a useful and resource-frugal mechanism must be developed.

## 1.2. Description of the Organization

The Riyadh Bus Reservation System (RBRS) is an innovative solution aimed at transforming bus transportation services in Riyadh and potentially catering to various public transportation authorities, bus companies, and other entities involved in managing or operating bus services within urban regions. RBRS stands as a technological innovation It replaces the old, complicated, and time-consuming booking system with a streamlined and user-friendly database platform for bus reservations, optimizing the reservation process for both passengers and transport service providers. Tailored for Riyadh city, the adaptable RBRS framework holds the potential for broader application, addressing the evolving needs and requirements of diverse organizations and government sectors.

### 1.3. Purpose and Scope of the IS

Its primary purpose is to improve all aspects of bus reservation, from consumer booking to operational management. The information system's basic functionality allows consumers to quickly and easily book bus tickets online, select their preferred routes, and choose seats, greatly streamlining the reservation process and lowering the time and effort needed. A better travel experience is also made possible by the system's real-time updates on bus schedules, which ensure customers are informed of any delays or modifications. The information system of RBRS is not merely a tool for booking bus tickets but a comprehensive solution that encompasses customer service, operational efficiency, environmental responsibility, and community engagement.

## 2. Riyadh Bus Reservation System Scenario

### 1) User Registration and Login:

A [user](#) visits the Riyadh City Bus Reservation System website or mobile app and creates an account by providing their personal information, such as **userFirstName**, **userLastName**, **Gender**, **dateOfBirth**, **mobile**, **password**, and **email**.

Once registered, the user can log in to their account using their credentials, ensuring secure access to the reservation system.

### 2) Bus Routes and Schedules:

The system displays the [Bus](#) information including **busNumber**, **capacity**, **manufacture**, **year\_manufacture**, **Model**, and the available bus [routes](#) within Riyadh city, including their **route\_name**, **departureLocation**, **arrivalLocation**, **distance**, and **estimatedDuration**.

Users can search for specific routes or browse through the list to find the desired bus service.

### 3) Payment:

After selecting a preferred bus route the system shall display [Payment](#) which includes **payment\_amount**, **Payment\_date**, **Payment\_method**, and **seat\_number**.

### 4) Profile Management:

Passengers can view their profile information, which includes **userFirstName**, **userLastName**, **mobile**, **email**, and a list of their past and upcoming bus ride reservations. Passengers have the option to edit their profile information, such as updating their contact details or changing their password.

### 5) Bus Ride Cancellation:

If a passenger initiates a bus ride reservation but fails to complete the payment, the system allows them to cancel the reservation. The system releases the reserved seats for other passengers to book.

### 6) Payment Verification:

Passengers are prompted to enter their payment information, which may include credit card details or other payment methods. The system securely processes the payment and verifies its success. Upon successful payment verification, the system sends a payment confirmation message to the passenger's email address or mobile number.

### 7) Bus Driver Assignment:

A driver logs into their account and views their profile, which includes **driverFirstName**, **driverLastName**, **licenseNumber**, and a list of upcoming bus ride assignments. The system assigns bus rides to the driver based on their availability and assigns a unique **rideID** to each assignment.

### 8) Bus Ride History:

Passengers can view their complete bus ride history, including past reservations and completed journeys. The history includes details such as **route\_name**, **departureLocation**, **arrivalLocation**, and **estimatedDuration**.

## 3. Data requirements of the Riyadh Bus Reservation System

### 3.1. Entity Definition Table

Entity name	Identifier	Attribute	Description
User	User_ID	userFirstName userLastName Gender dateOfBirth mobile password email	Represents a user of the Bus reservation system. User is considered a super-entity which can be of two types, driver, and passenger.

<b>Bus</b>	Bus_ID	busNumber capacity manufacture year_manufacture Model	Represents a bus that operates within the system. Buses have unique identifiers, bus numbers, maximum seating capacity, manufacture, year manufacture, and model.
<b>Route</b>	Route_ID	route_name departureLocation arrivalLocation distance estimatedDuration	<b>Source &amp; destination:</b> the starting point of the route and the destination point of the route. <b>Distance:</b> the distance between the source and the destination in kilometers. <b>Duration:</b> the estimated time of the journey (in hours, mins.. etc.)
<b>Schedule</b>	Schedule_ID	departureTime arrivalTime	Represents the schedule of a bus schedule including the departure time and arrival time for each bus on a specific route.
<b>Payment</b>	Payment_ID	payment_amount Payment_date Payment_method	Represents a payment made by a user for a reservation. Payments have unique identifiers and a link to a specific reservation.
<b>Driver</b>	Driver_ID	license_number hire_date	Represents a bus driver employed by an agency. Drivers have unique identifiers, name, and driver's license numbers.
<b>Passenger</b>	passenger_ID	-	Represents a passenger making a reservation. Passengers have unique identifiers, names, and ages.
<b>Ticket</b>	Ticket_ID	BookingDate TicketPrice SeatNumber	Represents the booking date, the price of the ticket, and the seat number.



### 3.2. Relation Definition Table

Relation Name	Type	Attributes	Entities	Description
<b>Has Bus Schedule</b>	Ternary one-to-many-many TP: TP	-	BusSchedule Bus Route	This table holds information about buses available for reservation. Each bus is uniquely identified by a bus_ID. The busNumber attribute represents the unique identification number of the bus. The capacity attribute specifies the maximum number of passengers that the bus can accommodate.
<b>Buy Tickets</b>	Ternary One-to-many-many TP: TP	BookingDate Num_seat	Ticket Passenger BusSchedule	Represents the relationship where a user makes a reservation for a specific schedule. A user can make multiple reservations, and a reservation is associated with a single user, schedule, passenger, and payment.
<b>Follows</b>	one-to-many TP: TP	-	Bus Route	Represents the relationship where a bus follows a specific route. A route can be followed by multiple buses, but a bus follows a single route.
<b>Make Payment</b>	One-to-many TP: TP	-	payment ticket	This table represents the payment details associated with the bus reservation and the bus reservation system. Each payment is uniquely identified by payment_ID. The reservation_ID attribute references the reservation entity, indicating that is your vision for

				which the payment is made. The amount is attributed to the payment amount.
<b>Assigned to</b>	one-to-one TP: PT	-	Bus driver	Represents the relationship where a driver is assigned to a bus. A bus can have a single driver assigned to it, and a driver can be assigned to a single bus.

### 3.3. Attribute Definition Table

#### User Table:

Attribute Name	Description
<b>userFirstName</b>	Unique identifier for a user
<b>userLastName</b>	User's username
<b>gender</b>	User's gender
<b>email</b>	User's email
<b>password</b>	User's password
<b>mobile</b>	User's mobile number

#### Bus Table:

Attribute Name	Description
<b>capacity</b>	Maximum capacity of the bus
<b>busNumber</b>	Bus number
<b>manufacturer</b>	Bus manufacturer
<b>yearManufacturer</b>	Bus year of manufacture
<b>model</b>	Bus model name/ number

**Route table:**

Attribute Name	Description
route_name	The name of the specific route
departureLocation	The departure station or port
arrivalLocation	The arrival station
Distance	The distance between the stations
estimatedDuration	The time duration for the trip

**Payment Table:**

Attribute Name	Description
payment_amount	Date of the payment
Payment_date	Payment amount
Payment_method	payment method (ex: cash, card ...)

**Driver Table:**

Attribute Name	Description
hire_date	Driver's hire date
license_number	Driver's license number

## 4. Functional and Non-Functional System Requirements

### 4.1. Functional System Requirements

**Passenger:**

- The system shall ask the passenger to create an account.
- The system shall ask the passenger to enter information for account creation.
- The system shall save the passengers' information.

- The system shall verify the passengers' accounts.
- The system shall allow the passenger to display their profile.
- The system shall allow passengers to delete their profile.
- The system shall allow passengers to edit their profile.
- The system shall allow the passenger to view available bus rides.
- The system shall allow passengers to reserve bus rides.
- The system shall verify successful reservations.
- The system shall ask the passenger for the desired payment method.
- The system shall verify the payment.
- The system shall send verification messages after successful payment.
- The system shall allow the passenger to cancel a bus ride reservation if the payment isn't complete.
- The system shall allow the passenger to view their recent (1 week) bus ride history.

#### **Driver:**

- The system shall ask the driver to create an account.
- The system shall ask the driver to enter information for account creation.
- The system shall save the drivers' information.
- The system shall verify the driver's account.
- The system shall allow the driver to display their profile.
- The system shall allow drivers to delete their profiles.
- The system shall allow drivers to edit their profiles.
- The system shall assign bus rides for the driver.
- The system shall inform the driver about the bus ride duration.
- The system shall allow the driver to view bus ride information.

## **4.2. Non-functional System Requirements**

### **1. Performance Requirements:**

- 1.1. The system shall allow the passenger to access the system within 10 seconds after successfully logging in.
- 1.2. The system shall send the passengers' verification messages in no more than 7 seconds upon approved payment.
- 1.3. The system shall accommodate a minimum of 500 users concurrently.

### **2. Safety Requirements:**

- 2.1. The system shall undergo various testing prior to release.
- 2.2. The system shall upgrade its database continuously every 12 hours.

### **3. Reliability Requirements:**

- 3.1. The systems' failure rate should not be more than 1 failure per 150 operations.

3.2. The system downtime should be 20 minutes per month maximum.

#### **4. Usability Requirements:**

- 4.1. The system shall allow the passenger to book a bus ride within 3 minutes.
- 4.2. The system shall allow users to view available bus rides in no more than 7 seconds.

#### **5. Security Requirements:**

- 5.1. The system shall notify the passenger if a login attempt occurs.
- 5.2. The system shall send a verification if payment is complete.
- 5.3. The system shall block the passenger's account after 3 consecutive failed login attempts.
- 5.4. The system shall have specific restrictions on the passenger's password.

#### **6. Data Integrity Requirements:**

- 6.1. The system shall constantly update the information on the system if any changes have been made.
- 6.2. The system shall perform a backup for every updated database.

#### **7. Availability Requirements:**

- 7.1. The system shall be available 95% of the time.
- 7.2. The system shall be available 97% of the time from 6 AM to 6 PM.

#### **8. Constraints:**

- 8.1. The system shall provide necessary information in both Arabic and English form.
- 8.2. The passenger's password should not exceed 12 characters.
- 8.3. The passenger's password should not be less than 8 characters.

#### **9. Portability:**

- 9.1. Modifying the iOS version of the system to run on Android and Windows should require changing 15% of the source code maximum.

## **5. Relevant clauses from the IEEE and ACM Professional Code of Ethics**

### **5.1. IEEE Code of Ethics**

- To accept the responsibility for making the right decision for the welfare of the public.
- To be realistic and honest with the available data.
- To improve the understanding of the technology and the appropriate system.

- To reject bribery in all possible forms.
- To avoid injuring the property and employment by harmful actions.
- To treat all people equally regardless of their race, religion, and gender.
- To assist and help colleagues and workers in the system development.

## 5.2. ACM Code of Ethics

### 5.2.1. General Ethical Principles

- 1.1. Contribute to society and human well-being.
- 1.2. Avoid harm.
- 1.3. Be honest and trustworthy.
- 1.4. Be fair and take the right action.
- 1.5. Respect the required work to produce creative works and new ideas.
- 1.6. Respect the privacy of the work.
- 1.7. Honor confidentiality.

### 5.2.2. Professional Responsibilities

- 2.1. strive to achieve high quality in producing professional work.
- 2.2. Maintain high standards of competence in conducting ethical practices.
- 2.3. Respect and follow existing rules in your work.
- 2.4. Accept and provide the appropriate review in the profession.
- 2.6. Perform work only in the area of competence.

### 5.2.3. Professional Leadership Principles

- 3.1. Ensure that the public good is the central concern all of the time.
- 3.2. Encourage acceptance and evaluate fulfillment of social responsibility by all members of the organization.
- 3.3. Manage resources to increase the quality of working life.
- 3.5. Create opportunities for members of the organization.
- 3.6. Use care when changing and modifying the system.

### 5.2.4. Compliance with the Code

- 4.1. Promote and respect the principles of the code.
- 4.2. Treat any violation of the code as inconsistent with membership in the ACM.

## 6. Teamwork Distribution and Strategy

### 6.1. Strategy

One of the most important strategies for demonstrating teamwork is to establish clear roles and responsibilities for each team member. This ensures that everyone understands their specific tasks and areas of expertise, and it promotes a sense of accountability within the team. According to phase one, each participant was responsible for her own task.

Each team member actively shared their information, ideas, and feedback with one another. This was done through regular meetings and instant messaging, each participant tracked their progress and provided real-time updates.

Active participation is essential for demonstrating teamwork. In our project, all team members were actively engaged in discussions, contributing ideas, providing information, and offering constructive feedback and advice. Throughout the project, team members assist and motivate one another.

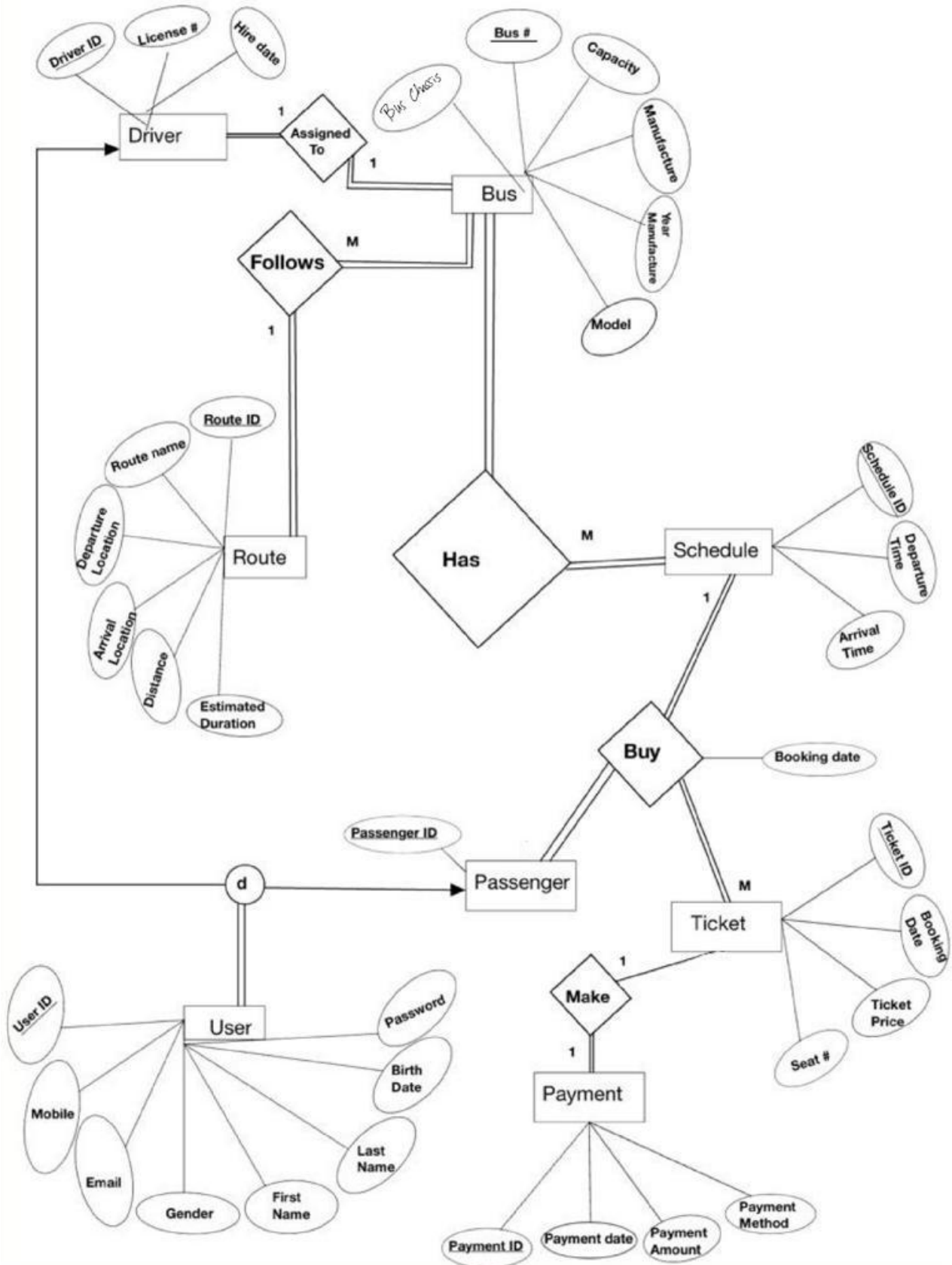
### 6.2. Individual Contribution

Name	Contribution
Sarah AlJurbua	1-Description of the organization. 2-description of the purpose & scope of the information system. 3- Data scenarios
Noura AlAngari	1-Functional system requirement. 2-Nonfunctional system requirements.
Nouf Alabduljabbar	1-Data requirements. 2- Contribution of team members.
Nour Fatoom	1-Identify relevant clauses from IEEE and ACM.

## **Phase 2- ER/EER Modeling**



## 7. EER Diagram



## 8. Entity Definition Table

Entity name	Identifier	Attribute	Description
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<b>Buy Tickets</b>	Ternary One-to-many-many TP: TP	BookingDate Num_seat	Ticket Passenger BusSchedule	Represents the relationship where a user makes a reservation for a specific schedule. A user can make multiple reservations, and a reservation is associated with a single user, schedule, passenger, and payment.
<b>Follows</b>	one-to-many	-	Bus	Represents the relationship

	TP: TP		Route	where a bus follows a specific route. A route can be followed by multiple buses, but a bus follows a single route.
<b>Make Payment</b>	one-to-many TP: TP	-	payment ticket	This table represents the payment details associated with the bus reservation and the bus reservation system. Each payment is uniquely identified by payment_ID. The reservation_ID attribute references the reservation entity, indicating that is your vision for which the payment is made. The amount is attributed to the payment amount.
<b>Assigned to</b>	one-to-one TP: PT	-	Bus driver	Represents the relationship where a driver is assigned to a bus. A bus can have a single driver assigned to it, and a driver can be assigned to a single bus.

## 9. Business Rules

- The passenger shall be able to access the website or application with their username and password.
- The driver shall be able to access the website or application with their username and password.
- The system shall only allow passengers with an account to reserve bus rides.
- The passenger shall be able to select their desired payment method.
- Each bus ride shall have at least one driver.
- Each bus ride shall have at least one passenger.
- The system shall save every information entered by the passenger or driver to their associated database.
- The system shall synchronize the data to the server within 8 hours.
- The system shall update its database every 12 hours.

- The system shall provide the necessary description of the bus ride for the driver and passenger.
- The system shall provide Arabic and English language options.

## 10. Relevant clauses from the IEEE and ACM Professional Code of Ethics

### 10.1. IEEE Code of Ethics

- To hold paramount the safety, health, and welfare of the public, to strive to comply with ethical design and sustainable development practices.
- To protect the privacy of others, and to disclose promptly factors that might endanger the public or the environment.
- To maintain and improve our technical competence and to undertake technological tasks for others only if qualified by training or experience, or after full disclosure of pertinent limitations.
- To uphold the highest standards of integrity, responsible behavior, and ethical conduct in professional activities.
- To treat all persons fairly and with respect, and to not engage in discrimination based on characteristics such as race, religion, gender, disability, age, or national origin.
- To support colleagues and co-workers in following this code of ethics, to strive to ensure the code is upheld, and to not retaliate against individuals reporting a violation.

### 10.2. ACM Code of Ethics

#### 10.2.1. General Ethical Principles

- 1.1 Make a contribution to society and the welfare of people.
- 1.2 Respect other people's privacy
- 1.3 Be reliable and sincere.
- 1.4 Be fair and make an effort to avoid discrimination.
- 1.5 Protect others from harm.

#### 10.2.2. Professional Responsibilities

- 2.1 Aim for the highest levels of excellence, efficacy, and dignity.
- 2.2 Obtain and uphold professional competence.
- 2.3 Know and abide by the rules and regulations that govern the system.
- 2.4 Give due credit for any creative works.
- 2.5 Protect the privacy of important information.

- 2.6 Respect commitments, agreements, and contracts.
- 2.7 Increase knowledge of computing and its effects among the people

### **10.2.3. Professional Leadership Principles**

- 3.1 Encourage public understanding and awareness of computing.
- 3.2 Develop and support laws that encourage the wise use of technology.
- 3.4 Only use resources in a way that serves the general good.
- 3.4 Educate people about responsible computing and encourage their adoption.

### **10.2.4. Compliance with the Code**

- 4.1 Learn the Code thoroughly, read and comprehend the ACM Code of Ethics. Make sure you understand the rules and regulations it lays out.
- 4.2 Secure user data and prevent it from unauthorized access by putting in place the necessary safeguards.

## **11. Teamwork Distribution and Strategy**

### **11.1. Strategy**

Determining each team member's precise tasks and responsibilities is one of the most crucial tactics for exhibiting collaboration. This builds a sense of accountability among team members and guarantees that everyone is aware of their particular responsibilities and areas of expertise. Phase one stipulated that each participant was in charge of her own assignment.

Each team member engaged in active communication with the others, exchanging ideas, information, and criticism. Regular meetings and instant messaging were used for this; each participant kept track of their development and gave real-time updates.

To exhibit collaboration, one must actively participate. Every team member actively participated in our project by bringing ideas to the table, exchanging information, and giving helpful criticism and guidance. During the project, team members support and encourage one another.

## 11.2. Individual Contribution

Name	Contribution
Sarah AlJurbua	EER diagram
Noura AlAngari	Business Rules
Nouf Alabduljabbar	Relevant clauses from the IEEE and ACM Professional Code of Ethics
Nour Fatoom	EER Diagram

# Riyadh Bus Reservation System

Department of Computer & Information Sciences

CS340 Project deliverable 3

Oct 25th, 2023

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# **Phase 3**

## **Designing Database and Normalization**

## 12. Data Dictionary

### User

Column name	Key type	Constraints	FK table	FK column	Data type	Length
UserID	PK	Not null, unique			Varchar	9
F_Name		Not null			Varchar	15
L_Name		Not null			Varchar	15
Gender		Not null			Char	1
Mobile		Not null, unique			Char	10
Email		Not null			Varchar	50
Password		Not null			Varchar	20
DOB		Not null			dd-mm-yyyy	10

### Driver

Column name	Key type	Constraints	FK table	FK column	Data type	Length
DriverID	PK, FK	Not null, unique	User	UserID	Varchar	9
Licenses#		Not null, unique			Varchar	9
Hire_date		Not null			Date	dd-mm-yy yy

### Passenger

Column name	Key type	Constraints	FK table	FK column	Data type	Length
PassengerID	PK, FK	Not null, unique	User	UserID	Varchar	9
Seat#		Not null, unique			Number	9
BookingDate		Not null			Date	dd-mm-yy yy

### **Schedule**

Column name	Key type	Constraints	FK table	FK column	Data type	Length
ScheduleID	PK	Not null, unique			Varchar	9
Dep_time		Not null			Varchar	10
Arr_time		Not null			Varchar	10

### **Bus**

Column name	Key type	Constraints	FK table	FK column	Data type	Length
Bus ID	PK	Not null, unique			Varchar	9
Bus number		Not null, unique			Number	4
Capacity		Not null			Varchar	10
Manufacture		Not null			Varchar	10
Year manufacture		Not null			Date	dd-mm-yy yy
Model		Not null			Varchar	10

### **Route**

Column name	Key type	Constraints	FK table	FK column	Data type	Length
Route ID	PK	Not null, unique			Varchar	9
Route Name		Not null, Unique			Varchar	15
Departure location		Not null			Varchar	20
Arrival location		Not null			Varchar	20
Distance		Not null			Varchar	20
Estimated duration		Not null			Varchar	9

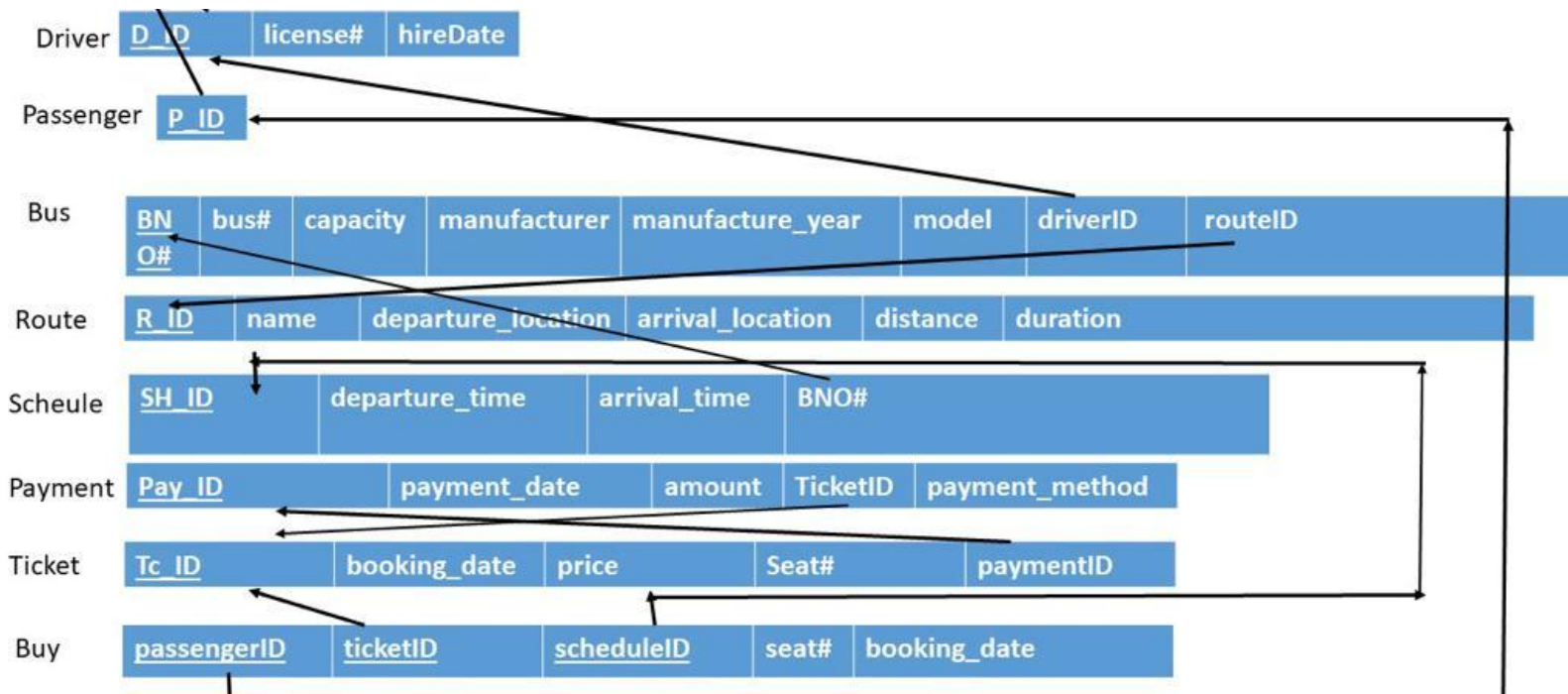
### **Ticket**

Column name	Key type	Constraints	FK table	FK column	Data type	Length
Ticket ID	PK	Not null. unique			Varchar	9
Booking Date		Not null	Passenger	Booking Date	Date	dd-mm-yy yy
Ticket price		Not null			Varchar	9
Seat number		Not null, Unique	Passenger	seat #	Number	9

### **Payment**

Column name	Key type	Constraints	FK table	FK column	Data type	Length
Payment ID	PK	Not null. unique			Varchar	10
Payment amount	FK	Not null	Ticket	Ticket Price	Varchar	9
Payment date		Not null			Date	dd-mm-yy yy
Payment method		Not null			Varchar	15

## 13. Relational Model



## 14. Relevant clauses from the IEEE and ACM Professional Code of Ethics

### 14.1. IEEE Code of Ethics

- To accept the responsibility for making the right decision for the welfare of the public.
- To be realistic and honest with the available data.
- To improve the understanding of the technology and the appropriate system.
- To reject bribery in all possible forms.
- To avoid injuring the property and employment by harmful actions.
- To treat all people equally regardless of their race, religion, and gender.

- To assist and help colleagues and workers in the system development.

## 14.2. ACM Code of Ethics

### 14.2.1. General Ethical Principles

- 1.1. Contribute to society and human well-being.
- 1.2. Avoid harm.
- 1.3. Be honest and trustworthy.
- 1.4. Be fair and take the right action.
- 1.5. Respect the required work to produce creative works and new ideas.
- 1.6. Respect the privacy of the work.
- 1.7. Honor confidentiality.

### 14.2.2. Professional Responsibilities

- 2.1. strive to achieve high quality in producing professional work.
- 2.2. Maintain high standards of competence in conducting ethical practices.
- 2.3. Respect and follow existing rules in your work.
- 2.4. Accept and provide the appropriate review in the profession.
- 2.6. Perform work only in the area of competence.

### 14.2.3. Professional Leadership Principles

- 3.1. Ensure that the public good is the central concern all of the time.
- 3.2. Encourage acceptance and evaluate fulfillment of social responsibility by all members of the organization.
- 3.3. Manage resources to increase the quality of working life.
- 3.5. Create opportunities for members of the organization.
- 3.6. Use care when changing and modifying the system.

### 14.2.4. Compliance with the Code

- 4.1. Promote and respect the principles of the code.
- 4.2. Treat any violation of the code as inconsistent with membership in the ACM.

## 15. Teamwork Distribution and Strategy

### 15.1. Strategy

Setting defined tasks and duties for each team member is one of the most crucial tactics for exhibiting collaboration. As a result, the team feels more accountable and everyone is guaranteed to grasp their own responsibilities and areas of expertise. In the first phase, every participant was in charge of her own assignment.

Every member of the team actively communicated with the others, offering ideas, information, and criticism. Each participant recorded their progress and gave real-time updates, and this was accomplished through frequent meetings and instant chat.

To demonstrate collaboration, involvement must be active. Every member of the team actively participated in our project, bringing ideas, knowledge, and advice to the table as well as constructive criticism. Team members support and encourage one another during the project.

### 15.2. Individual Contribution

Name	Contribution
Sarah AlJurbua	Relevant clauses from the IEEE and ACM professional Code of Ethics
Noura AlAngari	Data Dictionary
Nouf Alabduljabbar	Normalized Relational Model
Nour Fatoom	Data Dictionary

# Riyadh Bus Reservation System

Department of Computer & Information Sciences

CS340 Project deliverable 4

**Instructor:** Dr. Roohi Jan

**Section:** 799

**Prepared By:**

Sarah AlJurbua 220410528

Noura AlAngari 220410015

Nouf Abduljabbar 220410775

Nour Fatoom 220410494



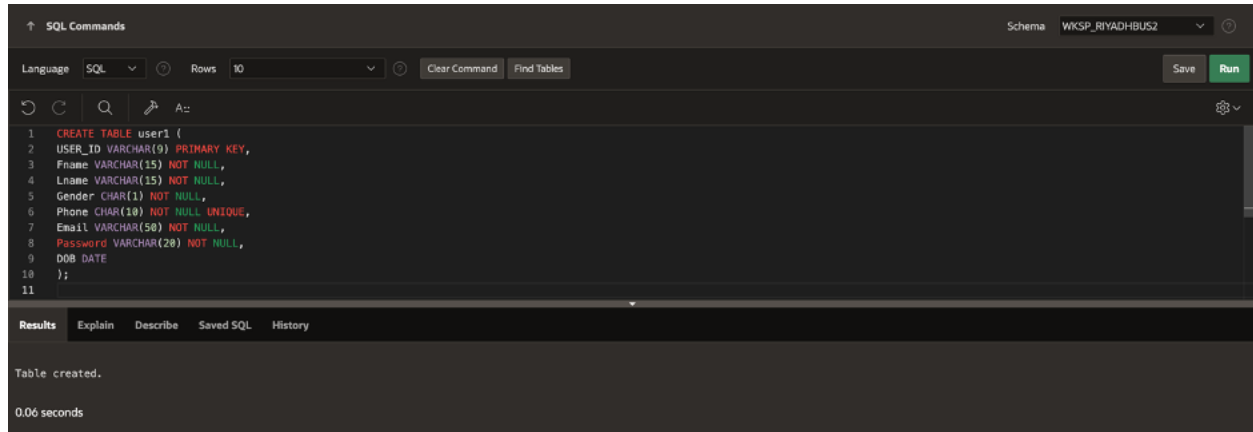
## **Phase 4**

# **Creating Tables Using Oracle 10g**

## 16. Creating Tables

A new workspace has been created to ensure that tables don't exist before creation. Which included creating tables based on entities and inserting 10 records for each entity.

The SQL file is attached in Moodle along with the phase 4 submission.

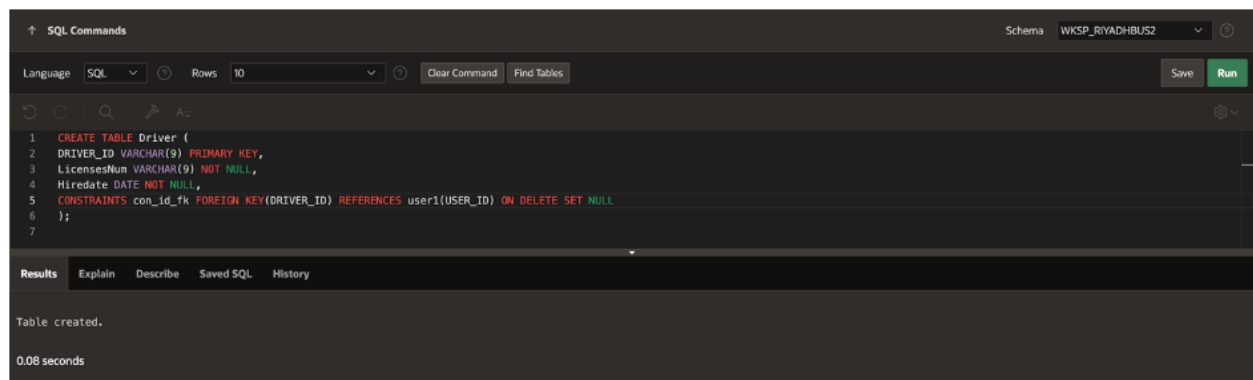


The screenshot shows a SQL editor interface with the following elements:

- SQL Commands** title bar.
- Schema** dropdown set to **WKSP\_RIYADHBUS2**.
- Language** dropdown set to **SQL**.
- Rows** dropdown set to **10**.
- Clear Command** and **Find Tables** buttons.
- Save** and **Run** buttons.
- SQL Command** text area containing:

```
1 CREATE TABLE user1 (  
2   USER_ID VARCHAR(9) PRIMARY KEY,  
3   FName VARCHAR(15) NOT NULL,  
4   LName VARCHAR(15) NOT NULL,  
5   Gender CHAR(1) NOT NULL,  
6   Phone CHAR(10) NOT NULL UNIQUE,  
7   Email VARCHAR(50) NOT NULL,  
8   Password VARCHAR(20) NOT NULL,  
9   DOB DATE  
10 );  
11
```
- Results** tab selected, showing:

```
Table created.  
  
0.06 seconds
```



The screenshot shows a SQL editor interface with the following elements:

- SQL Commands** title bar.
- Schema** dropdown set to **WKSP\_RIYADHBUS2**.
- Language** dropdown set to **SQL**.
- Rows** dropdown set to **10**.
- Clear Command** and **Find Tables** buttons.
- Save** and **Run** buttons.
- SQL Command** text area containing:

```
1 CREATE TABLE Driver (  
2   DRIVER_ID VARCHAR(9) PRIMARY KEY,  
3   LicensesNum VARCHAR(9) NOT NULL,  
4   Hiredate DATE NOT NULL,  
5   CONSTRAINTS con_id_fk FOREIGN KEY(DRIVER_ID) REFERENCES user1(USER_ID) ON DELETE SET NULL  
6 );  
7
```
- Results** tab selected, showing:

```
Table created.  
  
0.08 seconds
```

↑ SQL Commands

Schema WKSP\_RIYADHBUS2

Language SQL Rows 10 Clear Command Find Tables Save Run

```
1 CREATE TABLE Passenger (
2   PASS_ID VARCHAR(9) PRIMARY KEY,
3   CONSTRAINTS con_id2_fk FOREIGN KEY(PASS_ID) REFERENCES user1(USER_ID) ON DELETE SET NULL
4 );
5
6
```

Results Explain Describe Saved SQL History

Table created.

0.06 seconds

↑ SQL Commands

Schema WKSP\_RIYADHBUS2

Language SQL Rows 10 Clear Command Find Tables Save Run

```
1 CREATE TABLE Route(
2   Route_ID VARCHAR(9) PRIMARY KEY,
3   R_name VARCHAR(15),
4   DepLocation VARCHAR(20),
5   ArrLocation VARCHAR(20),
6   Distance VARCHAR(20),
7   EDuration VARCHAR(9)
8 );
9
```

Results Explain Describe Saved SQL History

Table created.

0.06 seconds

↑ SQL Commands

Schema WKSP\_RIYADHBUS2

Language SQL Rows 10 Clear Command Find Tables Save Run

```
1 CREATE TABLE Bus (
2   VehicleID VARCHAR(9) ,
3   busNum NUMBER(4) PRIMARY KEY,
4   capacity1 VARCHAR(10),
5   manufacture VARCHAR(10),
6   manufactureYear DATE,
7   model1 VARCHAR(10),
8   DriverID VARCHAR(9) NOT NULL,
9   RouteID VARCHAR(9) NOT NULL,
10  CONSTRAINTS con_id3_fk FOREIGN KEY(DriverID) REFERENCES Driver(DRIVER_ID) ON DELETE SET NULL,
11  CONSTRAINTS con_id4_fk FOREIGN KEY(RouteID) REFERENCES Route(Route_ID) ON DELETE SET NULL
12 );
```

Results Explain Describe Saved SQL History

Table created.

0.06 seconds

```

2
3 create table schedule (
4   sh_id number(9) primary key,
5   departure_time varchar(10) not null,
6   arival_time varchar(10) not null,
7
8   bus# number(4) not null,
9   constraint bus#_fk foreign key(bus#) references bus(busnum) on delete set null
10 )

```

Results Explain Describe Saved SQL History

Table created.

```

13
14 create table Ticket(
15   tc_id varchar(9) primary key,
16   booking_date date not null,
17   ticket_price varchar(9) not null,
18   seat_number number(9) not null
19
20 )
21
22
23
24
25
26

```

Results Explain Describe Saved SQL History

Table created.

```

23
24 create table Payment(
25 pay_id varchar(10) primary key,
26 payment_amount varchar(9) not null,
27 payment_date date not null,
28 payment_method varchar(15) not null,
29
30 ticket_id varchar(9) not null,
31 constraint ticketid_fk foreign key(ticket_id) references ticket(tc_id) on delete set null
32 )
33
34
35
36

```

Results Explain Describe Saved SQL History

Table created.

```

3 create table Buy(
4 TicketID varchar(9) primary key,
5 PassengerID varchar(9) not null,
6 ScheduleID number(9) not null,
7
8 seat_number number(9) not null,
9 booking_date date not null,
10
11 constraint PassengerID_fkk foreign key(PassengerID) references Passenger(pass_id) on delete set null,
12 constraint TicketID_fkk foreign key(TicketID) references Ticket(tc_id) on delete set null,
13 constraint ScheduleID_fkk foreign key(ScheduleID) references schedule(sh_id) on delete set null
14 )
15

```

Results Explain Describe Saved SQL History

Table created.

## 17. Inserting data

### 1) Inserting 10 records in User1 table:

```
INSERT INTO user1 VALUES ('174123456', 'John', 'Doe', 'M', '0582644219',  
'john.doe@email.com', 'password123', TO_DATE('20-OCT-2003', 'DD-MON-YYYY'));
```

```
INSERT INTO user1 VALUES ('356789012', 'Jane', 'Smith', 'F', '0517200172', 'jane@email.com',  
'pass456word', TO_DATE('10-12-1988', 'DD-MON-YYYY'));
```

```
INSERT INTO user1 VALUES ('726199362', 'Sarah', 'Abdullah', 'F', '0588173920',  
'sarah.abdullah@email.com', 'P@ssw0rd123', TO_DATE('23-AUG-1995', 'DD-MON-YYYY'));
```

```
INSERT INTO user1 VALUES ('388103820', 'Ethan', 'Wilson', 'M', '0527112946',  
'ethanwilson@email.com', 'Secret!789', TO_DATE('12-APR-1987', 'DD-MON-YYYY'));
```

```
INSERT INTO user1 VALUES ('851936289', 'Emily', 'Johnson', 'F', '0528173629',  
'EJohnson@email.com', 'RandomPwd456', TO_DATE('05-JAN-2000', 'DD-MON-YYYY'));
```

```
INSERT INTO user1 VALUES ('846200183', 'Christopher', 'Davis', 'M', '0527183622',  
'chrisD@email.com', '1SecurePwd', TO_DATE('30-SEP-1982', 'DD-MON-YYYY'));
```

```
INSERT INTO user1 VALUES ('112936271', 'Benjamin', 'Taylor', 'M', '0538229104',  
'bentaylor@email.com', 'Pa$$123', TO_DATE('08-JUL-1994', 'DD-MON-YYYY'));
```

```
INSERT INTO user1 VALUES ('337190003', 'Olivia', 'Brown', 'F', '0527190036',  
'Brownolivia@email.com', 'ChocoLover77', TO_DATE('14-MAR-14', 'DD-MON-YYYY'));
```

```
INSERT INTO user1 VALUES ('936192254', 'Sophia', 'Martinez', 'F', '0552755189',  
'martinez@email.com', 'MyP@ss20', TO_DATE('21-DEC-2003', 'DD-MON-YYYY'));
```

```
INSERT INTO user1 VALUES ('628816390', 'Alex', 'Joseph', 'M', '0518226390',  
'ALJoseph@email.com', 'JosephAlex2001', TO_DATE('03-JUN-2001', 'DD-MON-YYYY'));
```

```

1 select *
2 from User1

```

USER_ID	FNAME	LNAME	GENDER	PHONE	EMAIL	PASSWORD	DOB
936192254	Sophia	Martinez	F	0552755189	martinez@email.com	MyP@ss20	12/21/2003
356789012	Jane	Smith	F	0517200172	jane@email.com	pass456word	12/10/1988
846200183	Christopher	Davis	M	0527183622	chrisD@email.com	1SecurePwD	09/30/1982
174123456	John	Doe	M	0582644219	john.doe@gmail.com	password123	10/20/2003
851936289	Emily	Johnson	F	0528173629	EJohnson@email.com	RandomPwD456	01/05/2000
628816390	Alex	Joseph	M	0518226390	AL_Joseph@email.com	JosephAlex2001	06/03/2001
112936271	Benjamin	Taylor	M	0538229104	bentaylor@email.com	Pa\$\$123	07/08/1994
726199362	Sarah	Abdullah	F	0588173920	sarah.abdullah@email.com	P@sswOrd123	08/23/1995
388103820	Ethan	Wilson	M	0527112946	ethanwilson@email.com	Secret1789	04/12/1987
337190003	Olivia	Brown	F	0527190036	Brownolivia@email.com	ChocoLover77	03/14/0014

10 rows returned in 0.00 seconds [Download](#)

## 2) Inserting 10 records in Driver table:

```
INSERT INTO Driver VALUES ('174123456', '123456789', TO_DATE('01-JAN-2022', 'DD-MON-YYYY'));
```

```
INSERT INTO Driver VALUES ('356789012', '987654321', TO_DATE('15-FEB-2023', 'DD-MON-YYYY'));
```

```
INSERT INTO Driver VALUES ('726199362', '567890123', TO_DATE('03-MAR-2021', 'DD-MON-YYYY'));
```

```
INSERT INTO Driver VALUES ('388103820', '345678901', TO_DATE('22-APR-2021', 'DD-MON-YYYY'));
```

```
INSERT INTO Driver VALUES ('851936289', '678901234', TO_DATE('10-MAY-2022', 'DD-MON-YYYY'));
```

```
INSERT INTO Driver VALUES ('846200183', '123456789', TO_DATE('05-JUN-2022', 'DD-MON-YYYY'));
```

```
INSERT INTO Driver VALUES ('112936271', '987654321', TO_DATE('14-JUL-2023', 'DD-MON-YYYY'));
```

```
INSERT INTO Driver VALUES ('337190003', '567890123', TO_DATE('29-AUG-2020', 'DD-MON-YYYY'));
```

```
INSERT INTO Driver VALUES ('936192254', '345678901', TO_DATE('12-SEP-2020', 'DD-MON-YYYY'));
```

```
INSERT INTO Driver VALUES ('628816390', '678901234', TO_DATE('07-OCT-2021', 'DD-MON-YYYY'));
```

1	select *
2	from Driver

Results	Explain	Describe	Saved SQL	History
DRIVER_ID		LICENSESNUM		HIREDATE
356789012		987654321		02/15/2023
846200183		123456789		06/05/2022
628816390		678901234		10/07/2021
936192254		345678901		09/12/2020
174123456		123456789		01/01/2022
851936289		678901234		05/10/2022
112936271		987654321		07/14/2023
726199362		567890123		03/03/2021
388103820		345678901		04/22/2021
337190003		567890123		08/29/2020

10 rows returned in 0.01 seconds [Download](#)

### 3) Inserting 10 records in Passenger table:

INSERT INTO Passenger VALUES ('174123456');

INSERT INTO Passenger VALUES ('356789012');

INSERT INTO Passenger VALUES ('726199362');

INSERT INTO Passenger VALUES ('388103820');

INSERT INTO Passenger VALUES ('851936289');

INSERT INTO Passenger VALUES ('846200183');

INSERT INTO Passenger VALUES ('112936271');

INSERT INTO Passenger VALUES ('337190003');

INSERT INTO Passenger VALUES ('936192254');

INSERT INTO Passenger VALUES ('628816390');



1	select *
2	from passenger

Results	Explain	Describe	Saved SQL	History
				PASS_ID
112936271				
174123456				
337190003				
356789012				
388103820				
628816390				
726199362				
846200183				
851936289				
936192254				
10 rows returned in 0.01 seconds <a href="#">Download</a>				

#### 4) Inserting 10 records in Route table:

INSERT INTO Route VALUES ('R12345678', 'Downtown Exp', 'Riyadh Center', 'Financial District', '10 miles', '00:20:00');

INSERT INTO Route VALUES ('R23456789', 'Coastal Blvd', 'Riyadh Harbor', 'Beachfront Park', '15 miles', '00:30:00');

INSERT INTO Route VALUES ('R34567890', 'Mountain Trail', 'Riyadh Nature Park', 'Scenic Overlook', '8 miles', '00:15:00');

INSERT INTO Route VALUES ('R45678901', 'Urban Connect', 'Riyadh Business Dist', 'Residential Zone', '5 miles', '00:10:00');

INSERT INTO Route VALUES ('R56789012', 'Suburban Loop', 'Riyadh Shopping', 'Suburbia Mall', '12 miles', '00:25:00');

INSERT INTO Route VALUES ('R67890123', 'Parkside Dr', 'Riyadh Central Park', 'Comm Garden', '7 miles', '00:12:00');

INSERT INTO Route VALUES ('R78901234', 'Lakeview Tour', 'Lakeside Commons', 'Woodland Park', '20 miles', '00:40:00');

```
INSERT INTO Route VALUES ('R89012345', 'Cityscape Circ', 'Skyline Plaza', 'Metropolis Square', '18 miles', '00:35:00');
```

```
INSERT INTO Route VALUES ('R90123456', 'Historic Journ', 'Old Town Square', 'Heritage District', '9 miles', '00:18:00');
```

```
INSERT INTO Route VALUES ('R01234567', 'Sunset Serenit', 'Riyadh West End', 'Sunset Point', '14 miles', '00:28:00');
```

1	select *
2	from route

ROUTE_ID	R_NAME	DEPLOCATION	ARRLOCATION	DISTANCE	EDURATION
R12345678	Downtown Exp	Riyadh Center	Financial District	10 miles	00:20:00
R78901234	Lakeview Tour	Lakeside Commons	Woodland Park	20 miles	00:40:00
R56789012	Suburban Loop	Riyadh Shopping	Suburbia Mall	12 miles	00:25:00
R67890123	Parkside Dr	Riyadh Central Park	Comm Garden	7 miles	00:12:00
R89012345	Cityscape Circ	Skyline Plaza	Metropolis Square	18 miles	00:35:00
R90123456	Historic Journ	Old Town Square	Heritage District	9 miles	00:18:00
R34567890	Mountain Trail	Riyadh Nature Park	Scenic Overlook	8 miles	00:15:00
R01234567	Sunset Serenit	Riyadh West End	Sunset Point	14 miles	00:28:00
R23456789	Coastal Blvd	Riyadh Harbor	Beachfront Park	15 miles	00:30:00
R45678901	Urban Connect	Riyadh Business Dist	Residential Zone	5 miles	00:10:00

10 rows returned in 0.02 seconds [Download](#)

## 5) Inserting 10 records in Bus table:

```
INSERT INTO Bus VALUES ('123456789', 1011, '50', 'Mercedes', TO_DATE('2019', 'YYYY'), 'C-Class', '174123456', 'R12345678');
```

```
INSERT INTO Bus VALUES ('234567899', 1022, '45', 'Volvo', TO_DATE('2019', 'YYYY'), 'V60', '356789012', 'R23456789');
```

```
INSERT INTO Bus VALUES ('345678900', 1033, '40', 'MAN', TO_DATE('2021', 'YYYY'), 'Lion Coach', '726199362', 'R34567890');
```

```
INSERT INTO Bus VALUES ('456789011', 1044, '55', 'Scania', TO_DATE('2021', 'YYYY'), 'Touring', '388103820', 'R45678901');
```

```
INSERT INTO Bus VALUES ('567890122', 1055, '48', 'Iveco', TO_DATE('2020', 'YYYY'), 'Crossway', '851936289', 'R56789012');
```

```
INSERT INTO Bus VALUES ('678901234', 1066, '52', 'Setra', TO_DATE('2020', 'YYYY'), 'S 416 HDH', '846200183', 'R67890123');
```

```
INSERT INTO Bus VALUES ('789012342', 1077, '45', 'Neoplan', TO_DATE('2023', 'YYYY'), 'Starliner', '112936271', 'R78901234');
```

```
INSERT INTO Bus VALUES ('890123456', 1088, '50', 'Van Hool', TO_DATE('2019', 'YYYY'),
'TX', '337190003', 'R89012345');
```

```
INSERT INTO Bus VALUES ('901234560', 1099, '42', 'Temsu', TO_DATE('2019', 'YYYY'),
'MD9 LE', '936192254', 'R90123456');
```

```
INSERT INTO Bus VALUES ('012345673', 1100, '47', 'Solaris', TO_DATE('2019', 'YYYY'),
'InterUrbis', '628816390', 'R01234567');
```

1 select \*  
2 from bus

Results

Explain

Describe

Saved SQL

History

VEHICLEID	BUSNUM	CAPACITY1	MANUFACTURE	MANUFACTUREYEAR	MODEL1	DRIVERID	ROUTEID
345678900	1033	40	MAN	11/01/2021	Lion Coach	726199362	R34567890
123456789	1011	50	Mercedes	11/01/2019	C-Class	174123456	R12345678
567890122	1055	48	Iveco	11/01/2020	Crossway	851936289	R56789012
890123456	1088	50	Van Hool	11/01/2019	TX	337190003	R89012345
012345673	1100	47	Solaris	11/01/2019	InterUrbis	628816390	R01234567
234567899	1022	45	Volvo	11/01/2019	V60	356789012	R23456789
456789011	1044	55	Scania	11/01/2021	Touring	388103820	R45678901
678901234	1066	52	Setra	11/01/2020	S 416 HDH	846200183	R67890123
789012342	1077	45	Neoplan	11/01/2023	Starliner	112936271	R78901234
901234560	1099	42	Temsu	11/01/2019	MD9 LE	936192254	R90123456

10 rows returned in 0.02 seconds

Download

## 6) Inserting 10 records in schedule table:

```
INSERT INTO schedule VALUES (183719026, '08:00 AM', '10:00 AM', 1011);
```

```
INSERT INTO schedule VALUES (263991702, '09:30 AM', '11:30 AM', 1022);
```

```
INSERT INTO schedule VALUES (373819462, '10:45 AM', '12:45 PM', 1033);
```

```
INSERT INTO schedule VALUES (471822637, '12:15 PM', '02:15 PM', 1044);
```

```
INSERT INTO schedule VALUES (518263911, '01:45 PM', '03:45 PM', 1055);
```

```
INSERT INTO schedule VALUES (661528902, '03:00 PM', '05:00 PM', 1066);
```

```
INSERT INTO schedule VALUES (717825537, '04:30 PM', '06:30 PM', 1077);
```

```
INSERT INTO schedule VALUES (881625900, '06:00 PM', '08:00 PM', 1088);
```

```
INSERT INTO schedule VALUES (947281902, '07:15 PM', '09:15 PM', 1099);
```

```
INSERT INTO schedule VALUES (101826352, '08:45 PM', '10:45 PM', 1100);
```

```
1 select *
2 from schedule
```

Results	Explain	Describe	Saved SQL	History
SH_ID	DEPARTURE_TIME	ARIVAL_TIME	BUS#	
471822637	12:15 PM	02:15 PM	1044	
518263911	01:45 PM	03:45 PM	1055	
661528902	03:00 PM	05:00 PM	1066	
881625900	06:00 PM	08:00 PM	1088	
101826352	08:45 PM	10:45 PM	1100	
373819462	10:45 AM	12:45 PM	1033	
263991702	09:30 AM	11:30 AM	1022	
183719026	08:00 AM	10:00 AM	1011	
717825537	04:30 PM	06:30 PM	1077	
947281902	07:15 PM	09:15 PM	1099	

10 rows returned in 0.02 seconds [Download](#)

## 7) Inserting 10 records in Ticket table:

```
INSERT INTO Ticket VALUES ('T12345678', TO_DATE('2023-11-14', 'YYYY-MM-DD'),
'50.00', 1);
```

```
INSERT INTO Ticket VALUES ('T23456789', TO_DATE('2023-11-14', 'YYYY-MM-DD'),
'45.00', 2);
```

```
INSERT INTO Ticket VALUES ('T34567890', TO_DATE('2023-11-14', 'YYYY-MM-DD'),
'40.00', 3);
```

```
INSERT INTO Ticket VALUES ('T45678901', TO_DATE('2023-11-14', 'YYYY-MM-DD'),
'55.00', 4);
```

```
INSERT INTO Ticket VALUES ('T56789012', TO_DATE('2023-11-14', 'YYYY-MM-DD'),
'48.00', 5);
```

```
INSERT INTO Ticket VALUES ('T67890123', TO_DATE('2023-11-14', 'YYYY-MM-DD'),
'52.00', 6);
```

```
INSERT INTO Ticket VALUES ('T78901234', TO_DATE('2023-11-14', 'YYYY-MM-DD'),
'45.00', 23);
```

```
INSERT INTO Ticket VALUES ('T89012345', TO_DATE('2023-11-14', 'YYYY-MM-DD'),
'50.00', 15);
```

```
INSERT INTO Ticket VALUES ('T90123456', TO_DATE('2023-11-14', 'YYYY-MM-DD'),
'42.00', 19);
```

```
INSERT INTO Ticket VALUES ('T01234567', TO_DATE('2023-11-14', 'YYYY-MM-DD'),
'47.00', 16);
```

```
1 select *
2 from ticket
```

Results	Explain	Describe	Saved SQL	History
TC_ID	BOOKING_DATE	TICKET_PRICE	SEAT_NUMBER	
T78901234	11/14/2023	45.00	23	
T89012345	11/14/2023	50.00	15	
T90123456	11/14/2023	42.00	19	
T12345678	11/14/2023	50.00	1	
T23456789	11/14/2023	45.00	2	
T34567890	11/14/2023	40.00	3	
T56789012	11/14/2023	48.00	5	
T01234567	11/14/2023	47.00	16	
T45678901	11/14/2023	55.00	4	
T67890123	11/14/2023	52.00	6	

10 rows returned in 0.01 seconds [Download](#)

## 8) Inserting 10 records in Payment table:

```
INSERT INTO Payment VALUES ('P123456789', '50.00', TO_DATE('2023-11-14',
'YYYY-MM-DD'), 'Credit Card', 'T12345678');
```

```
INSERT INTO Payment VALUES ('P234567890', '45.00', TO_DATE('2023-11-14',
'YYYY-MM-DD'), 'PayPal', 'T23456789');
```

```
INSERT INTO Payment VALUES ('P345678901', '40.00', TO_DATE('2023-11-14',
'YYYY-MM-DD'), 'Cash', 'T34567890');
```

```
INSERT INTO Payment VALUES ('P456789012', '55.00', TO_DATE('2023-11-14',
'YYYY-MM-DD'), 'Credit Card', 'T45678901');
```

```
INSERT INTO Payment VALUES ('P567890123', '48.00', TO_DATE('2023-11-14',
'YYYY-MM-DD'), 'Cash', 'T56789012');
```

```
INSERT INTO Payment VALUES ('P678901234', '52.00', TO_DATE('2023-11-14',
'YYYY-MM-DD'), 'PayPal', 'T67890123');
```

```
INSERT INTO Payment VALUES ('P789012345', '45.00', TO_DATE('2023-11-14',
'YYYY-MM-DD'), 'Credit Card', 'T78901234');
```

```
INSERT INTO Payment VALUES ('P890123456', '50.00', TO_DATE('2023-11-14',
'YYYY-MM-DD'), 'Cash', 'T89012345');
```

```
INSERT INTO Payment VALUES ('P901234567', '42.00', TO_DATE('2023-11-14',
'YYYY-MM-DD'), 'PayPal', 'T90123456');
```

```
INSERT INTO Payment VALUES ('P012345678', '47.00', TO_DATE('2023-11-14',
'YYYY-MM-DD'), 'Credit Card', 'T01234567');
```

1	select *
2	from payment

Results	Explain	Describe	Saved SQL	History
---------	---------	----------	-----------	---------

PAY_ID	PAYMENT_AMOUNT	PAYMENT_DATE	PAYMENT_METHOD	TICKET_ID
P234567890	45.00	11/14/2023	PayPal	T23456789
P567890123	48.00	11/14/2023	Cash	T56789012
P890123456	50.00	11/14/2023	Cash	T89012345
P345678901	40.00	11/14/2023	Cash	T34567890
P789012345	45.00	11/14/2023	Credit Card	T78901234
P123456789	50.00	11/14/2023	Credit Card	T12345678
P678901234	52.00	11/14/2023	PayPal	T67890123
P901234567	42.00	11/14/2023	PayPal	T90123456
P456789012	55.00	11/14/2023	Credit Card	T45678901
P012345678	47.00	11/14/2023	Credit Card	T01234567

10 rows returned in 0.00 seconds [Download](#)

## 9) Inserting 10 records in Buy table:

```
INSERT INTO Buy VALUES ('T12345678', '174123456', 183719026, 1,
TO_DATE('2023-11-14', 'YYYY-MM-DD'));
```

```
INSERT INTO Buy VALUES ('T23456789', '356789012', 263991702, 2,
TO_DATE('2023-11-14', 'YYYY-MM-DD'));
```

```
INSERT INTO Buy VALUES ('T34567890', '726199362', 373819462, 3,
TO_DATE('2023-11-14', 'YYYY-MM-DD'));
```

```
INSERT INTO Buy VALUES ('T45678901', '388103820', 471822637, 4,
TO_DATE('2023-11-14', 'YYYY-MM-DD'));
```

```
INSERT INTO Buy VALUES ('T56789012', '851936289', 518263911, 5,
TO_DATE('2023-11-14', 'YYYY-MM-DD'));
```

```
INSERT INTO Buy VALUES ('T67890123', '846200183', 661528902, 6,
TO_DATE('2023-11-14', 'YYYY-MM-DD'));
```

```
INSERT INTO Buy VALUES ('T78901234', '112936271', 717825537, 7,
TO_DATE('2023-11-14', 'YYYY-MM-DD'));
```

```
INSERT INTO Buy VALUES ('T89012345', '337190003', 881625900, 8,
TO_DATE('2023-11-14', 'YYYY-MM-DD'));
```

```
INSERT INTO Buy VALUES ('T90123456', '936192254', 947281902, 9,
TO_DATE('2023-11-14', 'YYYY-MM-DD'));
```

```
INSERT INTO Buy VALUES ('T01234567', '628816390', 101826352, 10,
TO_DATE('2023-11-14', 'YYYY-MM-DD'));
```

```
1 select *
2 from buy
```

TICKETID	PASSENGERID	SCHEDULEID	SEAT_NUMBER	BOOKING_DATE
T78901234	112936271	717825537	7	11/14/2023
T23456789	356789012	263991702	2	11/14/2023
T90123456	936192254	947281902	9	11/14/2023
T01234567	628816390	101826352	10	11/14/2023
T12345678	174123456	183719026	1	11/14/2023
T56789012	851936289	518263911	5	11/14/2023
T89012345	337190003	881625900	8	11/14/2023
T45678901	388103820	471822637	4	11/14/2023
T67890123	846200183	661528902	6	11/14/2023
T34567890	726199362	373819462	3	11/14/2023

10 rows returned in 0.01 seconds [Download](#)

## 18. Relevant clauses from the IEEE and ACM Professional Code of Ethics

### 18.1. IEEE Code of Ethics

- To uphold the greatest standards of morality, responsibility, and ethics in all aspects of one's professional life.
- To make an effort to see that Students, DSA members, and supervisors uphold this code.
- To prioritize the public's safety and welfare.
- To work toward adherence to ethical design and sustainable development standards.
- To safeguard others' privacy.
- To quickly disclose elements that could put the public or the environment in danger.
- To refrain from discrimination based on factors such as race, religion, gender, age, and country of origin.
- To treat all people equally and with respect.
- To refrain from any form of harassment

## 18.2. ACM Code of Ethics

### 18.2.1. General Ethical Principles

- 1.1 Contribute to society and to human well-being, acknowledging that all people are stakeholders in computing.
- 1.2 Avoid harm.
- 1.3 Be honest and trustworthy.
- 1.4 Be fair and take action not to discriminate.
- 1.5 Respect privacy.
- 1.6 Honor confidentiality

### 18.2.2. Professional Responsibilities

- 2.1 Maintain high standards of professional competence, conduct, and ethical practice.
- 2.2 Know and respect existing rules pertaining to professional work.
- 2.3 Access computing and communication resources only when authorized or when compelled by the public good.
- 2.4 Design and implement systems that are robust and usably secure.

### 18.2.3. Professional Leadership Principles

- 3.1 Articulate, encourage acceptance of and evaluate fulfillment of social responsibilities by members of the organization or group.
- 3.2 Manage personnel and resources to enhance the quality of working life.
- 3.3 Articulate, apply, and support policies and processes that reflect the principles of the Code.
- 3.4 Create opportunities for members of the organization or group to grow as professionals.
- 3.5 Use care when modifying or retiring systems.

### 18.2.4. Compliance with the Code

- 4.1 Uphold, promote, and respect the principles of the Code.
- 4.2 Treat violations of the Code as inconsistent with membership in the ACM



## 19. Teamwork Distribution and Strategy

### 19.1. Strategy

One of the most important strategies for demonstrating collaboration is to ascertain the specific duties and obligations of each team member. As a result, team members will feel more accountable to one another and will be fully aware of their individual roles and areas of competence. Each participant was required to oversee her own assignment

Every team member actively communicated with the others, sharing knowledge, suggestions, and criticism. This was accomplished through frequent meetings and instant chat; each member provided real-time updates and tracked their own progress.

### 19.2. Individual Contribution

Name	Contribution
Sarah AlJurbua	Inserting data into tables
Noura AlAngari	Tables along with all the required integrity and column constraints
Nouf Alabduljabbar	Relevant clauses from the IEEE and ACM professional Code of Ethics
Nour Fatoom	Tables along with all the required integrity and column constraints