Railway Reservation System Project

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Project Statement:

In a world where convenience is paramount, passengers often seek a hassle-free means to book tickets and gather essential information about train schedules. Our project aims to provide a seamless solution, empowering passengers to effortlessly book tickets and access comprehensive details about trains —all within a single click.

Importance of the DataBase:

This database serves as a fundamental tool for passengers, streamlining the ticket booking process and providing essential details. Passengers can easily access information about ticket prices and utilize various payment methods such as Visa or Fawry the database empowers passengers to make informed choices by offering insights into train details, including train numbers, available classes (e.g., air conditioner or normal), and arrival times at specific stations.

Beyond passenger convenience, the database help You to know manager that manage specific station and address and the station name that will the train start from it and stop from it .

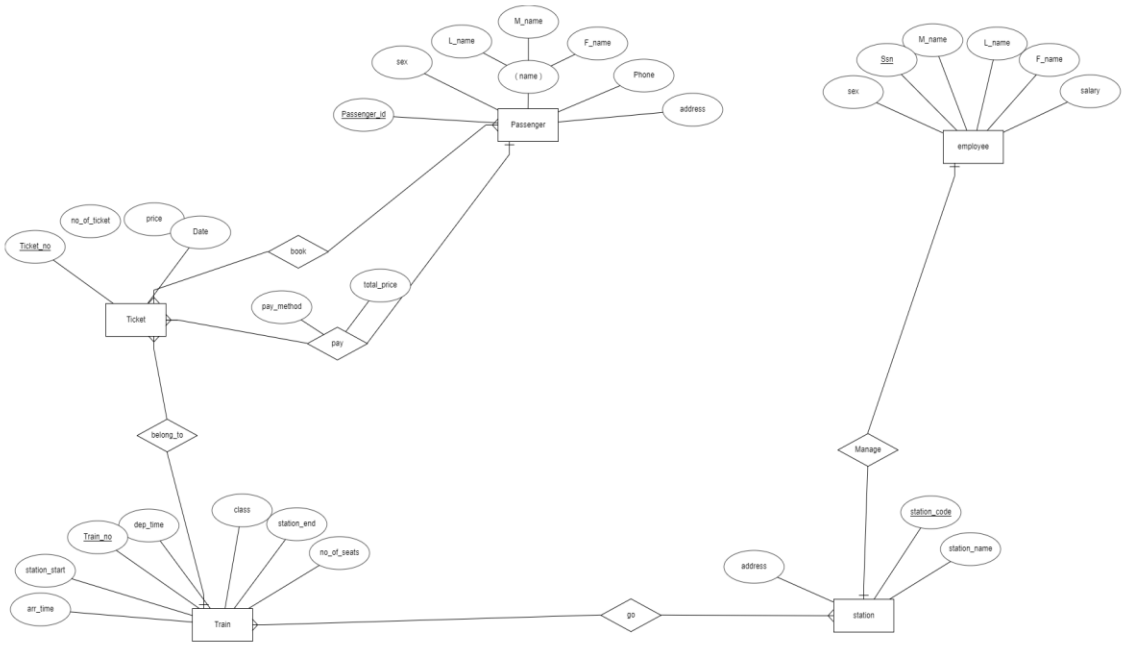
➢ Requirements

Design a database to keep track of information for a "Railway Reservation System"

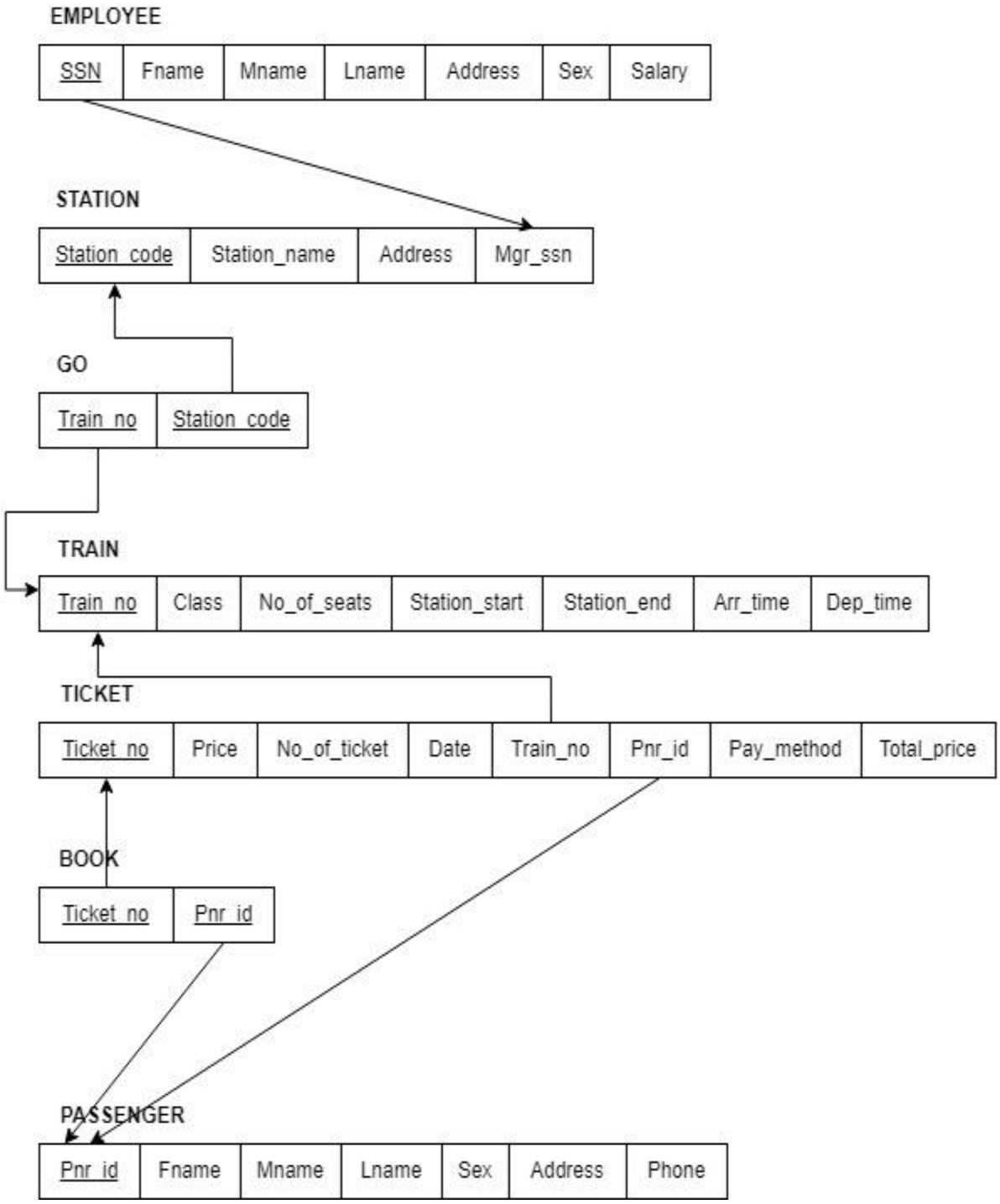
that the following requirement were collected :

i. Each ***passenger*** has a unique passenger_id , name(F_name,M_name and L_name) ,phone,address and sex,passenger who book the ticket .
ii. Each ***ticket*** has a unique ticket_on,price , date and number of ticket have reserved.
iii. The ***train*** has a unique train_on , station_end , dep_time ,class , arr_time no_of_seats and station_start.
iv. The train go from many stations.
v. The ***station*** has a unique station_code, station_name and address .
vi. The passenger relat ticket by **PAY** has a pay_method and total_price .
vii. Each ***employee*** has a unique ssn ,name(F_name ,M_name ,L_name) , sex , address and phone.
viii. ticket belongs to by one train.
ix. The employee can manage one station

ER diagram


M_name
L_name
F_name
sex
(name)
Phone
Passenger_id
address
Passenger
Ssn
salary
employee
no_of_ticket
price
Date
Ticket_no
book
total_price
pay_method
Ticket
pay
belong_to
Manage
class
station_end
dep_time
Train_no
no_of_seats
station_start
arr_time
Train
go
station_code
station_name
station

➢ Relational Model



➢ SQL of Creation

```
- -- MySQL Workbench Forward Engineering


SET @OLD_UNIQUE_CHECKS=@@UNIQUE_CHECKS, UNIQUE_CHECKS=0;

SET @OLD_FOREIGN_KEY_CHECKS=@@FOREIGN_KEY_CHECKS, FOREIGN_KEY_CHECKS=0;

SET @OLD_SQL_MODE=@@SQL_MODE,
SQL_MODE='ONLY_FULL_GROUP_BY,STRICT_TRANS_TABLES,NO_ZERO_IN_DATE,NO_ZERO_DATE,ERROR_FOR_DIVI
SION_BY_ZERO,NO_ENGINE_SUBSTITUTION';


-- -----------------------------------------------------

-- Schema AIOA

-- -----------------------------------------------------

DROP SCHEMA IF EXISTS `AIOA` ;


-- -----------------------------------------------------

-- Schema AIOA

-- -----------------------------------------------------

CREATE SCHEMA IF NOT EXISTS `AIOA` DEFAULT CHARACTER SET utf8 ;

USE `AIOA` ;


-- -----------------------------------------------------

-- Table `AIOA`.`passenger`

-- -----------------------------------------------------

DROP TABLE IF EXISTS `AIOA`.`passenger` ;


CREATE TABLE IF NOT EXISTS `AIOA`.`passenger` (

  `F_name` VARCHAR(45) NOT NULL,

  `M_name` VARCHAR(45) NOT NULL,
```

```
  `L_name` VARCHAR(45) NOT NULL,
  `sex` CHAR(6) NULL,
  `address` VARCHAR(45) NULL,
  `phone` INT(11) NULL,
  `passenger_id` INT(11) NOT NULL,
  PRIMARY KEY (`passenger_id`))
ENGINE = InnoDB;


-- -----------------------------------------------------
-- Table `AIOA`.`train`
-- -----------------------------------------------------
DROP TABLE IF EXISTS `AIOA`.`train` ;

CREATE TABLE IF NOT EXISTS `AIOA`.`train` (
  `station_end` VARCHAR(45) NOT NULL,
  `class` VARCHAR(45) NULL,
  `dep_time` TIME NOT NULL,
  `arr_time` TIME NOT NULL,
  `station_start` VARCHAR(45) NOT NULL,
  `seat_no_avaiable` INT(4) NULL,
  `train_no` INT(4) NOT NULL,
  PRIMARY KEY (`train_no`))
ENGINE = InnoDB;


-- -----------------------------------------------------
-- Table `AIOA`.`ticket`
-- -----------------------------------------------------
DROP TABLE IF EXISTS `AIOA`.`ticket` ;
```

```
CREATE TABLE IF NOT EXISTS `AIOA`.`ticket` (
  `ticket_no` INT(4) NOT NULL,
  `price` FLOAT(6) NULL,
  `no_of_ticket` INT(4) NULL,
  `date` DATE NULL,
  `passenger_passenger_id` INT(11) NOT NULL,
  `total_price` FLOAT(9) NULL,
  `pay_method` VARCHAR(45) NULL,
  `train_train_no` INT(4) NOT NULL,
  PRIMARY KEY (`ticket_no`),
  CONSTRAINT `fk_ticket_passenger1`
    FOREIGN KEY (`passenger_passenger_id`)
    REFERENCES `AIOA`.`passenger` (`passenger_id`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `fk_ticket_train1`
    FOREIGN KEY (`train_train_no`)
    REFERENCES `AIOA`.`train` (`train_no`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB;


-- -----------------------------------------------------
-- Table `AIOA`.`employee`
-- -----------------------------------------------------
DROP TABLE IF EXISTS `AIOA`.`employee` ;

CREATE TABLE IF NOT EXISTS `AIOA`.`employee` (
  `ssn` INT(11) NOT NULL,
  `salary` FLOAT(7) NULL,
```

```
  `F_name` VARCHAR(45) NOT NULL,
  `M_name` VARCHAR(45) NOT NULL,
  `L_name` VARCHAR(45) NOT NULL,
  `phone` INT(11) NULL,
  `sex` CHAR(6) NULL,
  `address` VARCHAR(45) NULL,
  PRIMARY KEY (`ssn`))
ENGINE = InnoDB;


-- -----------------------------------------------------
-- Table `AIOA`.`station`
-- -----------------------------------------------------
DROP TABLE IF EXISTS `AIOA`.`station` ;

CREATE TABLE IF NOT EXISTS `AIOA`.`station` (
  `address` VARCHAR(45) NULL,
  `station_code` INT(9) NOT NULL,
  `station_name` VARCHAR(45) NULL,
  `mg_ssn` INT(11) NOT NULL,
  PRIMARY KEY (`station_code`),
  CONSTRAINT `fk_station_employee1`
    FOREIGN KEY (`mg_ssn`)
    REFERENCES `AIOA`.`employee` (`ssn`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB;


-- -----------------------------------------------------
-- Table `AIOA`.`book`
```

```
-- -----------------------------------------------------
DROP TABLE IF EXISTS `AIOA`.`book` ;

CREATE TABLE IF NOT EXISTS `AIOA`.`book` (
  `passenger_passenger_id` INT(11) NOT NULL,
  `ticket_ticket_no` INT(4) NOT NULL,
  PRIMARY KEY (`ticket_ticket_no`, `passenger_passenger_id`),
  CONSTRAINT `fk_passenger_has_ticket_passenger`
    FOREIGN KEY (`passenger_passenger_id`)
    REFERENCES `AIOA`.`passenger` (`passenger_id`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `fk_passenger_has_ticket_ticket1`
    FOREIGN KEY (`ticket_ticket_no`)
    REFERENCES `AIOA`.`ticket` (`ticket_no`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB;


-- -----------------------------------------------------
-- Table `AIOA`.`go`
-- -----------------------------------------------------
DROP TABLE IF EXISTS `AIOA`.`go` ;

CREATE TABLE IF NOT EXISTS `AIOA`.`go` (
  `station_station_code` INT(9) NOT NULL,
  `train_train_no` INT(4) NOT NULL,
  PRIMARY KEY (`train_train_no`),
  CONSTRAINT `fk_station_has_train_station1`
    FOREIGN KEY (`station_station_code`)
```

```
    REFERENCES `AIOA`.`station` (`station_code`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT `fk_station_has_train_train1`
    FOREIGN KEY (`train_train_no`)
    REFERENCES `AIOA`.`train` (`train_no`)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB;
```

➢ Inserted Data

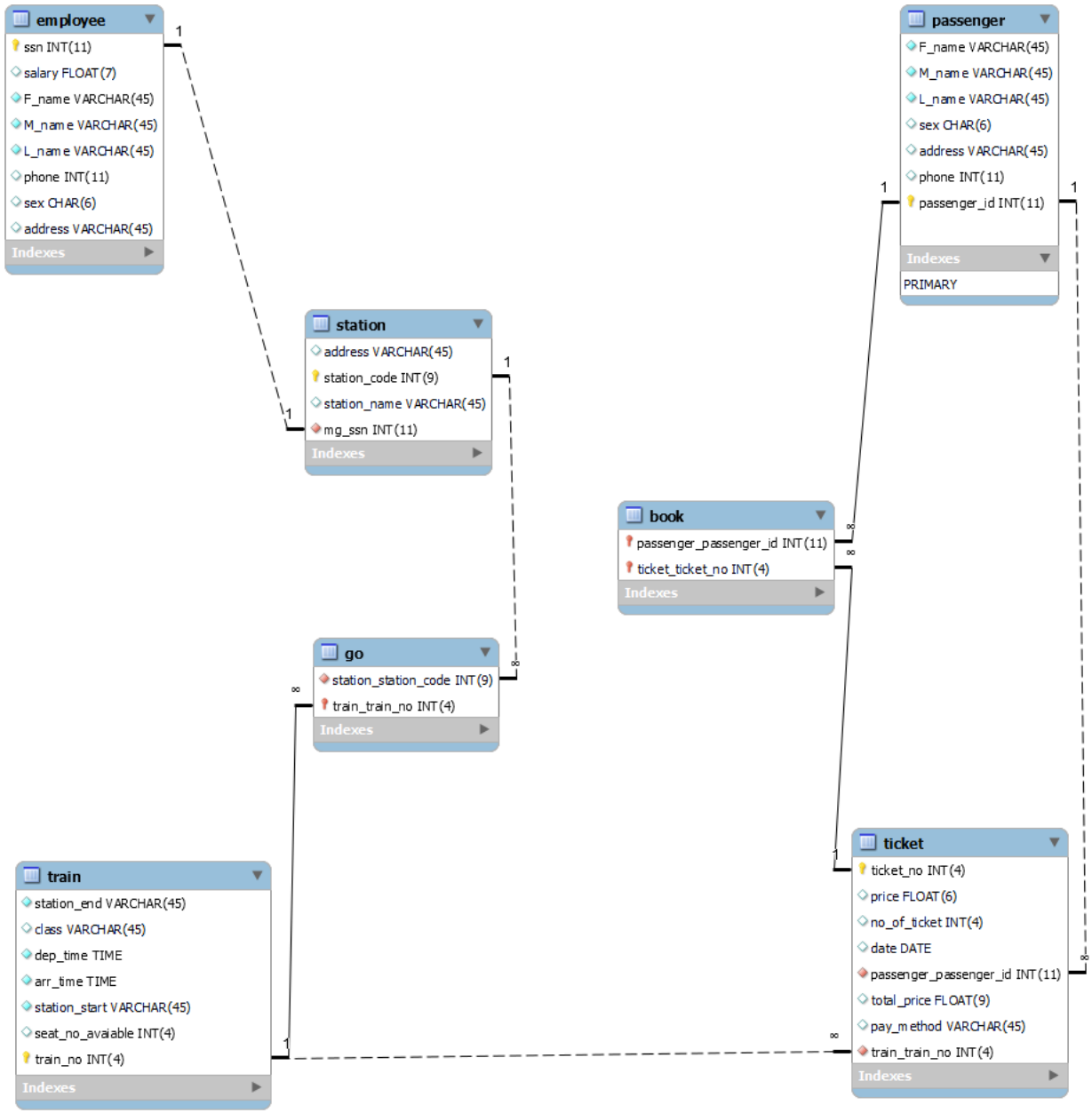
```
-- -----------------------------------------------------

-- Data for table `AIOA`.`passenger`

-- -----------------------------------------------------

START TRANSACTION;

USE `AIOA`;

INSERT INTO `AIOA`.`passenger` (`F_name`, `M_name`, `L_name`, `sex`, `address`, `phone`, `passenger_id`) VALUES ('ali', 'mohamed', 'Adel', 'male', '12street,ramsis', NULL, 1);

INSERT INTO `AIOA`.`passenger` (`F_name`, `M_name`, `L_name`, `sex`, `address`, `phone`, `passenger_id`) VALUES ('ahmed', 'Ashraf', 'moahmed', 'male', '12street, El marg,cairo', 01288428242, 20);

INSERT INTO `AIOA`.`passenger` (`F_name`, `M_name`, `L_name`, `sex`, `address`, `phone`, `passenger_id`) VALUES ('Ibrahim', 'Ahmed', 'Mohamed', 'male', '13street,Kom Ombo,Aswan', 01558842824, 3);

INSERT INTO `AIOA`.`passenger` (`F_name`, `M_name`, `L_name`, `sex`, `address`, `phone`, `passenger_id`) VALUES ('Lames', 'Mohamed', 'ahmed', 'female', '16street,New Asyut,Assuit', 0108842862, 9);

INSERT INTO `AIOA`.`passenger` (`F_name`, `M_name`, `L_name`, `sex`, `address`, `phone`, `passenger_id`) VALUES ('sarah', 'omar', 'Abdullah', 'female', '15 El Raml,Alexendra', 01188428254, 15);

INSERT INTO `AIOA`.`passenger` (`F_name`, `M_name`, `L_name`, `sex`, `address`, `phone`, `passenger_id`) VALUES ('omar', 'mohamed', 'osama', 'male', 'Zagazig,Sharqia', 0120014699, 2);


COMMIT;



-- -----------------------------------------------------

-- Data for table `AIOA`.`train`

-- -----------------------------------------------------

START TRANSACTION;

USE `AIOA`;

INSERT INTO `AIOA`.`train` (`station_end`, `class`, `dep_time`, `arr_time`, `station_start`, `seat_no_avaiable`, `train_no`) VALUES ('Assiutsation', 'air conditioner', '15:20:00', '16:20:00', 'Masrstation', 150, 871);

INSERT INTO `AIOA`.`train` (`station_end`, `class`, `dep_time`, `arr_time`, `station_start`, `seat_no_avaiable`, `train_no`) VALUES ('Assiutsation', 'normal', '14:30:00', '15:20:00', 'Masrstation', 300, 2007);

INSERT INTO `AIOA`.`train` (`station_end`, `class`, `dep_time`, `arr_time`, `station_start`, `seat_no_avaiable`, `train_no`) VALUES ('Sidi GaberSation', 'normal', '20:10:00', '16:35:00', 'Zagazig', 150, 570);

INSERT INTO `AIOA`.`train` (`station_end`, `class`, `dep_time`, `arr_time`, `station_start`, `seat_no_avaiable`, `train_no`) VALUES ('AswanStation', 'air conditioner', '19:14:00', '22:10:00', 'Sidi GaberSation', 150, 2008);

INSERT INTO `AIOA`.`train` (`station_end`, `class`, `dep_time`, `arr_time`, `station_start`, `seat_no_avaiable`, `train_no`) VALUES ('AswanStation', 'normal', '17:14:00', '22:10:00', 'Sidi GaberSation', 300, 88);

INSERT INTO `AIOA`.`train` (`station_end`, `class`, `dep_time`, `arr_time`, `station_start`, `seat_no_avaiable`, `train_no`) VALUES ('Masrstation', 'conditioner', '17:42:00', '15:55:00', 'Zagazig', 150, 572);
```

```
INSERT INTO `AIOA`.`train` (`station_end`, `class`, `dep_time`, `arr_time`, `station_start`, `seat_no_avaiable`, `train_no`) VALUES ('Masrstation', 'normal', '15:20:00', '14:30:00', 'Assuit', 300, 2006);

INSERT INTO `AIOA`.`train` (`station_end`, `class`, `dep_time`, `arr_time`, `station_start`, `seat_no_avaiable`, `train_no`) VALUES ('Masrstation', 'air conditioner', '15:20:00', '14:30:00', 'Assuit', 150, 77);

INSERT INTO `AIOA`.`train` (`station_end`, `class`, `dep_time`, `arr_time`, `station_start`, `seat_no_avaiable`, `train_no`) VALUES ('Zagazig', 'normal', '22:10:00', '19:14:00', 'Aswan', 300, 99);

INSERT INTO `AIOA`.`train` (`station_end`, `class`, `dep_time`, `arr_time`, `station_start`, `seat_no_avaiable`, `train_no`) VALUES ('Assiutsation', 'air conditioner', '16:20:00', '15:20:00', 'Aswan', 150, 1056);


COMMIT;



-- -----------------------------------------------------

-- Data for table `AIOA`.`ticket`

-- -----------------------------------------------------

START TRANSACTION;

USE `AIOA`;

INSERT INTO `AIOA`.`ticket` (`ticket_no`, `price`, `no_of_ticket`, `date`, `passenger_passenger_id`, `total_price`, `pay_method`, `train_train_no`)
VALUES (256, 150, 2, '2023-04-6', 1, 300, 'visa', 871);

INSERT INTO `AIOA`.`ticket` (`ticket_no`, `price`, `no_of_ticket`, `date`, `passenger_passenger_id`, `total_price`, `pay_method`, `train_train_no`)
VALUES (102, 350, 1, '2023-4-16', 20, 350, 'fawry', 2007);

INSERT INTO `AIOA`.`ticket` (`ticket_no`, `price`, `no_of_ticket`, `date`, `passenger_passenger_id`, `total_price`, `pay_method`, `train_train_no`)
VALUES (202, 150, 3, '2023-5-16', 1, 450, 'fawry', 871);

INSERT INTO `AIOA`.`ticket` (`ticket_no`, `price`, `no_of_ticket`, `date`, `passenger_passenger_id`, `total_price`, `pay_method`, `train_train_no`)
VALUES (306, 75, 1, '2023-7-5', 2, 75, 'visa', 570);

INSERT INTO `AIOA`.`ticket` (`ticket_no`, `price`, `no_of_ticket`, `date`, `passenger_passenger_id`, `total_price`, `pay_method`, `train_train_no`)
VALUES (122, 250, 1, '2023-3-20', 3, 250, 'visa', 99);

INSERT INTO `AIOA`.`ticket` (`ticket_no`, `price`, `no_of_ticket`, `date`, `passenger_passenger_id`, `total_price`, `pay_method`, `train_train_no`)
VALUES (222, 130, 4, '2023-2-27', 9, 520, 'fawry', 2006);

INSERT INTO `AIOA`.`ticket` (`ticket_no`, `price`, `no_of_ticket`, `date`, `passenger_passenger_id`, `total_price`, `pay_method`, `train_train_no`)
VALUES (1002, 350, 2, '2023-9-6', 15, 700, 'visa', 88);

INSERT INTO `AIOA`.`ticket` (`ticket_no`, `price`, `no_of_ticket`, `date`, `passenger_passenger_id`, `total_price`, `pay_method`, `train_train_no`)
VALUES (201, 75, 6, '2023-9-4', 2, 450, 'fawry', 572);


COMMIT;



-- -----------------------------------------------------

-- Data for table `AIOA`.`employee`

-- -----------------------------------------------------
```

```
START TRANSACTION;

USE `AIOA`;

INSERT INTO `AIOA`.`employee` (`ssn`, `salary`, `F_name`, `M_name`, `L_name`, `phone`, `sex`, `address`) VALUES (256786, 10000, 'Hussein ', 'Shehata', 'Mohamed', 015577841, 'male', 'Al tharar,Cairo');

INSERT INTO `AIOA`.`employee` (`ssn`, `salary`, `F_name`, `M_name`, `L_name`, `phone`, `sex`, `address`) VALUES (769102, 20000, 'Ahmed', 'Muhanna', 'Ali', 012864214, 'male', 'Abou Quer,Alexandria');

INSERT INTO `AIOA`.`employee` (`ssn`, `salary`, `F_name`, `M_name`, `L_name`, `phone`, `sex`, `address`) VALUES (156201, 5000, 'ibrahim', 'Ali', 'moustafa', 011678815, 'male', 'Banha, Qalyubiyya');

INSERT INTO `AIOA`.`employee` (`ssn`, `salary`, `F_name`, `M_name`, `L_name`, `phone`, `sex`, `address`) VALUES (967207, 6000, 'omar', 'adel', 'zaid', 010554891, 'male', 'Nile Cornich,Asman');

INSERT INTO `AIOA`.`employee` (`ssn`, `salary`, `F_name`, `M_name`, `L_name`, `phone`, `sex`, `address`) VALUES (658741, 15000, 'Abdulrahman', 'nour', 'gamail', 012889476, 'male', 'El-Helaly,Assuit');


COMMIT;




-- -----------------------------------------------------

-- Data for table `AIOA`.`station`

-- -----------------------------------------------------

START TRANSACTION;

USE `AIOA`;

INSERT INTO `AIOA`.`station` (`address`, `station_code`, `station_name`, `mg_ssn`) VALUES (' Ramsis Square,Cairo', 4321102, 'Masr', 256786);

INSERT INTO `AIOA`.`station` (`address`, `station_code`, `station_name`, `mg_ssn`) VALUES ('Abou Quer,Alexandria', 5433011, 'Sidi Gaber', 769102);

INSERT INTO `AIOA`.`station` (`address`, `station_code`, `station_name`, `mg_ssn`) VALUES ('Orabi Square,Al-Sharqia ', 7123738, 'Zagazig', 156201);

INSERT INTO `AIOA`.`station` (`address`, `station_code`, `station_name`, `mg_ssn`) VALUES ('Nile Cornich,Aswan', 81511, 'Aswan', 967207);

INSERT INTO `AIOA`.`station` (`address`, `station_code`, `station_name`, `mg_ssn`) VALUES ('El-Helaly, Al Hamraa Ath Thaneyah, Assiut', 2073066, 'Assiut', 658741);

COMMIT;

-- -----------------------------------------------------

-- Data for table `AIOA`.`book`

-- -----------------------------------------------------

START TRANSACTION;

USE `AIOA`;

INSERT INTO `AIOA`.`book` (`passenger_passenger_id`, `ticket_ticket_no`) VALUES (1, 256);

INSERT INTO `AIOA`.`book` (`passenger_passenger_id`, `ticket_ticket_no`) VALUES (20, 102);

INSERT INTO `AIOA`.`book` (`passenger_passenger_id`, `ticket_ticket_no`) VALUES (1, 202);
```

```
INSERT INTO `AIOA`.`book` (`passenger_passenger_id`, `ticket_ticket_no`) VALUES (2, 306);
INSERT INTO `AIOA`.`book` (`passenger_passenger_id`, `ticket_ticket_no`) VALUES (3, 122);
INSERT INTO `AIOA`.`book` (`passenger_passenger_id`, `ticket_ticket_no`) VALUES (9, 222);
INSERT INTO `AIOA`.`book` (`passenger_passenger_id`, `ticket_ticket_no`) VALUES (15, 1002);
INSERT INTO `AIOA`.`book` (`passenger_passenger_id`, `ticket_ticket_no`) VALUES (2, 201);
COMMIT;

-- -----------------------------------------------------
-- Data for table `AIOA`.`go`
-- -----------------------------------------------------
START TRANSACTION;
USE `AIOA`;
INSERT INTO `AIOA`.`go` (`station_station_code`, `train_train_no`) VALUES (4321102, 871);
INSERT INTO `AIOA`.`go` (`station_station_code`, `train_train_no`) VALUES (4321102, 2007);
INSERT INTO `AIOA`.`go` (`station_station_code`, `train_train_no`) VALUES (7123738, 570);
INSERT INTO `AIOA`.`go` (`station_station_code`, `train_train_no`) VALUES (7123738, 572);
INSERT INTO `AIOA`.`go` (`station_station_code`, `train_train_no`) VALUES (5433011, 2008);
INSERT INTO `AIOA`.`go` (`station_station_code`, `train_train_no`) VALUES (5433011, 88);
INSERT INTO `AIOA`.`go` (`station_station_code`, `train_train_no`) VALUES (81511, 99);
INSERT INTO `AIOA`.`go` (`station_station_code`, `train_train_no`) VALUES (81511, 1056);
INSERT INTO `AIOA`.`go` (`station_station_code`, `train_train_no`) VALUES (2073066, 2006);
INSERT INTO `AIOA`.`go` (`station_station_code`, `train_train_no`) VALUES (2073066, 77);

COMMIT;
SET SQL_MODE=@OLD_SQL_MODE;
SET FOREIGN_KEY_CHECKS=@OLD_FOREIGN_KEY_CHECKS;
SET UNIQUE_CHECKS=@OLD_UNIQUE_CHECKS;
```

➢ Workbench ER Diagram



Queries and their results

1-

```
/*-------------Display all Information about Passenger Table-------------*/
SELECT * FROM PASSENGER;
```

F_name	M_name	L_name	sex	address	phone	passenger_id
ali	mohamed	Adel	male	12street,ramsis	NULL	1
omar	mohamed	osama	male	Zagazig,Sharqia	120014699	2
Ibrahim	Ahmed	Mohamed	male	13street,Kom Ombo,Aswan	1558842824	3
Lames	Mohamed	ahmed	female	16street,New Asyut,Assuit	108842862	9
sarah	omar	Abdullah	female	15 El Raml,Alexendra	1188428254	15
ahmed	Ashraf	moahmed	male	12street, El marg,cairo	1288428242	20
NULL	NULL	NULL	NULL	NULL	NULL	NULL

2-

```
/*-----------Display Full name about Passenger sex is male-------------*/
SELECT CONCAT(F_name, ' ', M_name, ' ', L_name) AS Passenger_name, passenger_id
FROM PASSENGER
WHERE sex = 'male';
```

Passenger_name	passenger_id
ali mohamed Adel	1
omar mohamed osama	2
Ibrahim Ahmed Mohamed	3
ahmed Ashraf moahmed	20

3-

```
12
13    /*------------Display full name Passenger That address in new  Assuit----------*/
14 •  SELECT CONCAT(F_name, ' ', M_name, ' ', L_name) AS Passenger_name, passenger_id, address
15    FROM PASSENGER
16    WHERE address LIKE '%New Asyut%';
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Passenger_name	passenger_id	address
Lames Mohamed ahmed	9	16street,New Asyut,Assuit

4-

```
/*-----------Display Passenger Name and distinct phone number Start by 012------------*/
SELECT F_name,  M_name, L_name AS Passenger_name, passenger_id
FROM PASSENGER
WHERE phone LIKE '12%';
```

F_name	M_name	Passenger_name	passenger_id
omar	mohamed	osama	2
ahmed	Ashraf	moahmed	20
NULL	NULL	NULL	NULL

5-

```
25    /*-----------Display Passenger name based on some condition like phone 015 and address-------*/
26 •  SELECT CONCAT(F_name, ' ', M_name, ' ', L_name) AS Passenger_name, passenger_id
27    FROM PASSENGER
28    WHERE phone LIKE '15%' AND address LIKE '%Kom Ombo%';
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Passenger_name	passenger_id
Ibrahim Ahmed Mohamed	3

6-

```
/*----------Display information about Train and ticket ---------*/
SELECT *
FROM train t1
JOIN ticket t2 ON t1.train_no = t2.train_train_no
WHERE t2.pay_method = 'visa' AND t1.class = 'normal';
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

station_end	class	dep_time	arr_time	station_start	seat_no_avaiable	train_no	ticket_no	price	no_of_ticket	date	passenger_passenger_id	total_price	pay_method	train_train_no
Zagazig	normal	22:10:00	19:14:00	Aswan	300	99	122	250	1	2023-03-20	3	250	visa	99
Sidi GaberSation	normal	20:10:00	16:35:00	Zagazig	150	570	306	75	1	2023-07-05	2	75	visa	570
AswanStation	normal	17:14:00	22:10:00	Sidi GaberSation	300	88	1002	350	2	2023-09-06	15	700	visa	88

7-

```
/*--------Display number of ticket reserved --------*/
SELECT COUNT(ticket_no) AS Total_Ticket_reserved
FROM ticket;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Total_Ticket_reserved
8

8-

```
/*--------Display number of train that start from specific station------------*/
SELECT COUNT(*) AS number_of_train
FROM train t
WHERE t.station_start = 'Aswan';
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

number_of_train
2

9-

```
48    /*------Dispaly avarage number of seat in specific train and start from specific station  ---------*/
49    select  AVG(seat_no_avaiable) AVG_avaiable_seat from train t
50    where t.station_start = 'Sidi GaberSation' and t.class = 'air conditioner';
51
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

AVG_avaiable_seat
150.0000

10-

```
52
53    /*-------Display min price from Ticket from specific train-------*/
54    SELECT MAX(price) AS max_price, MIN(price) AS min_price
55    FROM ticket t
56    WHERE t.train_train_no = 871;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

max_price	min_price
150	150

11-

```
59    /*-----Display employee name that manages a specific station-------*/
60    SELECT e.ssn, CONCAT(e.F_name, ' ', e.M_name, ' ', e.L_name) AS employee_name, e.salary
61    FROM employee e
62    JOIN station s ON e.ssn = s.mg_ssn
63    WHERE s.station_name = 'Masr';
64
65
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

ssn	employee_name	salary
256786	Hussein Shehata Mohamed	10000

12-

```sql
/*-------Display price of ticket from max to min price--------*/
SELECT price FROM ticket t
ORDER BY price DESC;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

price
350
350
250
150
150
130
75
75

13-

```sql
/*-----Display number of ticket that revesed for each passenger----*/
select CONCAT(F_name, ' ', M_name, ' ', L_name) AS Passenger_name
          ,(select count(no_of_ticket) from ticket
            where passenger_passenger_id  = passenger.passenger_id ) As num_tickets_reserved
from passenger;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Passenger_name	num_tickets_reserved
ali mohamed Adel	2
omar mohamed osama	2
Ibrahim Ahmed Mohamed	1
Lames Mohamed ahmed	1
sarah omar Abdullah	1
ahmed Ashraf moahmed	1

14-

```
79      /*-----Display information about ticket who passenger have more than 1 ticket------*
80      select * from ticket t
81      where passenger_passenger_id in
82                      (select passenger_passenger_id from ticket
83                       group by  passenger_passenger_id
84                       having count(no_of_ticket) > 1 ) and t.no_of_ticket > 1;
85
86
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

ticket_no	price	no_of_ticket	date	passenger_passenger_id	total_price	pay_method	train_train_no
201	75	6	2023-09-04	2	450	fawry	572
202	150	3	2023-05-16	1	450	fawry	871
256	150	2	2023-04-06	1	300	visa	871
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

15-

```
88      /* -----Display  all information about station and manager who has max salary----*/
89      select * from station s
90                  join employee e
91                  on s.mg_ssn = e.ssn
92      where e.salary = (select max(salary) from employee);
93
94
95
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

address	station_code	station_name	mg_ssn	ssn	salary	F_name	M_name	L_name	phone	sex	address
Abou Quer,Alexandria	5433011	Sidi Gaber	769102	769102	20000	Ahmed	Muhanna	Ali	12864214	male	Abou Quer,Alexandria

16-

```
6     /*-------Display information about ticket that reserved and start specific station-------*/
7 •   select * from ticket
8     where train_train_no in (select train_no from train t where t.station_start = 'Zagazig' );
9
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

ticket_no	price	no_of_ticket	date	passenger_passenger_id	total_price	pay_method	train_train_no
306	75	1	2023-07-05	2	75	visa	570
201	75	6	2023-09-04	2	450	fawry	572
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

17-

```
101   /*------Display all information about Passenger who reserved ticket that departing from spcific station------*/
102 • select CONCAT(F_name, ' ', M_name, ' ', L_name) AS Passenger_name
103   from PASSENGER p
104   join ticket t on p.passenger_id = t.passenger_passenger_id
105   join train tr on t.train_train_no = tr.train_no
106   where tr.station_start = 'Zagazig' limit 1;
107
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

Passenger_name
omar mohamed osama

18-

```
109   /*----Display information about train that leave in specific date----*/
110 • select station_start,station_end,dep_time,arr_time from train tr
111   join ticket t on tr.train_no = t.train_train_no
112   where t.date = '2023-03-20';
113
114
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

station_start	station_end	dep_time	arr_time
Aswan	Zagazig	22:10:00	19:14:00

19-

```
115     /*----Dispaly information about passenger who booked spacifci tain----*/
116 •   select distinct p.passenger_id, p.F_name, p.M_name, p.L_name, p.sex, p.address, p.phone,
117                    t.train_no, t.station_start, t.station_end, t.dep_time, t.arr_time, t.class
118     from passenger p
119     join book b on p.passenger_id = b.passenger_passenger_id
120     join ticket ti on b.ticket_ticket_no = ti.ticket_no
121     join train t on ti.train_train_no = t.train_no
122     where b.ticket_ticket_no = '1002';
123
124
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

passenger_id	F_name	M_name	L_name	sex	address	phone	train_no	station_start	station_end	dep_time	arr_time	class
15	sarah	omar	Abdullah	female	15 El Raml,Alexendra	1188428254	88	Sidi GaberSation	AswanStation	17:14:00	22:10:00	normal

20-

```
119     /*------Display all ticket are reserved by passenger that have more than one Ticket ---- */
120 •   select p.passenger_id,p.F_name ,t.ticket_no,t.price,t.no_of_ticket,t.date,t.total_price,t.pay_method,tr.train_no,tr.station_start,tr.station_end,tr.dep_time,
121     tr.arr_time,tr.class
122     from passenger p
123     join ticket t on p.passenger_id = t.passenger_passenger_id
124     join train tr on t.train_train_no = tr.train_no
125     where p.passenger_id in (
126             select passenger_passenger_id
127             from ticket
128             group by passenger_passenger_id
129             having count(no_of_ticket) > 1
130         )
131     order by
132         p.passenger_id, t.date;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

ticket_no	price	no_of_ticket	date	passenger_passenger_id	total_price	pay_method	train_train_no
201	75	6	2023-09-04	2	450	fawry	572
202	150	3	2023-05-16	1	450	fawry	871
256	150	2	2023-04-06	1	300	visa	871
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL