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**SCHOOL OF ENGINEERING AND TECHNOLOGY**

**COURSEWORK FOR**

BSC (HONS) IN COMPUTER SCIENCE

BSC (HONS) INFORMATION TECHNOLOGY

BACHELOR OF SOFTWARE ENGINEERING (HONS)

BSC (HONS) INFORMATION SYSTEMS (DATA ANALYTICS)

BSC (HONS) INFORMATION TECHNOLOGY (COMPUTER NETWORKING AND SECURITY)

**YEAR 1;** ACADEMIC SESSION APRIL 2023

**SEG1201:** DATABASE FUNDAMENTALS

**Part 1 Due date:** Week 9 Monday, 10am

**Part 2 Due date:** Week 11 Monday, 10am

**Parts 3&4 Due date:** Week 14 Monday, 10am

**Part 5** To be scheduled

**STUDENT NAMES: Liew Jieh Cheng, Lee Xing Le, Tee Yu Chen, Yen Ming Wey**

**STUDENT IDS: 21045471, 21030234, 21030317, 21030457** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**INSTRUCTIONS**

* This final assessment contributes 50% to your final grade.
* This four-member group assignment is primarily for Course Learning Outcome 2 - Implement a database design group project using appropriate tools such as Oracle SQL.

**IMPORTANT**

The University requires students to adhere to submission deadlines for any form of assessment. Penalties are applied in relation to unauthorized late submission of work.

**Academic Honesty Acknowledgement**

“We Liew Jieh Cheng, Lee Xing Le, Tee Yu Chen, Yen Ming Wey verify that this paper contains entirely our own work.  We have not consulted with any outside person or materials other than what was specified (an interviewee, for example) in the assignment or the syllabus requirements.  Further, we have not copied or inadvertently copied ideas, sentences, or paragraphs from another student.  We realize the penalties *(refer to page 16, 5.5, Appendix 2, page 44 of the student handbook diploma and undergraduate programme)* for any kind of copying or collaboration on any assignment.”



**......................., ……................., …………………., ........................,** (Student signatures/Date)



Part 1: Enhance the chosen case scenario (10 marks)

**Please insert the approved enhanced scenario and business rules here**

**APPENDIX 1**

Scenario 1: Picky Pizza Palace

Picky Pizza Palace sells pizzas in the Kuala Lumpur, Shah Alam, and Petaling Jaya regions in Malaysia. This food business offers pizzas through two main methods: delivery and dining-in. To introduce their menu of delicious pizzas to the public, Picky Pizza Palace utilizes pamphlets. Additionally, they have a website showcasing their menu and specialties as part of their business strategies.

The management stores information about their menu, including item number, description, type of food, and price. All food and drink items are identified by their item number. Orders placed by customers are recorded in the database, capturing details such as order number, customer number, order date, order time, telephone operator, rider number (identified by their staff number), and outlet number. Each order is recognized by its unique order number.

For each order, the database maintains a list of all food and drink items ordered by customers. This list, known as Order Lines, includes information such as the order number, item number, and quantity of each item for every order placed by a customer. Each record in the Order Lines is identified by its order number and item number.

Picky Pizza Palace operates eight outlets situated in Damansara Utama, Bangsar Baru, Kelana Jaya, Shah Alam, Setia Alam, Klang, and Subang Jaya. Information about the food outlets, such as outlet number, telephone number, street, suburb, and postcode, is stored in the database. Each outlet is identified by its unique outlet number.

Information about the staff, including their staff number, outlet number, title, first name, last name, phone number, street, suburb, postcode, position, date of entry into the company, and any disciplinary actions taken, is stored in the database. All staff members are identified by their staff number.

As a well-known pizza parlour, Picky Pizza Palace stores all customer information in their database, including customer number, phone number, title, first name, last name, street, suburb, and postcode. Each customer is identified by their customer number. This strategy of storing customer information aims to enhance productivity and professionalism in the business environment, making customers feel valued and emphasizing convenience for them.

Considering the success and rapid growth of their pizza business, Picky Pizza Palace keeps track of their vehicles' condition and usability by storing relevant information in a database for easy management. Details about their vehicles, such as vehicle number, vehicle product, type, date of purchase, last checked date, mileage, and outlet number, are recorded. Each vehicle is identified by its unique vehicle number.

To track all the orders placed to the corresponding payment made to resolve any discrepancies that may arise, Picky Pizza Palace stores all the transaction details of the orders made by customers. Details about the transaction include Transaction number, transaction type, transaction time, transaction amount and discount code. Each transaction is determined by the transaction number. The transaction record helps in reconciling accounts and generating financial reports.

We need to track all the stock present in each outlet to help the process of inventory management. Details about the stock includes stock number, stock category and stock name with the stock number as the unique identifier. A stock list record is also stored in the database which consist of stock number, outlet number, stock quantity, stock expiry date and manufacturing date. Each record in the stock list is identified by its stock number and outlet number. By doing this, the restaurant can identify ingredients that are approaching expiring date to reduce the risk of wastage production.

Training plans for employees are also organized to help them adjust themselves to the workplace. Information about the training plan will be stored in the database, which includes training ID, training level, description, and tutor number (identified by their staff number). The training plan is identified by the training ID. Since each employee has a different experience level in the field, some will act as a tutor to teach other employees.

**Business Rule**

1. Each item in the menu may appear in the order line on many orders.
2. An item in the menu may not appear in the order line in any orders.
3. An order may have many items from the menu that appears in the order line.
4. An order must have at least an item from the menu that appears in the order line.
5. Each customer can make many orders.
6. A customer must have made one order.
7. Each order can only be made by one customer.
8. Each order must have been made by a customer.
9. Each order will be handled by many staff.
10. An order must be handled by a staff.
11. Each staff can handle many orders.
12. A staff may not handle an order.
13. Each order can only be ordered from a food outlet.
14. Each order must be from any one of the food outlets.
15. A food outlet can have many orders.
16. A food outlet must have an order.
17. Each staff can only be working in one outlet.
18. A staff must be working in an outlet.
19. Each outlet can have many staff.
20. An outlet must at least have one staff.
21. Each vehicle can only be associated with one outlet.
22. Each vehicle must be associated with an outlet.
23. Each outlet can have multiple vehicles.
24. Every outlet must at least have one vehicle.
25. Each transaction can pay for multiple orders.
26. A transaction must pay for at least one order.
27. Each order must be made by only one transaction.
28. Each order must be made by a transaction.
29. Each stock may appear in the stock list for many outlets.
30. Every stock must be shown in the stock list for every outlet.
31. An outlet may appear in the stock list for many stocks.
32. Every outlet must be shown in the stock list for every stock.
33. Each training plan can be attended by many staffs.
34. Each training plan must at least have a staff.
35. Each staff can only attend one training plan.
36. Not every staff will attend a training plan.
37. Each training plan can only have one trainer(staff).
38. Each training plan must have one trainer(staff).
39. A staff can only teach a training plan.
40. A staff may not teach a training plan.
41. A staff can be managing many staffs.
42. A staff may not be managing any staff.
43. A staff can be managed by one staff only.
44. A staff may not be managed by any staff.

Part 2: Design a database (30 marks)

A diagram of a process

Description automatically generated

RDM

ITEM (**item\_num**, item\_description, item\_type, item\_price)

*ALTERNATE KEY (item\_description)*

OUTLET (**outlet\_num**, outlet\_tel, outlet\_street, outlet\_surburb, outlet\_postcode)

*ALTERNATE KEY (outlet\_tel)*

CUSTOMER (**cust\_num**, cust\_tel, cust\_title, cust\_fname, cust\_lname, cust\_street, cust\_surburb, cust\_postcode)

*ALTERNATE KEY (cust\_tel)*

TRANSACTIONS (**trans\_num**, trans\_type, trans\_time, trans\_amount, trans\_discount)

*ALTERNATE KEY (trans\_time)*

ORDERS (**order\_num**, cust\_num, outlet\_num, trans\_num, order\_time)

*FOREIGN KEY (cust\_num) references TABLE CUSTOMER (cust\_num),*

*FOREIGN KEY (outlet\_num) references TABLE OUTLET (outlet\_num),*

*FOREIGN KEY (trans\_num) references TABLE TRANSACTIONS (trans\_num)*

*ALTERNATE KEY (cust\_num, order\_time)*

ORDER\_LINE (**order\_num**, **item\_num,** order\_quantity)

*FOREIGN KEY (order\_num) references TABLE ORDERS (order\_num)*

*FOREIGN KEY (item\_num) references TABLE ITEM (item\_num)*

TRAINING PLAN (**train\_id**, tutor\_id, train\_description, train\_level)

*FOREIGN KEY (tutor\_id) references TABLE STAFF (staff\_num)*

*ALTERNATE KEY (tutor\_id)*

STAFF (**staff\_num**, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, staff\_dspln, manger\_id)

*FOREIGN KEY (outlet\_num) references TABLE OUTLET (outlet\_num)*

*FOREIGN KEY (train\_id) references TABLE TRAINING PLAN (train\_id)*

*ALTERNATE KEY (staff\_tel)*

STAFF\_LIST (**order\_num, staff\_num**, job)

*FOREIGN KEY (order\_num) references TABLE ORDERS (order\_num)*

*FOREIGN KEY (staff\_num) references TABLE STAFF (staff\_num)*

VEHICLE (**veh\_num**, outlet\_num, veh\_product, veh\_type, veh\_dop, veh\_lcheck, veh\_mileage)

*FOREIGN KEY (outlet\_num) references TABLE OUTLET (outlet\_num)*

*ALTERNATE KEY (veh\_mileage)*

STOCK (**stock\_num**, stock\_name, stock\_category)

*ALTERNATE KEY (stock\_name)*

STOCK\_LIST (**stock\_num**, **outlet\_num,** stock\_quantity, stock\_manfdate, stock\_expdate)

*FOREIGN KEY (stock\_num) references TABLE STOCK (stock\_num)*

*FOREIGN KEY (outlet\_num) references TABLE OUTLET (outlet\_num)*

*ALTERNATE KEY (stock\_expdate, stock\_manfdate)*

If you have an update to the ERD and RDM after submission Part 2 submission, please use the table to explain the changes done and reasons. The red prints are examples only and they need to be removed.

|  |  |  |  |
| --- | --- | --- | --- |
| No | Changes | Reason for the change/update | Changes in ERD/RDM |
| 1 | Before: Every staff must handle an order  After: Not every stuff will handle an order | Staff position of manager and supervisor might not handle an order | ERD |
| 2 | Before: An outlet may not have an order  After: Every outlet must have an order | There are no new outlets where an order is not taken | ERD |
| 3 | Before: Date and time is attribute is separated into two different columns in transactions table and orders table  After: Date and time attribute are under the same field | The implementation of timestamp data type can record both date and time under the same field | RDM |
| 4 | Before: The staff entity does not contain the manager ID for each staff  After: A manager ID for each staff is added as a field in the staff entity | Reduce the need for a complex join of table during query | RDM & ERD |
| 5 | Before: Entity name order and transaction  After: Entity name orders and transactions | Order and transaction are reserved keywords in Oracle Apex DBMS | RDM & ERD |

Part 3: Implement a database (20 marks)

|  |  |  |  |
| --- | --- | --- | --- |
| Table/attributes | description | Data Type | Justification |
| **ITEM** | Table |  |  |
| item\_num | item number | Number(3) | fixed number digits |
| item\_description | description of item (item name) | Nvchar2(50) | fixed length Unicode character |
| item\_type | type of item (category) | Varchar2(20) | the category of item is a variable with different length |
| Item\_price | price of item | Number(5,2) | fixed number digits, price has 2 decimal number |
|  |  |  |  |
| **OUTLET** | Table |  |  |
| outlet\_num | outlet number | Number(2) | fixed number digits |
| outlet\_tel | telephone number of outlet | Char(10) | fixed number character |
| outlet\_street | street of outlet located | Varchar2(100) | The street field value is a variable with different length |
| outlet\_surburb | suburb of outlet location | Varchar2(50) | The suburb field value is a variable with different length |
| outlet\_postcode | postcode of outlet location | Number(5) | fixed number digits |
|  |  |  |  |
| **CUSTOMER** | Table |  |  |
| cust\_num | customer number | Number(6) | fixed number digits |
| cust\_tel | telephone number of customer | Char(11) | fixed number character |
| cust\_title | title of customer | Char(2) | fixed number character |
| cust\_fname | first name of customer | VarChar2(50) | The value is a variable with different length |
| cust\_lname | last name of customer | VarChar2(50) | The value is a variable with different length |
| cust\_street | street of customer address | VarChar2(100) | The value is a variable with different length |
| cust\_suburb | suburb of customer address | VarChar2(50) | The value is a variable with different length |
| cust\_postcode | postcode of customer address | Number(5) | fixed number digits |
|  |  |  |  |
| **TRANSACTIONS** | Table |  |  |
| trans\_num | transaction number | Number(6) | fixed number digits |
| trans\_type | transaction type (e-wallet, cash, card) | Varchar2(20) | The value is a variable with different length |
| trans\_time | transaction time | Timestamp(2) | use the default timestamp format DD-MM-YYYY HH24:MI:SS.FF |
| trans\_amount | transaction amount | Number(6,2) | fixed number digits |
| trans\_discount | transaction discount | Number(3, 2) | fixed number digits |
|  |  |  |  |
| **ORDERS** | Table |  |  |
| order\_num | order number | Number(6) | fixed number digits |
| cust\_num | customer number | Number(6) | fixed number digits |
| outlet\_num | outlet number | Number(2) | fixed number digits |
| trans\_num | transaction number | Number(6) | fixed number digits |
| order\_time | ordered time | Timestamp(0) | use the timestamp format DD-MM-YYYY HH24:MI:SS |
|  |  |  |  |
| **ORDER\_LINE** | Table |  |  |
| order\_num | order number | Number(6) | fixed number digits |
| item\_num | item number | Number(3) | fixed number digits |
| order\_quantity | quantity of item in an order | Number(3) | fixed number digits |
|  |  |  |  |
| **TRAINING\_PLAN** | Table |  |  |
| train\_id | training identification | Number(3) | fixed number digits |
| tutor\_id | tutor identification (staff\_num) | Number(4) | fixed number digits |
| train\_description | training description (name) | Varchar2(60) | The value is a variable with different length |
| train\_level | training level (manager, supervisor, waiter, chef, rider) | Varchar2(20) | The value is a variable with different length |
|  |  |  |  |
| **STAFF** | Table |  |  |
| staff\_num | staff number | Number(4) | fixed number digits |
| outlet\_num | outlet number | Number(2) | fixed number digits |
| train\_id | training identification | Number(3) | fixed number digits |
| staff\_tittle | tittle of staff | Char(2) | fixed number character |
| staff\_fname | first name of staff | Varchar2(50) | The first name field value is a variable with different length |
| staff\_lname | last name of staff | Varchar2(50) | The last name field value is a variable with different length |
| staff\_tel | telephone number of staff | Char(11) | fixed number digits |
| staff\_street | street name of staff residential address | Varchar2(100) | The street field value is a variable with different length |
| staff\_suburb | suburb of staff residential address | Varchar2(50) | The suburb field value is a variable with different length |
| staff\_postcode | postcode of staff residential address | Number(5) | fixed number digits |
| staff\_position | position of staff (Manager, Supervisor, Senior Employee, Junior Employee, Part Time employee) | Varchar2(25) | The position field value is a variable with different length |
| staff\_doe | date of entry of staff | Date | default date format |
| staff\_dspln | disciplinary records of staff | Varchar2(50) | The disciplinary field value is a variable with different length |
| manager\_id | identification of staff's manager | Number(4) | fixed number digits |
|  |  |  |  |
| **STAFF\_LIST** | Table |  |  |
| order\_num | order number | Number(6) | fixed number digits |
| staff\_num | staff number | Number(4) | fixed number digits |
| job | job description (rider, telephone operator, waiter, chef) | Varchar2(20) | The value is a variable with different length |
|  |  |  |  |
| **VEHICLE** | Table |  |  |
| veh\_num | vehicle number | Varchar2(15) | The value is a variable with different length |
| outlet\_num | outlet number | Number(2) | fixed number digits |
| veh\_product | product of vehicle (model of vehicle) | Varchar2(50) | The value is a variable with different length |
| veh\_type | type of vehicle (motor, car, van) | Varchar2(10) | The value is a variable with different length |
| veh\_dop | vehicle's date of purchase | Date | default date format |
| veh\_lchecked | vehicle's last checked date | Date | default date format |
| veh\_mileage | vehicle's mileage | Number(6) | fixed number digit |
|  |  |  |  |
| **STOCK** | Table |  |  |
| stock\_num | stock number | Number(6) | fixed number digits |
| stock\_name | stock name | Varchar2(50) | The value is a variable with different length |
| stock\_catogory | category of stock | Varchar2(25) | The value is a variable with different length |
|  |  |  |  |
| **STOCK\_LIST** | Table |  |  |
| stock\_num | stock number | Number(6) | fixed number digits |
| outlet\_num | outlet number | Number(2) | fixed number digits |
| stock\_quantity | quantity of stock | Number(4) | fixed number digits |
| stock\_manfdate | manufacturing date of stock | Date | default date format |
| stock\_expdate | expired date of stock | Date | default date format |

1. List *DBscript* here (please use 9 point size for the listing)

ALTER SESSION SET NLS\_DATE\_FORMAT='DD/MM/YYYY';

DROP TABLE item CASCADE CONSTRAINTS;

DROP TABLE orders CASCADE CONSTRAINTS;

DROP TABLE order\_line CASCADE CONSTRAINTS;

DROP TABLE outlet CASCADE CONSTRAINTS;

DROP TABLE staff CASCADE CONSTRAINTS;

DROP TABLE staff\_list CASCADE CONSTRAINTS;

DROP TABLE customer CASCADE CONSTRAINTS;

DROP TABLE vehicle CASCADE CONSTRAINTS;

DROP TABLE transactions CASCADE CONSTRAINTS;

DROP TABLE training\_plan CASCADE CONSTRAINTS;

DROP TABLE stock CASCADE CONSTRAINTS;

DROP TABLE stock\_list CASCADE CONSTRAINTS;

CREATE TABLE item (

item\_num NUMBER(3) PRIMARY KEY,

item\_description NVARCHAR2(50) NOT NULL,

item\_type VARCHAR2(20) NOT NULL,

item\_price NUMBER(5,2) NOT NULL,

CONSTRAINT check\_item\_type CHECK (item\_type IN ('Pizza', 'Sides', 'Beverages', 'Soup', 'Pasta', 'Desserts', 'Breads')),

CONSTRAINT check\_item\_price CHECK (item\_price > 0),

CONSTRAINT AK\_item UNIQUE (item\_description)

);

INSERT INTO item VALUES (1, 'Hawaiian Pizza ' || UNISTR('\D83C\DF55\D83C\DF55'), 'Pizza', 24.99);

INSERT INTO item VALUES (2, 'Aloha Chicken ' || UNISTR('\D83C\DF55\D83C\DF57'), 'Pizza', 24.99);

INSERT INTO item VALUES (3, 'Chicken Delight ' || UNISTR('\D83C\DF57\D83C\DF55'), 'Pizza', 24.99);

INSERT INTO item VALUES (4, 'Beef Pepperoni ' || UNISTR('\D83C\DF56\D83C\DF55'), 'Pizza', 24.99);

INSERT INTO item VALUES (5, 'Beef Sensation ' || UNISTR('\D83C\DF56\D83C\DF55'), 'Pizza', 24.99);

INSERT INTO item VALUES (6, 'Seafood Sensation ' || UNISTR('\D83E\DD53\D83C\DF55'), 'Pizza', 24.99);

INSERT INTO item VALUES (7, 'Island Tuna ' || UNISTR('\D83C\DF63\D83C\DF55'), 'Pizza', 24.99);

INSERT INTO item VALUES (8, 'Vege Heaven ' || UNISTR('\D83C\DF3F\D83C\DF55'), 'Pizza', 24.99);

INSERT INTO item VALUES (9, 'Mushroom Supreme ' || UNISTR('\D83C\DF44\D83C\DF55'), 'Pizza', 24.99);

INSERT INTO item VALUES (10, 'Onion Rings' || UNISTR('\D83E\DDC5'), 'Sides', 7.20);

INSERT INTO item VALUES (11, 'Potato Wedges' || UNISTR('\D83E\DD54'), 'Sides', 7.20);

INSERT INTO item VALUES (12, 'Coke' || UNISTR('\D83C\DF7A'), 'Beverages', 5.90);

INSERT INTO item VALUES (13, 'Sprite' || UNISTR('\D83E\DDCA'), 'Beverages', 5.90);

INSERT INTO item VALUES (14, 'Fanta' || UNISTR('\D83C\DF4A'), 'Beverages', 5.90);

INSERT INTO item VALUES (15, '100 Plus' || UNISTR('\D83D\DCAF'), 'Beverages', 5.90);

INSERT INTO item VALUES (16, 'Creamy Carbonara Pasta' || UNISTR('\D83C\DF5D\D83E\DDC0'), 'Pasta', 15.90);

INSERT INTO item VALUES (17, 'Chicken Bolognaise Pasta' || UNISTR('\D83C\DF5D\D83C\DF57'), 'Pasta', 15.90);

INSERT INTO item VALUES (18, 'Mushroom Soup' || UNISTR('\D83C\DF44\D83C\DF5B'), 'Soup', 6.50);

INSERT INTO item VALUES (19, 'Pumpkin Soup' || UNISTR('\D83C\DF83\D83C\DF5B'), 'Soup', 6.50);

INSERT INTO item VALUES (20, 'Seafood Soup' || UNISTR('\D83C\DF64\D83C\DF5B'), 'Soup', 6.50);

INSERT INTO item VALUES (21, 'Chocolate Ice Cream' || UNISTR('\D83C\DF6B\D83C\DF66'), 'Desserts', 4.90);

INSERT INTO item VALUES (22, 'Vanilla Ice Cream' || UNISTR('\D83C\DF66\D83C\DF3C'), 'Desserts', 4.90);

INSERT INTO item VALUES (23, 'Chocolate Fudge Cake' || UNISTR('\D83C\DF6B\D83C\DF70'), 'Desserts', 4.90);

INSERT INTO item VALUES (24, 'Bread Stix' || UNISTR('\D83C\DF5E'), 'Breads', 4.99);

INSERT INTO item VALUES (25, 'Cheesy Stix' || UNISTR('\D83E\DDC0\D83C\DF5E'), 'Breads', 4.99);

CREATE TABLE outlet (

outlet\_num NUMBER(2) PRIMARY KEY,

outlet\_tel CHAR(10) NOT NULL,

outlet\_street VARCHAR2(100) NOT NULL,

outlet\_suburb VARCHAR2(50) NOT NULL,

outlet\_postcode NUMBER(5) NOT NULL,

CONSTRAINT check\_outlet\_postcode CHECK (outlet\_postcode BETWEEN 10000 AND 99999),

CONSTRAINT AK\_outlet UNIQUE (outlet\_tel)

);

INSERT INTO outlet VALUES (01, '0322013974', 'No. 26, Jalan Bangsar', 'Bangsa Baru', 59100);

INSERT INTO outlet VALUES (02, '0355240155', ' No.3 Jalan Aerobik 13/43', 'Shah Alam', 40100);

INSERT INTO outlet VALUES (03, '0377325710', 'No. 5 Jalan SS 22/19', 'Damansara Utama', 47400);

INSERT INTO outlet VALUES (04, '0366180751', 'No. 15 Jalan SS5B', 'Kelana Jaya', 47301);

INSERT INTO outlet VALUES (05, '0311809218', 'No. 7 Jalan Setia Indah', 'Setia Alam', 40170);

INSERT INTO outlet VALUES (06, '0399152830', 'No. 20 Jalan Sri Damak', 'Klang', 41200);

INSERT INTO outlet VALUES (07, '0388102638', 'No. 5 Jalan USJ 10', 'Subang Jaya', 47610);

CREATE TABLE customer (

cust\_num NUMBER(6) PRIMARY KEY,

cust\_tel CHAR(11) NOT NULL,

cust\_title CHAR(2) NOT NULL,

cust\_fname VARCHAR2(50) NOT NULL,

cust\_lname VARCHAR2(50) NOT NULL,

cust\_street VARCHAR2(100) NOT NULL,

cust\_suburb VARCHAR2(50) NOT NULL,

cust\_postcode NUMBER(5) NOT NULL,

CONSTRAINT check\_cust\_title CHECK (cust\_title IN ('Ms', 'Mr')),

CONSTRAINT check\_cust\_postcode CHECK (cust\_postcode BETWEEN 10000 AND 99999),

CONSTRAINT AK\_customer UNIQUE (cust\_tel)

);

INSERT INTO customer VALUES (123456, '01123456782', 'Mr', 'John', 'Smith', '1, Jalan Raya', 'Subang Jaya', 47500);

INSERT INTO customer VALUES (234567, '0123456789', 'Ms', 'Emily', 'Johnson', '2, Jalan Bahagia', 'Shah Alam', 40000);

INSERT INTO customer VALUES (345678, '0134567890', 'Mr', 'Daniel', 'Brown', '3, Jalan Ceria', 'Klang', 41000);

INSERT INTO customer VALUES (456789, '0145678901', 'Ms', 'Olivia', 'Taylor', '4, Jalan Damai', 'Petaling Jaya', 47400);

INSERT INTO customer VALUES (567890, '0156789012', 'Mr', 'William', 'Davis', '5, Jalan Sejahtera', 'Subang Jaya', 47500);

INSERT INTO customer VALUES (678901, '0167890123', 'Ms', 'Sophia', 'Wilson', '6, Jalan Indah', 'Shah Alam', 40000);

INSERT INTO customer VALUES (789012, '0178901234', 'Mr', 'Michael', 'Thomas', '7, Jalan Ceria', 'Klang', 41000);

INSERT INTO customer VALUES (890123, '0189012345', 'Ms', 'Emma', 'Clark', '8, Jalan Bahagia', 'Petaling Jaya', 47400);

INSERT INTO customer VALUES (901234, '0190123456', 'Mr', 'Jacob', 'Anderson', '9, Jalan Raya', 'Subang Jaya', 47500);

INSERT INTO customer VALUES (012345, '0101234567', 'Ms', 'Isabella', 'Lee', '10, Jalan Damai', 'Shah Alam', 40000);

INSERT INTO customer VALUES (129456, '0112345679', 'Mr', 'David', 'Martin', '11, Jalan Sejahtera', 'Klang', 41000);

INSERT INTO customer VALUES (294567, '0123456788', 'Ms', 'Ava', 'Harris', '12, Jalan Indah', 'Petaling Jaya', 47400);

INSERT INTO customer VALUES (340678, '0134567897', 'Mr', 'Daniel', 'Walker', '13, Jalan Bahagia', 'Subang Jaya', 47500);

INSERT INTO customer VALUES (421789, '0145678906', 'Ms', 'Sophia', 'Lewis', '14, Jalan Ceria', 'Shah Alam', 40000);

INSERT INTO customer VALUES (534890, '0156789015', 'Mr', 'Matthew', 'Brown', '15, Jalan Damai', 'Klang', 41000);

INSERT INTO customer VALUES (623901, '0167890124', 'Ms', 'Emily', 'Johnson', '16, Jalan Sejahtera', 'Petaling Jaya', 47400);

INSERT INTO customer VALUES (776012, '0178901233', 'Mr', 'David', 'Taylor', '17, Jalan Indah', 'Subang Jaya', 47500);

INSERT INTO customer VALUES (834123, '0189012342', 'Ms', 'Olivia', 'Davis', '18, Jalan Raya', 'Shah Alam', 40000);

INSERT INTO customer VALUES (905634, '0190123451', 'Mr', 'James', 'Clark', '19, Jalan Bahagia', 'Klang', 41000);

INSERT INTO customer VALUES (013445, '0101234565', 'Ms', 'Sophia', 'Anderson', '20, Jalan Ceria', 'Petaling Jaya', 47400);

CREATE TABLE transactions (

trans\_num NUMBER(6) PRIMARY KEY,

trans\_type VARCHAR2(20) NOT NULL,

trans\_time TIMESTAMP(2) NOT NULL,

trans\_amount NUMBER(6, 2) NOT NULL,

trans\_discount NUMBER(3,2) DEFAULT NULL,

CONSTRAINT check\_trans\_amount CHECK (trans\_amount >0),

CONSTRAINT check\_discount CHECK (trans\_discount BETWEEN 0 AND 1),

CONSTRAINT AK\_transactions UNIQUE (trans\_time)

);

/\*

Due to the high volume of transactions in the pizza restaurant, an index on trans\_type is created to enhance

the performance of filtering data. This improvement aids in generating daily sales reports based on transaction types,

facilitating financial analysis and performance evaluation.

\*/

CREATE INDEX idx\_trans\_type ON transactions(trans\_type);

INSERT INTO transactions

VALUES (000001, 'Cash', TO\_TIMESTAMP('02-05-2022 18:23:11.02', 'DD-MM-YYYY HH24:MI:SS.FF'), 112.46, 0.20);

INSERT INTO transactions (trans\_num, trans\_type, trans\_time, trans\_amount)

VALUES (000002, 'Credit Card', TO\_TIMESTAMP('05-06-2022 10:45:30.00', 'DD-MM-YYYY HH24:MI:SS.FF'), 69.48);

INSERT INTO transactions (trans\_num, trans\_type, trans\_time, trans\_amount)

VALUES (000003, 'E-wallet', TO\_TIMESTAMP('10-07-2022 15:12:40.57', 'DD-MM-YYYY HH24:MI:SS.FF'), 17.70);

INSERT INTO transactions

VALUES (000004, 'Cash', TO\_TIMESTAMP('21-07-2022 09:30:15.82', 'DD-MM-YYYY HH24:MI:SS.FF'), 90.87, 0.10);

INSERT INTO transactions (trans\_num, trans\_type, trans\_time, trans\_amount)

VALUES (000005, 'Credit Card', TO\_TIMESTAMP('04-08-2022 12:55:21.19', 'DD-MM-YYYY HH24:MI:SS.FF'), 24.99);

INSERT INTO transactions (trans\_num, trans\_type, trans\_time, trans\_amount)

VALUES (000006, 'E-wallet', TO\_TIMESTAMP('12-08-2022 17:40:05.63', 'DD-MM-YYYY HH24:MI:SS.FF'), 24.99);

INSERT INTO transactions (trans\_num, trans\_type, trans\_time, trans\_amount)

VALUES (000007, 'Cash', TO\_TIMESTAMP('20-09-2022 14:20:30.42', 'DD-MM-YYYY HH24:MI:SS.FF'), 16.70);

INSERT INTO transactions

VALUES (000008, 'Credit Card', TO\_TIMESTAMP('07-10-2022 09:15:55.88', 'DD-MM-YYYY HH24:MI:SS.FF'), 74.97, 0.10);

INSERT INTO transactions

VALUES (000009, 'E-wallet', TO\_TIMESTAMP('28-10-2022 13:05:41.72', 'DD-MM-YYYY HH24:MI:SS.FF'), 99.96, 0.10);

INSERT INTO transactions (trans\_num, trans\_type, trans\_time, trans\_amount)

VALUES (000010, 'Cash', TO\_TIMESTAMP('17-11-2022 19:48:23.11', 'DD-MM-YYYY HH24:MI:SS.FF'), 57.18);

INSERT INTO transactions

VALUES (000011, 'Credit Card', TO\_TIMESTAMP('09-12-2022 11:30:55.03', 'DD-MM-YYYY HH24:MI:SS.FF'), 74.97, 0.10);

INSERT INTO transactions

VALUES (000012, 'E-wallet', TO\_TIMESTAMP('01-01-2023 14:55:20.69', 'DD-MM-YYYY HH24:MI:SS.FF'), 74.97, 0.10);

INSERT INTO transactions

VALUES (000013, 'Cash', TO\_TIMESTAMP('23-01-2023 17:10:45.40', 'DD-MM-YYYY HH24:MI:SS.FF'), 74.97, 0.10);

INSERT INTO transactions (trans\_num, trans\_type, trans\_time, trans\_amount)

VALUES (000014, 'Credit Card', TO\_TIMESTAMP('16-02-2023 09:25:30.92', 'DD-MM-YYYY HH24:MI:SS.FF'), 25.88);

INSERT INTO transactions (trans\_num, trans\_type, trans\_time, trans\_amount)

VALUES (000015, 'E-wallet', TO\_TIMESTAMP('14-03-2023 12:40:15.21', 'DD-MM-YYYY HH24:MI:SS.FF'), 49.98);

INSERT INTO transactions (trans\_num, trans\_type, trans\_time, trans\_amount)

VALUES (000016, 'Cash', TO\_TIMESTAMP('26-03-2023 15:55:50.63', 'DD-MM-YYYY HH24:MI:SS.FF'), 24.99);

INSERT INTO transactions (trans\_num, trans\_type, trans\_time, trans\_amount)

VALUES (000017, 'Credit Card', TO\_TIMESTAMP('09-04-2023 18:30:40.49', 'DD-MM-YYYY HH24:MI:SS.FF'), 59.78);

INSERT INTO transactions (trans\_num, trans\_type, trans\_time, trans\_amount)

VALUES (000018, 'E-wallet', TO\_TIMESTAMP('17-05-2023 10:45:55.74', 'DD-MM-YYYY HH24:MI:SS.FF'), 67.20);

INSERT INTO transactions (trans\_num, trans\_type, trans\_time, trans\_amount)

VALUES (000019, 'Cash', TO\_TIMESTAMP('14-06-2023 13:20:10.31', 'DD-MM-YYYY HH24:MI:SS.FF'), 55.88);

INSERT INTO transactions (trans\_num, trans\_type, trans\_time, trans\_amount)

VALUES (000020, 'Credit Card', TO\_TIMESTAMP('03-07-2023 16:45:25.16', 'DD-MM-YYYY HH24:MI:SS.FF'), 56.39);

INSERT INTO transactions (trans\_num, trans\_type, trans\_time, trans\_amount)

VALUES (000021, 'Credit Card', TO\_TIMESTAMP('09-07-2023 12:32:40.49', 'DD-MM-YYYY HH24:MI:SS.FF'), 29.98);

INSERT INTO transactions (trans\_num, trans\_type, trans\_time, trans\_amount)

VALUES (000022, 'E-wallet', TO\_TIMESTAMP('15-07-2023 19:55:50.63', 'DD-MM-YYYY HH24:MI:SS.FF'), 49.98);

CREATE TABLE orders (

order\_num NUMBER(6) PRIMARY KEY,

cust\_num NUMBER(6) NOT NULL,

outlet\_num NUMBER(2) NOT NULL,

trans\_num NUMBER(6) NOT NULL,

order\_time TIMESTAMP(0) NOT NULL,

FOREIGN KEY (cust\_num) REFERENCES customer(cust\_num),

FOREIGN KEY (outlet\_num) REFERENCES outlet(outlet\_num),

FOREIGN KEY (trans\_num) REFERENCES transactions(trans\_num),

CONSTRAINT check\_outlet\_num CHECK (outlet\_num BETWEEN 1 AND 7),

CONSTRAINT AK\_orders UNIQUE (cust\_num, order\_time)

);

INSERT INTO orders VALUES (000001, 123456, 01, 000001, TO\_TIMESTAMP('02-05-2022 18:23:11', 'DD-MM-YYYY HH24:MI:SS'));

INSERT INTO orders VALUES (000002, 234567, 02, 000002, TO\_TIMESTAMP('05-06-2022 10:45:30', 'DD-MM-YYYY HH24:MI:SS'));

INSERT INTO orders VALUES (000003, 345678, 03, 000003, TO\_TIMESTAMP('10-07-2022 15:12:40', 'DD-MM-YYYY HH24:MI:SS'));

INSERT INTO orders VALUES (000004, 456789, 04, 000004, TO\_TIMESTAMP('21-07-2022 09:30:15', 'DD-MM-YYYY HH24:MI:SS'));

INSERT INTO orders VALUES (000005, 567890, 05, 000005, TO\_TIMESTAMP('04-08-2022 12:55:21', 'DD-MM-YYYY HH24:MI:SS'));

INSERT INTO orders VALUES (000006, 678901, 06, 000006, TO\_TIMESTAMP('12-08-2022 17:40:05', 'DD-MM-YYYY HH24:MI:SS'));

INSERT INTO orders VALUES (000007, 789012, 07, 000007, TO\_TIMESTAMP('20-09-2022 14:20:30', 'DD-MM-YYYY HH24:MI:SS'));

INSERT INTO orders VALUES (000008, 890123, 02, 000008, TO\_TIMESTAMP('07-10-2022 09:15:55', 'DD-MM-YYYY HH24:MI:SS'));

INSERT INTO orders VALUES (000009, 901234, 03, 000009, TO\_TIMESTAMP('28-10-2022 13:05:41', 'DD-MM-YYYY HH24:MI:SS'));

INSERT INTO orders VALUES (000010, 012345, 01, 000010, TO\_TIMESTAMP('17-11-2022 19:48:23', 'DD-MM-YYYY HH24:MI:SS'));

INSERT INTO orders VALUES (000011, 129456, 04, 000011, TO\_TIMESTAMP('09-12-2022 11:30:55', 'DD-MM-YYYY HH24:MI:SS'));

INSERT INTO orders VALUES (000012, 294567, 05, 000012, TO\_TIMESTAMP('01-01-2023 14:55:20', 'DD-MM-YYYY HH24:MI:SS'));

INSERT INTO orders VALUES (000013, 340678, 06, 000013, TO\_TIMESTAMP('23-01-2023 17:10:45', 'DD-MM-YYYY HH24:MI:SS'));

INSERT INTO orders VALUES (000014, 421789, 07, 000014, TO\_TIMESTAMP('16-02-2023 09:25:30', 'DD-MM-YYYY HH24:MI:SS'));

INSERT INTO orders VALUES (000015, 534890, 03, 000015, TO\_TIMESTAMP('14-03-2023 12:40:15', 'DD-MM-YYYY HH24:MI:SS'));

INSERT INTO orders VALUES (000016, 623901, 01, 000016, TO\_TIMESTAMP('26-03-2023 15:55:50', 'DD-MM-YYYY HH24:MI:SS'));

INSERT INTO orders VALUES (000017, 776012, 02, 000017, TO\_TIMESTAMP('09-04-2023 18:30:40', 'DD-MM-YYYY HH24:MI:SS'));

INSERT INTO orders VALUES (000018, 834123, 04, 000018, TO\_TIMESTAMP('17-05-2023 10:40:15', 'DD-MM-YYYY HH24:MI:SS'));

INSERT INTO orders VALUES (000019, 834123, 04, 000018, TO\_TIMESTAMP('17-05-2023 10:43:34', 'DD-MM-YYYY HH24:MI:SS'));

INSERT INTO orders VALUES (000020, 834123, 04, 000018, TO\_TIMESTAMP('17-05-2023 10:45:55', 'DD-MM-YYYY HH24:MI:SS'));

INSERT INTO orders VALUES (000021, 905634, 05, 000019, TO\_TIMESTAMP('14-06-2023 12:50:50', 'DD-MM-YYYY HH24:MI:SS'));

INSERT INTO orders VALUES (000022, 905634, 05, 000019, TO\_TIMESTAMP('14-06-2023 13:20:10', 'DD-MM-YYYY HH24:MI:SS'));

INSERT INTO orders VALUES (000023, 013445, 06, 000020, TO\_TIMESTAMP('03-07-2023 16:30:15', 'DD-MM-YYYY HH24:MI:SS'));

INSERT INTO orders VALUES (000024, 013445, 06, 000020, TO\_TIMESTAMP('03-07-2023 16:45:25', 'DD-MM-YYYY HH24:MI:SS'));

INSERT INTO orders VALUES (000025, 776012, 07, 000021, TO\_TIMESTAMP('09-07-2023 12:32:40', 'DD-MM-YYYY HH24:MI:SS'));

INSERT INTO orders VALUES (000026, 623901, 07, 000022, TO\_TIMESTAMP('15-07-2023 19:55:50', 'DD-MM-YYYY HH24:MI:SS'));

CREATE TABLE order\_line (

CONSTRAINT PK\_order\_line PRIMARY KEY (order\_num, item\_num),

order\_num NUMBER(6) NOT NULL,

item\_num NUMBER(3) NOT NULL,

order\_quantity NUMBER(3) NOT NULL,

FOREIGN KEY (order\_num) REFERENCES orders(order\_num),

FOREIGN KEY (item\_num) REFERENCES item(item\_num),

CONSTRAINT check\_order\_quantity CHECK (order\_quantity > 0)

);

INSERT INTO order\_line VALUES (000001, 17, 3);

INSERT INTO order\_line VALUES (000001, 18, 2);

INSERT INTO order\_line VALUES (000002, 3, 2);

INSERT INTO order\_line VALUES (000002, 19, 3);

INSERT INTO order\_line VALUES (000003, 12, 3);

INSERT INTO order\_line VALUES (000004, 6, 1);

INSERT INTO order\_line VALUES (000004, 7, 2);

INSERT INTO order\_line VALUES (000004, 16, 1);

INSERT INTO order\_line VALUES (000005, 3, 1);

INSERT INTO order\_line VALUES (000006, 8, 1);

INSERT INTO order\_line VALUES (000007, 22, 1);

INSERT INTO order\_line VALUES (000007, 12, 2);

INSERT INTO order\_line VALUES (000008, 3, 3);

INSERT INTO order\_line VALUES (000009, 2, 2);

INSERT INTO order\_line VALUES (000009, 4, 2);

INSERT INTO order\_line VALUES (000010, 18, 2);

INSERT INTO order\_line VALUES (000010, 11, 1);

INSERT INTO order\_line VALUES (000011, 1, 3);

INSERT INTO order\_line VALUES (000012, 18, 1);

INSERT INTO order\_line VALUES (000012, 8, 2);

INSERT INTO order\_line VALUES (000013, 4, 3);

INSERT INTO order\_line VALUES (000014, 24, 2);

INSERT INTO order\_line VALUES (000014, 16, 1);

INSERT INTO order\_line VALUES (000015, 9, 2);

INSERT INTO order\_line VALUES (000016, 3, 1);

INSERT INTO order\_line VALUES (000017, 4, 2);

INSERT INTO order\_line VALUES (000018, 10, 2);

INSERT INTO order\_line VALUES (000019, 18, 1);

INSERT INTO order\_line VALUES (000020, 16, 3);

INSERT INTO order\_line VALUES (000021, 6, 2);

INSERT INTO order\_line VALUES (000022, 15, 1);

INSERT INTO order\_line VALUES (000023, 22, 2);

INSERT INTO order\_line VALUES (000024, 12, 1);

INSERT INTO order\_line VALUES (000024, 11, 2);

INSERT INTO order\_line VALUES (000024, 10, 1);

INSERT INTO order\_line VALUES (000025, 9, 1);

INSERT INTO order\_line VALUES (000025, 25, 1);

INSERT INTO order\_line VALUES (000026, 7, 2);

CREATE TABLE training\_plan (

train\_id NUMBER(3) PRIMARY KEY,

tutor\_id NUMBER(4) NOT NULL,

train\_description VARCHAR2(60) NOT NULL,

train\_level VARCHAR2(20) NOT NULL,

CONSTRAINT AK\_training\_plan UNIQUE (tutor\_id)

);

INSERT INTO training\_plan VALUES (1, 1, 'Leadership and Management Skills', 'Manager');

INSERT INTO training\_plan VALUES (2, 17, 'Strategic Planning and Decision Making', 'Manager');

INSERT INTO training\_plan VALUES (3, 25, 'Effective Communication and Interpersonal Skills', 'Supervisor');

INSERT INTO training\_plan VALUES (4, 15, 'Teamwork and Collaboration', 'Waiter');

INSERT INTO training\_plan VALUES (5, 19, 'Customer Service Excellence', 'Waiter');

INSERT INTO training\_plan VALUES (6, 28, 'Conflict Resolution and Problem-Solving', 'Waiter');

INSERT INTO training\_plan VALUES (7, 35, 'Time Management and Productivity', 'Waiter');

INSERT INTO training\_plan VALUES (8, 18, 'Food Safety and Hygiene', 'Waiter');

INSERT INTO training\_plan VALUES (9, 27, 'Menu Planning and Recipe Development', 'Chef');

INSERT INTO training\_plan VALUES (10, 21, 'Culinary Techniques and Food Preparation', 'Chef');

INSERT INTO training\_plan VALUES (11, 4, 'Effective Service Recovery and Handling Difficult Customers', 'Waiter');

INSERT INTO training\_plan VALUES (12, 3, 'Creative Plating and Presentation', 'Chef');

INSERT INTO training\_plan VALUES (13, 7, 'Upselling Techniques and Sales Skills', 'Waiter');

INSERT INTO training\_plan VALUES (14, 52, 'Effective Customer Communication', 'Rider');

INSERT INTO training\_plan VALUES (15, 42, 'Route and Navigation Training', 'Rider');

CREATE TABLE staff (

staff\_num NUMBER(4) PRIMARY KEY,

outlet\_num NUMBER(2) NOT NULL,

train\_id NUMBER(3),

staff\_title CHAR(2) NOT NULL,

staff\_fname VARCHAR2(50) NOT NULL,

staff\_lname VARCHAR2(50) NOT NULL,

staff\_tel CHAR(11) NOT NULL,

staff\_street VARCHAR2(100) NOT NULL,

staff\_suburb VARCHAR2(50) NOT NULL,

staff\_postcode NUMBER(5) NOT NULL,

staff\_position VARCHAR2(25) NOT NULL,

staff\_doe DATE NOT NULL,

staff\_dspln VARCHAR2(50) DEFAULT NULL,

manager\_id NUMBER(4),

FOREIGN KEY (outlet\_num) REFERENCES outlet(outlet\_num),

FOREIGN KEY (train\_id) REFERENCES training\_plan(train\_id),

CONSTRAINT check\_staff\_title CHECK (staff\_title IN ('Ms', 'Mr')),

CONSTRAINT check\_staff\_postcode CHECK (staff\_postcode BETWEEN 10000 AND 99999),

CONSTRAINT AK\_staff UNIQUE (staff\_tel)

);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (1, 01, NULL, 'Mr', 'James', 'Bonne', '0123434789', '21, Jalan Merdeka', 'Petaling Jaya', 47400, 'Manager', TO\_DATE('01-02-2022', 'DD-MM-YYYY'),NULL);

INSERT INTO staff

VALUES (2, 01, 6, 'Ms', 'Emily', 'Charles', '0134564590', '22, Jalan Bahagia', 'Shah Alam', 40000, 'Senior Employee', TO\_DATE('03-04-2022', 'DD-MM-YYYY'), 'Suspension without pay',1);

INSERT INTO staff

VALUES (3, 01, 9, 'Mr', 'Daniel', 'Chad', '0156678901', '23, Jalan Ceria', 'Klang', 41000, 'Senior Employee', TO\_DATE('05-04-2022', 'DD-MM-YYYY'), 'Suspension without pay',1);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (4, 01, 3, 'Ms', 'Olivia', 'Taylor', '0156789012', '24, Jalan Damai', 'Petaling Jaya', 47400, 'Supervisor', TO\_DATE('07-08-2022', 'DD-MM-YYYY'),1);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (5, 01, 6, 'Mr', 'William', 'Davis', '0132789012', '25, Jalan Sejahtera', 'Subang Jaya', 47500, 'Part Time Employee', TO\_DATE('09-10-2022', 'DD-MM-YYYY'),1);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (6, 01, 9, 'Ms', 'Sophia', 'Wilson', '0178976234', '26, Jalan Indah', 'Shah Alam', 40000, 'Junior Employee', TO\_DATE('11-11-2022', 'DD-MM-YYYY'),1);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (7, 04, 3, 'Mr', 'Michael', 'Thomas', '0189872345', '27, Jalan Ceria', 'Klang', 41000, 'Supervisor', TO\_DATE('13-02-2023', 'DD-MM-YYYY'),28);

INSERT INTO staff

VALUES (8, 04, 4, 'Ms', 'Emma', 'Clark', '0190165456', '28, Jalan Bahagia', 'Petaling Jaya', 47400, 'Senior Employee', TO\_DATE('15-04-2022', 'DD-MM-YYYY'), 'Written Warning',28);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (9, 02, 9, 'Mr', 'Jacob', 'Anderson', '0101984567', '29, Jalan Raya', 'Subang Jaya', 47500, 'Senior Employee', TO\_DATE('01-06-2022', 'DD-MM-YYYY'),17);

INSERT INTO staff

VALUES (10, 02, 8, 'Ms', 'Isabella', 'Lee', '0112325678', '30, Jalan Damai', 'Shah Alam', 40000, 'Senior Employee', TO\_DATE('19-05-2022', 'DD-MM-YYYY'), 'Demotion',17);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (11, 02, NULL, 'Mr', 'David', 'Martin', '0125456789', '31, Jalan Sejahtera', 'Klang', 41000, 'Junior Employee', TO\_DATE('01-10-2022', 'DD-MM-YYYY'),17);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (12, 02, 7, 'Ms', 'Ava', 'Harris', '0134560990', '32, Jalan Indah', 'Petaling Jaya', 47400, 'Junior Employee', TO\_DATE('23-12-2022', 'DD-MM-YYYY'),17);

INSERT INTO staff

VALUES (13, 02, 11, 'Mr', 'Daniel', 'Walker', '0140978901', '33, Jalan Bahagia', 'Subang Jaya', 47500, 'Part Time Employee', TO\_DATE('25-09-2022', 'DD-MM-YYYY'), 'Verbal Warning',17);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (14, 04, 10, 'Ms', 'Sophia', 'Lewis', '0156784312', '34, Jalan Ceria', 'Shah Alam', 40000, 'Part Time Employee', TO\_DATE('27-04-2022', 'DD-MM-YYYY'),28);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (15, 05, 1, 'Mr', 'Matthew', 'Brown', '0167843123', '35, Jalan Damai', 'Klang', 41000, 'Manager', TO\_DATE('29-06-2022', 'DD-MM-YYYY'),NULL);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (16, 04, 13, 'Ms', 'Emily', 'Johnson', '0178921234', '36, Jalan Sejahtera', 'Petaling Jaya', 47400, 'Senior Employee', TO\_DATE('31-08-2022', 'DD-MM-YYYY'),28);

INSERT INTO staff

VALUES (17, 02, 1, 'Mr', 'David', 'Taylor', '0182112345', '37, Jalan Indah', 'Subang Jaya', 47500, 'Manager', TO\_DATE('02-11-2022', 'DD-MM-YYYY'), 'Suspension without pay',NULL);

INSERT INTO staff

VALUES (18, 06, 3, 'Ms', 'Olivia', 'Davis', '0190123256', '38, Jalan Raya', 'Shah Alam', 40000, 'Supervisor', TO\_DATE('04-01-2023', 'DD-MM-YYYY'), 'Verbal Warning',35);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (19, 03, 2, 'Mr', 'James', 'Clark', '0101214567', '39, Jalan Bahagia', 'Klang', 41000, 'Manager', TO\_DATE('06-03-2022', 'DD-MM-YYYY'),NULL);

INSERT INTO staff

VALUES (20, 03, 13, 'Ms', 'Sophia', 'Anderson', '0112376678', '40, Jalan Ceria', 'Petaling Jaya', 47400, 'Part Time Employee', TO\_DATE('08-05-2022', 'DD-MM-YYYY'), 'Verbal Warning',19);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (21, 03, 9, 'Mr', 'William', 'Martin', '0123546789', '41, Jalan Damai', 'Subang Jaya', 47500, 'Senior Employee', TO\_DATE('10-07-2022', 'DD-MM-YYYY'),19);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (22, 03, 3,'Ms', 'Emma', 'Harris', '0134565890', '42, Jalan Sejahtera', 'Shah Alam', 40000, 'Supervisor', TO\_DATE('12-09-2022', 'DD-MM-YYYY'),19);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (23, 03, NULL, 'Mr', 'Jacob', 'Lewis', '0145768901', '43, Jalan Indah', 'Klang', 41000, 'Junior Employee', TO\_DATE('14-10-2022', 'DD-MM-YYYY'),19);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (24, 03, 12, 'Ms', 'Isabella', 'Brown', '0156439012', '44, Jalan Bahagia', 'Petaling Jaya', 47400, 'Junior Employee', TO\_DATE('16-10-2022', 'DD-MM-YYYY'),19);

INSERT INTO staff VALUES (25, 07, 2, 'Mr', 'Daniel', 'Taylor', '0167893223', '45, Jalan Ceria', 'Subang Jaya', 47500, 'Manager', TO\_DATE('18-03-2022', 'DD-MM-YYYY'), 'Verbal Warning',NULL);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (26, 05, 11, 'Ms', 'Olivia', 'Johnson', '0178761234', '46, Jalan Raya', 'Shah Alam', 40000, 'Senior Employee', TO\_DATE('20-05-2022', 'DD-MM-YYYY'),15);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (27, 04, NULL, 'Mr', 'Patrick', 'Bonne', '0189032345', '47, Jalan Merdeka', 'Klang', 41000, 'Senior Employee', TO\_DATE('22-07-2022', 'DD-MM-YYYY'),28);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (28, 04, 2, 'Ms', 'Lexi', 'Green', '0175442288', '52, Jalan Kenari', 'Puchong Jaya', 63000, 'Manager', TO\_DATE('22-07-2022', 'DD-MM-YYYY'),NULL);

INSERT INTO staff

VALUES (29, 05, 7, 'Mr', 'Adam', 'Smith', '0163226789', '1, Jalan Raya', 'Subang Jaya', 47500, 'Part Time Employee', TO\_DATE('01-12-2022', 'DD-MM-YYYY'), 'Written Warning',15);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (30, 05, 12, 'Ms', 'Sophie', 'Johnson', '0174511890', '2, Jalan Bahagia', 'Shah Alam', 40000, 'Senior Employee', TO\_DATE('03-04-2022', 'DD-MM-YYYY'),15);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (31, 05, 10, 'Mr', 'Ethan', 'Brown', '0185675501', '3, Jalan Ceria', 'Klang', 41000, 'Senior Employee', TO\_DATE('05-06-2022', 'DD-MM-YYYY'),15);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (32, 06, 7, 'Ms', 'Aria', 'Taylor', '0196783312', '4, Jalan Damai', 'Petaling Jaya', 47400, 'Senior Employee', TO\_DATE('07-06-2022', 'DD-MM-YYYY'),35);

INSERT INTO staff

VALUES (33, 06, 9, 'Mr', 'Noah', 'Davis', '0107866123', '5, Jalan Sejahtera', 'Subang Jaya', 47500, 'Part Time Employee', TO\_DATE('09-08-2022', 'DD-MM-YYYY'), 'Written Warning',35);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (34, 06, NULL, 'Ms', 'Mia', 'Wilson', '0118881234', '6, Jalan Indah', 'Shah Alam', 40000, 'Junior Employee', TO\_DATE('11-12-2022', 'DD-MM-YYYY'),35);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (35, 06, 1, 'Mr', 'Liam', 'Thomas', '0129099345', '7, Jalan Ceria', 'Klang', 41000, 'Manager', TO\_DATE('13-01-2023', 'DD-MM-YYYY'),NULL);

INSERT INTO staff

VALUES (36, 07, NULL, 'Ms', 'Zoe', 'Chester', '0130123356', '8, Jalan Bahagia', 'Petaling Jaya', 47400, 'Senior Employee', TO\_DATE('15-04-2022', 'DD-MM-YYYY'), 'Written Warning',25);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (37, 07, 12, 'Mr', 'Elijah', 'Anderson', '0141234447', '9, Jalan Raya', 'Subang Jaya', 47500, 'Junior Employee', TO\_DATE('17-01-2023', 'DD-MM-YYYY'),25);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (38, 07, 11, 'Ms', 'Ava', 'Lee', '0152665678', '10, Jalan Damai', 'Shah Alam', 40000, 'Senior Employee', TO\_DATE('19-07-2022', 'DD-MM-YYYY'),25);

INSERT INTO staff

VALUES (39, 07, 5, 'Mr', 'James', 'Martin', '0163776789', '11, Jalan Sejahtera', 'Klang', 41000, 'Junior Employee', TO\_DATE('21-10-2022', 'DD-MM-YYYY'),'Demotion',25);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (40, 01, 14, 'Mr', 'Oliver', 'Smith', '0174534890', '12, Jalan Raya', 'Subang Jaya', 47500, 'Senior Employee', TO\_DATE('02-03-2022', 'DD-MM-YYYY'),1);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (41, 01, 15, 'Ms', 'Ava', 'Johnson', '0155678901', '13, Jalan Bahagia', 'Shah Alam', 40000, 'Part Time Employee', TO\_DATE('04-03-2023', 'DD-MM-YYYY'),1);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (42, 02, 14, 'Mr', 'Elijah', 'Brown', '0196780912', '14, Jalan Ceria', 'Klang', 41000, 'Senior Employee', TO\_DATE('06-07-2022', 'DD-MM-YYYY'),17);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (43, 02, 14, 'Ms', 'Scarlett', 'Taylor', '0107832123', '15, Jalan Damai', 'Petaling Jaya', 47400, 'Part Time Employee', TO\_DATE('08-09-2022', 'DD-MM-YYYY'),17);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (44, 03, NULL, 'Mr', 'Lucas', 'Davis', '0118908734', '16, Jalan Sejahtera', 'Subang Jaya', 47500, 'Senior Employee', TO\_DATE('09-07-2022', 'DD-MM-YYYY'),19);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (45, 03, 14, 'Ms', 'Chloe', 'Wilson', '0129019845', '17, Jalan Indah', 'Shah Alam', 40000, 'Junior Employee', TO\_DATE('12-01-2023', 'DD-MM-YYYY'),19);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (46, 04, 15, 'Mr', 'Muhammad', 'Thomas', '0130083456', '18, Jalan Ceria', 'Klang', 41000, 'Senior Employee', TO\_DATE('14-02-2022', 'DD-MM-YYYY'),28);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (47, 04, 15, 'Ms', 'Amelia', 'Clark', '0141044567', '19, Jalan Bahagia', 'Petaling Jaya', 47400, 'Part Time Employee', TO\_DATE('16-03-2022', 'DD-MM-YYYY'),28);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (48, 05, NULL, 'Mr', 'Mason', 'Anderson', '0152343578', '20, Jalan Raya', 'Subang Jaya', 47500, 'Junior Employee', TO\_DATE('18-10-2022', 'DD-MM-YYYY'),15);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (49, 05, 15, 'Ms', 'Harper', 'Lee', '0163452589', '21, Jalan Damai', 'Shah Alam', 40000, 'Part Time Employee', TO\_DATE('20-05-2023', 'DD-MM-YYYY'),15);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (50, 06, 14, 'Mr', 'Ethan', 'Martin', '0174537890', '22, Jalan Sejahtera', 'Klang', 41000, 'Senior Employee', TO\_DATE('22-06-2022', 'DD-MM-YYYY'),35);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (51, 06, NULL, 'Ms', 'Lily', 'Harris', '0185629901', '23, Jalan Indah', 'Petaling Jaya', 47400, 'Senior Employee', TO\_DATE('24-07-2022', 'DD-MM-YYYY'),35);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (52, 07, 15, 'Mr', 'Owen', 'Lewis', '0196209012', '24, Jalan Ceria', 'Subang Jaya', 47500, 'Senior Employee', TO\_DATE('26-08-2022', 'DD-MM-YYYY'),25);

INSERT INTO staff (staff\_num, outlet\_num, train\_id, staff\_title, staff\_fname, staff\_lname, staff\_tel, staff\_street, staff\_suburb, staff\_postcode, staff\_position, staff\_doe, manager\_id)

VALUES (53, 07, NULL, 'Ms', 'Zoe', 'Brown', '0107839123', '25, Jalan Bahagia', 'Shah Alam', 40000, 'Part Time Employee', TO\_DATE('28-01-2023', 'DD-MM-YYYY'),25);

alter table training\_plan add

foreign key(tutor\_id) references staff(staff\_num);

CREATE TABLE staff\_list (

CONSTRAINT PK\_staff\_list PRIMARY KEY (order\_num, staff\_num),

order\_num NUMBER(6) NOT NULL,

staff\_num NUMBER(4) NOT NULL,

job VARCHAR2(20) NOT NULL,

FOREIGN KEY (order\_num) REFERENCES orders(order\_num),

FOREIGN KEY (staff\_num) REFERENCES staff(staff\_num)

);

INSERT INTO staff\_list VALUES (000001, 2, 'Waiter');

INSERT INTO staff\_list VALUES (000001, 3, 'Chef');

INSERT INTO staff\_list VALUES (000002, 10, 'Waiter');

INSERT INTO staff\_list VALUES (000002, 9, 'Chef');

INSERT INTO staff\_list VALUES (000003, 20, 'Telephone Operator');

INSERT INTO staff\_list VALUES (000003, 44, 'Rider');

INSERT INTO staff\_list VALUES (000003, 21, 'Chef');

INSERT INTO staff\_list VALUES (000004, 8, 'Telephone Operator');

INSERT INTO staff\_list VALUES (000004, 46, 'Rider');

INSERT INTO staff\_list VALUES (000004, 14, 'Chef');

INSERT INTO staff\_list VALUES (000005, 26, 'Waiter');

INSERT INTO staff\_list VALUES (000005, 30, 'Chef');

INSERT INTO staff\_list VALUES (000006, 32, 'Waiter');

INSERT INTO staff\_list VALUES (000006, 33, 'Chef');

INSERT INTO staff\_list VALUES (000007, 38, 'Telephone Operator');

INSERT INTO staff\_list VALUES (000007, 52, 'Rider');

INSERT INTO staff\_list VALUES (000007, 36, 'Chef');

INSERT INTO staff\_list VALUES (000008, 13, 'Telephone Operator');

INSERT INTO staff\_list VALUES (000008, 42, 'Rider');

INSERT INTO staff\_list VALUES (000008, 11, 'Chef');

INSERT INTO staff\_list VALUES (000009, 23, 'Waiter');

INSERT INTO staff\_list VALUES (000009, 24, 'Chef');

INSERT INTO staff\_list VALUES (000010, 5, 'Telephone Operator');

INSERT INTO staff\_list VALUES (000010, 40, 'Rider');

INSERT INTO staff\_list VALUES (000010, 6, 'Chef');

INSERT INTO staff\_list VALUES (000011, 16, 'Waiter');

INSERT INTO staff\_list VALUES (000011, 27, 'Chef');

INSERT INTO staff\_list VALUES (000012, 29, 'Telephone Operator');

INSERT INTO staff\_list VALUES (000012, 48, 'Rider');

INSERT INTO staff\_list VALUES (000012, 31, 'Chef');

INSERT INTO staff\_list VALUES (000013, 35, 'Telephone Operator');

INSERT INTO staff\_list VALUES (000013, 50, 'Rider');

INSERT INTO staff\_list VALUES (000013, 34, 'Chef');

INSERT INTO staff\_list VALUES (000014, 39, 'Telephone Operator');

INSERT INTO staff\_list VALUES (000014, 53, 'Rider');

INSERT INTO staff\_list VALUES (000014, 37, 'Chef');

INSERT INTO staff\_list VALUES (000015, 22, 'Telephone Operator');

INSERT INTO staff\_list VALUES (000015, 45, 'Rider');

INSERT INTO staff\_list VALUES (000015, 21, 'Chef');

INSERT INTO staff\_list VALUES (000016, 1, 'Telephone Operator');

INSERT INTO staff\_list VALUES (000016, 41, 'Rider');

INSERT INTO staff\_list VALUES (000016, 6, 'Chef');

INSERT INTO staff\_list VALUES (000017, 12, 'Telephone Operator');

INSERT INTO staff\_list VALUES (000017, 43, 'Rider');

INSERT INTO staff\_list VALUES (000017, 11, 'Chef');

INSERT INTO staff\_list VALUES (000018, 16, 'Waiter');

INSERT INTO staff\_list VALUES (000018, 14, 'Chef');

INSERT INTO staff\_list VALUES (000019, 8, 'Waiter');

INSERT INTO staff\_list VALUES (000019, 14, 'Chef');

INSERT INTO staff\_list VALUES (000020, 28, 'Telephone Operator');

INSERT INTO staff\_list VALUES (000020, 47, 'Rider');

INSERT INTO staff\_list VALUES (000020, 27, 'Chef');

INSERT INTO staff\_list VALUES (000021, 26, 'Telephone Operator');

INSERT INTO staff\_list VALUES (000021, 49, 'Rider');

INSERT INTO staff\_list VALUES (000021, 30, 'Chef');

INSERT INTO staff\_list VALUES (000022, 29, 'Waiter');

INSERT INTO staff\_list VALUES (000022, 31, 'Chef');

INSERT INTO staff\_list VALUES (000023, 32, 'Telephone Operator');

INSERT INTO staff\_list VALUES (000023, 51, 'Rider');

INSERT INTO staff\_list VALUES (000023, 34, 'Chef');

INSERT INTO staff\_list VALUES (000024, 35, 'Waiter');

INSERT INTO staff\_list VALUES (000024, 34, 'Chef');

INSERT INTO staff\_list VALUES (000025, 39, 'Waiter');

INSERT INTO staff\_list VALUES (000025, 36, 'Chef');

INSERT INTO staff\_list VALUES (000026, 39, 'Waiter');

INSERT INTO staff\_list VALUES (000026, 37, 'Chef');

CREATE TABLE vehicle (

veh\_num VARCHAR2(15) PRIMARY KEY,

outlet\_num NUMBER(2) NOT NULL,

veh\_product VARCHAR2(50) NOT NULL,

veh\_type VARCHAR2(10) NOT NULL,

veh\_dop DATE NOT NULL,

veh\_lchecked DATE,

veh\_mileage NUMBER(6) NOT NULL,

FOREIGN KEY (outlet\_num) REFERENCES outlet(outlet\_num),

CONSTRAINT check\_veh\_mileage CHECK (veh\_mileage > 0),

CONSTRAINT AK\_vehicle UNIQUE (veh\_mileage)

);

INSERT INTO vehicle VALUES ('WAB123', 01, 'Honda Jazz', 'Car', TO\_DATE('01/01/2023', 'DD/MM/YYYY'), TO\_DATE('01/07/2023', 'DD/MM/YYYY'), 51023);

INSERT INTO vehicle VALUES ('XYZ456', 02, 'Toyota Vios', 'Car', TO\_DATE('15/03/2023', 'DD/MM/YYYY'), TO\_DATE('02/07/2023', 'DD/MM/YYYY'), 75410);

INSERT INTO vehicle VALUES ('DEF789', 03, 'Perodua Myvi', 'Car', TO\_DATE('10/06/2022', 'DD/MM/YYYY'), TO\_DATE('05/06/2023', 'DD/MM/YYYY'), 25521);

INSERT INTO vehicle VALUES ('GHI012', 04, 'Proton Saga', 'Car', TO\_DATE('25/09/2022', 'DD/MM/YYYY'), TO\_DATE('15/05/2023', 'DD/MM/YYYY'), 35238);

INSERT INTO vehicle VALUES ('JKL345', 05, 'Nissan Almera', 'Car', TO\_DATE('03/04/2023', 'DD/MM/YYYY'), TO\_DATE('21/06/2023', 'DD/MM/YYYY'), 85193);

INSERT INTO vehicle VALUES ('MNO678', 06, 'Kia Picanto', 'Car', TO\_DATE('19/08/2022', 'DD/MM/YYYY'), TO\_DATE('16/05/2023', 'DD/MM/YYYY'), 15580);

INSERT INTO vehicle VALUES ('PQR901', 07, 'Hyundai i10', 'Car', TO\_DATE('07/11/2022', 'DD/MM/YYYY'), TO\_DATE('27/04/2023', 'DD/MM/YYYY'), 95435);

INSERT INTO vehicle VALUES ('STU234', 02, 'Mazda2', 'Car', TO\_DATE('12/02/2023', 'DD/MM/YYYY'), TO\_DATE('14/07/2023', 'DD/MM/YYYY'), 60765);

INSERT INTO vehicle VALUES ('VWX567', 03, 'Suzuki Swift', 'Car', TO\_DATE('30/10/2022', 'DD/MM/YYYY'), TO\_DATE('29/04/2023', 'DD/MM/YYYY'), 20507);

INSERT INTO vehicle VALUES ('YZA890', 01, 'Renault Kwid', 'Car', TO\_DATE('22/07/2022', 'DD/MM/YYYY'), TO\_DATE('11/02/2023', 'DD/MM/YYYY'), 72753);

INSERT INTO vehicle VALUES ('BCD123', 04, 'Honda CBR150R', 'Motor', TO\_DATE('14/05/2022', 'DD/MM/YYYY'), TO\_DATE('06/05/2023', 'DD/MM/YYYY'), 44444);

INSERT INTO vehicle VALUES ('EFG456', 05, 'Yamaha MT-15', 'Motor', TO\_DATE('28/02/2022', 'DD/MM/YYYY'), TO\_DATE('12/04/2023', 'DD/MM/YYYY'), 55016);

INSERT INTO vehicle VALUES ('HIJ789', 06, 'Kawasaki Ninja 250', 'Motor', TO\_DATE('06/09/2022', 'DD/MM/YYYY'), TO\_DATE('18/03/2023', 'DD/MM/YYYY'), 30735);

INSERT INTO vehicle VALUES ('KLM012', 07, 'Suzuki GSX-S150', 'Motor', TO\_DATE('11/11/2022', 'DD/MM/YYYY'), TO\_DATE('23/01/2023', 'DD/MM/YYYY'), 70634);

INSERT INTO vehicle VALUES ('NOP345', 03, 'KTM RC 200', 'Motor', TO\_DATE('19/04/2022', 'DD/MM/YYYY'), TO\_DATE('02/02/2023', 'DD/MM/YYYY'), 67535);

INSERT INTO vehicle VALUES ('QRS678', 01, 'SYM VF3i', 'Motor', TO\_DATE('09/03/2023', 'DD/MM/YYYY'), TO\_DATE('28/03/2023', 'DD/MM/YYYY'), 15265);

INSERT INTO vehicle VALUES ('TUV901', 02, 'Honda RS150R', 'Motor', TO\_DATE('15/08/2022', 'DD/MM/YYYY'), TO\_DATE('07/06/2023', 'DD/MM/YYYY'), 82667);

INSERT INTO vehicle VALUES ('WXY234', 04, 'Yamaha NMax', 'Motor', TO\_DATE('02/05/2022', 'DD/MM/YYYY'), TO\_DATE('18/03/2023', 'DD/MM/YYYY'), 102039);

INSERT INTO vehicle VALUES ('ZAB567', 05, 'Perodua Alza', 'Van', TO\_DATE('18/03/2023', 'DD/MM/YYYY'), TO\_DATE('03/05/2023', 'DD/MM/YYYY'), 40242);

INSERT INTO vehicle VALUES ('BCD890', 06, 'Toyota Avanza', 'Van', TO\_DATE('25/06/2022', 'DD/MM/YYYY'), TO\_DATE('21/02/2023', 'DD/MM/YYYY'), 91544);

INSERT INTO vehicle VALUES ('EFG123', 07, 'Nissan NV200', 'Van', TO\_DATE('09/03/2023', 'DD/MM/YYYY'), TO\_DATE('06/04/2023', 'DD/MM/YYYY'), 60923);

CREATE TABLE stock (

stock\_num NUMBER(6) PRIMARY KEY,

stock\_name VARCHAR2(50) NOT NULL,

stock\_category VARCHAR2(25) NOT NULL,

CONSTRAINT AK\_stock UNIQUE (stock\_name)

);

INSERT INTO stock VALUES (1, 'Garlic', 'Vegetables');

INSERT INTO stock VALUES (2, 'Mozzarella Cheese', 'Dairy');

INSERT INTO stock VALUES (3, 'Pepperoni', 'Meat');

INSERT INTO stock VALUES (4, 'Tomato Sauce', 'Sauces');

INSERT INTO stock VALUES (5, 'Green Peppers', 'Vegetables');

INSERT INTO stock VALUES (6, 'Sausage', 'Meat');

INSERT INTO stock VALUES (7, 'Mushrooms', 'Vegetables');

INSERT INTO stock VALUES (8, 'Black Olives', 'Vegetables');

INSERT INTO stock VALUES (9, 'Anchovies', 'Seafood');

INSERT INTO stock VALUES (10, 'Onions', 'Vegetables');

INSERT INTO stock VALUES (11, 'Basil', 'Herbs');

INSERT INTO stock VALUES (12, 'Cheddar Cheese', 'Dairy');

INSERT INTO stock VALUES (13, 'Pineapple', 'Fruits');

INSERT INTO stock VALUES (14, 'Ham', 'Meat');

INSERT INTO stock VALUES (15, 'Spinach', 'Vegetables');

INSERT INTO stock VALUES (16, 'Oregano', 'Herbs');

INSERT INTO stock VALUES (17, 'Artichoke Hearts', 'Vegetables');

INSERT INTO stock VALUES (18, 'Parmesan Cheese', 'Dairy');

INSERT INTO stock VALUES (19, 'Red Pepper Flakes', 'Spices');

INSERT INTO stock VALUES (20, 'Fresh Basil Leaves', 'Herbs');

CREATE TABLE stock\_list (

CONSTRAINT PK\_stock\_list PRIMARY KEY (stock\_num, outlet\_num),

stock\_num NUMBER(6) NOT NULL,

outlet\_num NUMBER(2) NOT NULL,

stock\_quantity NUMBER(4) NOT NULL,

stock\_manfdate DATE,

stock\_expdate DATE NOT NULL,

FOREIGN KEY (stock\_num) REFERENCES stock(stock\_num),

FOREIGN KEY (outlet\_num) REFERENCES outlet(outlet\_num),

CONSTRAINT check\_stock\_quantity CHECK (stock\_quantity >=0)

);

/\*

In a pizza restaurant, efficient management of stock condition and expiration dates is crucial. To optimise the

daily stock checking process and promptly remove expired items from inventory, an index is implemented. This index

enhances the retrieval of stock information based on expiration dates, allowing the restaurant to maintain accurate stock

records and promptly take actions to ensure the freshness and quality of stocks.

\*/

CREATE INDEX idx\_stock\_expdate ON stock\_list(stock\_expdate);

INSERT INTO stock\_list VALUES (1, 01, 13, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (1, 02, 23, TO\_DATE('12-07-2023', 'DD-MM-YYYY'), TO\_DATE('18-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (1, 03, 25, TO\_DATE('14-07-2023', 'DD-MM-YYYY'), TO\_DATE('20-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (1, 04, 13, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (1, 05, 22, TO\_DATE('12-07-2023', 'DD-MM-YYYY'), TO\_DATE('18-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (1, 06, 21, TO\_DATE('14-07-2023', 'DD-MM-YYYY'), TO\_DATE('20-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (1, 07, 25, TO\_DATE('15-07-2023', 'DD-MM-YYYY'), TO\_DATE('21-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (2, 01, 17, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('20-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (2, 02, 12, TO\_DATE('12-07-2023', 'DD-MM-YYYY'), TO\_DATE('22-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (2, 03, 27, TO\_DATE('14-07-2023', 'DD-MM-YYYY'), TO\_DATE('24-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (2, 04, 17, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('20-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (2, 05, 13, TO\_DATE('13-07-2023', 'DD-MM-YYYY'), TO\_DATE('23-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (2, 06, 24, TO\_DATE('14-07-2023', 'DD-MM-YYYY'), TO\_DATE('24-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (2, 07, 28, TO\_DATE('15-07-2023', 'DD-MM-YYYY'), TO\_DATE('25-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (3, 01, 25, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('25-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (3, 02, 15, TO\_DATE('12-07-2023', 'DD-MM-YYYY'), TO\_DATE('27-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (3, 03, 19, TO\_DATE('14-07-2023', 'DD-MM-YYYY'), TO\_DATE('29-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (3, 04, 25, TO\_DATE('11-07-2023', 'DD-MM-YYYY'), TO\_DATE('26-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (3, 05, 15, TO\_DATE('13-07-2023', 'DD-MM-YYYY'), TO\_DATE('28-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (3, 06, 19, TO\_DATE('14-07-2023', 'DD-MM-YYYY'), TO\_DATE('29-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (3, 07, 18, TO\_DATE('14-07-2023', 'DD-MM-YYYY'), TO\_DATE('29-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (4, 01, 20, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('20-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (4, 02, 29, TO\_DATE('12-07-2023', 'DD-MM-YYYY'), TO\_DATE('22-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (4, 03, 10, TO\_DATE('14-07-2023', 'DD-MM-YYYY'), TO\_DATE('24-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (4, 04, 21, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('20-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (4, 05, 27, TO\_DATE('14-07-2023', 'DD-MM-YYYY'), TO\_DATE('24-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (4, 06, 13, TO\_DATE('17-07-2023', 'DD-MM-YYYY'), TO\_DATE('27-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (4, 07, 22, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('20-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (5, 01, 24, TO\_DATE('09-07-2023', 'DD-MM-YYYY'), TO\_DATE('22-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (5, 02, 25, TO\_DATE('12-07-2023', 'DD-MM-YYYY'), TO\_DATE('25-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (5, 03, 22, TO\_DATE('14-07-2023', 'DD-MM-YYYY'), TO\_DATE('27-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (5, 04, 24, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('23-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (5, 05, 21, TO\_DATE('12-07-2023', 'DD-MM-YYYY'), TO\_DATE('25-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (5, 06, 25, TO\_DATE('15-07-2023', 'DD-MM-YYYY'), TO\_DATE('28-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (5, 07, 20, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('23-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (6, 01, 19, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('18-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (6, 02, 19, TO\_DATE('11-07-2023', 'DD-MM-YYYY'), TO\_DATE('19-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (6, 03, 23, TO\_DATE('14-07-2023', 'DD-MM-YYYY'), TO\_DATE('22-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (6, 04, 17, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('18-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (6, 05, 16, TO\_DATE('12-07-2023', 'DD-MM-YYYY'), TO\_DATE('20-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (6, 06, 23, TO\_DATE('15-07-2023', 'DD-MM-YYYY'), TO\_DATE('23-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (6, 07, 15, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('18-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (7, 01, 16, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (7, 02, 11, TO\_DATE('11-07-2023', 'DD-MM-YYYY'), TO\_DATE('17-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (7, 03, 24, TO\_DATE('14-07-2023', 'DD-MM-YYYY'), TO\_DATE('20-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (7, 04, 16, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (7, 05, 12, TO\_DATE('13-07-2023', 'DD-MM-YYYY'), TO\_DATE('19-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (7, 06, 23, TO\_DATE('14-07-2023', 'DD-MM-YYYY'), TO\_DATE('20-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (7, 07, 16, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (8, 01, 23, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (8, 02, 20, TO\_DATE('12-07-2023', 'DD-MM-YYYY'), TO\_DATE('18-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (8, 03, 23, TO\_DATE('14-07-2023', 'DD-MM-YYYY'), TO\_DATE('20-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (8, 04, 23, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (8, 05, 19, TO\_DATE('11-07-2023', 'DD-MM-YYYY'), TO\_DATE('17-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (8, 06, 24, TO\_DATE('14-07-2023', 'DD-MM-YYYY'), TO\_DATE('20-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (8, 07, 23, TO\_DATE('15-07-2023', 'DD-MM-YYYY'), TO\_DATE('21-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (9, 01, 18, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (9, 02, 17, TO\_DATE('12-07-2023', 'DD-MM-YYYY'), TO\_DATE('18-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (9, 03, 13, TO\_DATE('14-07-2023', 'DD-MM-YYYY'), TO\_DATE('20-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (9, 04, 18, TO\_DATE('11-07-2023', 'DD-MM-YYYY'), TO\_DATE('17-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (9, 05, 15, TO\_DATE('13-07-2023', 'DD-MM-YYYY'), TO\_DATE('19-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (9, 06, 14, TO\_DATE('15-07-2023', 'DD-MM-YYYY'), TO\_DATE('21-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (9, 07, 19, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (10, 01, 16, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (10, 02, 15, TO\_DATE('12-07-2023', 'DD-MM-YYYY'), TO\_DATE('18-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (10, 03, 14, TO\_DATE('14-07-2023', 'DD-MM-YYYY'), TO\_DATE('20-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (10, 04, 17, TO\_DATE('11-07-2023', 'DD-MM-YYYY'), TO\_DATE('17-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (10, 05, 12, TO\_DATE('13-07-2023', 'DD-MM-YYYY'), TO\_DATE('19-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (10, 06, 14, TO\_DATE('16-07-2023', 'DD-MM-YYYY'), TO\_DATE('22-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (10, 07, 15, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

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INSERT INTO stock\_list VALUES (11, 03, 28, TO\_DATE('14-07-2023', 'DD-MM-YYYY'), TO\_DATE('20-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (11, 04, 31, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (11, 05, 21, TO\_DATE('13-07-2023', 'DD-MM-YYYY'), TO\_DATE('19-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (11, 06, 27, TO\_DATE('14-07-2023', 'DD-MM-YYYY'), TO\_DATE('20-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (11, 07, 32, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (12, 01, 21, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (12, 02, 20, TO\_DATE('12-07-2023', 'DD-MM-YYYY'), TO\_DATE('18-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (12, 03, 21, TO\_DATE('13-07-2023', 'DD-MM-YYYY'), TO\_DATE('19-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (12, 04, 20, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (12, 05, 19, TO\_DATE('15-07-2023', 'DD-MM-YYYY'), TO\_DATE('21-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (12, 06, 22, TO\_DATE('14-07-2023', 'DD-MM-YYYY'), TO\_DATE('20-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (12, 07, 21, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (13, 01, 19, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (13, 02, 11, TO\_DATE('11-07-2023', 'DD-MM-YYYY'), TO\_DATE('17-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (13, 03, 12, TO\_DATE('14-07-2023', 'DD-MM-YYYY'), TO\_DATE('20-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (13, 04, 17, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (13, 05, 14, TO\_DATE('12-07-2023', 'DD-MM-YYYY'), TO\_DATE('18-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (13, 06, 16, TO\_DATE('13-07-2023', 'DD-MM-YYYY'), TO\_DATE('19-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (13, 07, 19, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (14, 01, 24, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (14, 02, 23, TO\_DATE('13-07-2023', 'DD-MM-YYYY'), TO\_DATE('19-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (14, 03, 21, TO\_DATE('14-07-2023', 'DD-MM-YYYY'), TO\_DATE('20-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (14, 04, 25, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (14, 05, 23, TO\_DATE('11-07-2023', 'DD-MM-YYYY'), TO\_DATE('17-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (14, 06, 22, TO\_DATE('14-07-2023', 'DD-MM-YYYY'), TO\_DATE('20-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (14, 07, 24, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (15, 01, 19, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (15, 02, 18, TO\_DATE('12-07-2023', 'DD-MM-YYYY'), TO\_DATE('18-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (15, 03, 17, TO\_DATE('14-07-2023', 'DD-MM-YYYY'), TO\_DATE('20-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (15, 04, 19, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (15, 05, 18, TO\_DATE('15-07-2023', 'DD-MM-YYYY'), TO\_DATE('21-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (15, 06, 16, TO\_DATE('13-07-2023', 'DD-MM-YYYY'), TO\_DATE('19-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (15, 07, 20, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (16, 01, 27, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (16, 02, 29, TO\_DATE('11-07-2023', 'DD-MM-YYYY'), TO\_DATE('17-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (16, 03, 28, TO\_DATE('14-07-2023', 'DD-MM-YYYY'), TO\_DATE('20-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (16, 04, 25, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (16, 05, 24, TO\_DATE('12-07-2023', 'DD-MM-YYYY'), TO\_DATE('18-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (16, 06, 22, TO\_DATE('13-07-2023', 'DD-MM-YYYY'), TO\_DATE('19-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (16, 07, 26, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (17, 01, 20, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (17, 02, 22, TO\_DATE('12-07-2023', 'DD-MM-YYYY'), TO\_DATE('18-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (17, 03, 24, TO\_DATE('14-07-2023', 'DD-MM-YYYY'), TO\_DATE('20-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (17, 04, 18, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (17, 05, 19, TO\_DATE('11-07-2023', 'DD-MM-YYYY'), TO\_DATE('17-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (17, 06, 21, TO\_DATE('13-07-2023', 'DD-MM-YYYY'), TO\_DATE('19-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (17, 07, 23, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (18, 01, 29, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (18, 02, 28, TO\_DATE('13-07-2023', 'DD-MM-YYYY'), TO\_DATE('19-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (18, 03, 27, TO\_DATE('14-07-2023', 'DD-MM-YYYY'), TO\_DATE('20-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (18, 04, 26, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (18, 05, 25, TO\_DATE('12-07-2023', 'DD-MM-YYYY'), TO\_DATE('18-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (18, 06, 22, TO\_DATE('13-07-2023', 'DD-MM-YYYY'), TO\_DATE('19-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (18, 07, 20, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (19, 01, 18, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (19, 02, 19, TO\_DATE('12-07-2023', 'DD-MM-YYYY'), TO\_DATE('18-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (19, 03, 21, TO\_DATE('14-07-2023', 'DD-MM-YYYY'), TO\_DATE('20-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (19, 04, 17, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (19, 05, 16, TO\_DATE('11-07-2023', 'DD-MM-YYYY'), TO\_DATE('17-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (19, 06, 20, TO\_DATE('13-07-2023', 'DD-MM-YYYY'), TO\_DATE('19-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (19, 07, 19, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (20, 01, 25, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (20, 02, 28, TO\_DATE('12-07-2023', 'DD-MM-YYYY'), TO\_DATE('18-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (20, 03, 30, TO\_DATE('14-07-2023', 'DD-MM-YYYY'), TO\_DATE('20-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (20, 04, 24, TO\_DATE('10-07-2023', 'DD-MM-YYYY'), TO\_DATE('16-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (20, 05, 23, TO\_DATE('11-07-2023', 'DD-MM-YYYY'), TO\_DATE('17-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (20, 06, 22, TO\_DATE('14-07-2023', 'DD-MM-YYYY'), TO\_DATE('20-07-2023', 'DD-MM-YYYY'));

INSERT INTO stock\_list VALUES (20, 07, 23, TO\_DATE('09-07-2023', 'DD-MM-YYYY'), TO\_DATE('15-07-2023', 'DD-MM-YYYY'));

--create views

CREATE OR REPLACE VIEW staff\_cust\_view AS

SELECT s.staff\_num, s.staff\_fname, s.staff\_lname, o.order\_num, sl.job, cu.cust\_num, cu.cust\_fname || ' ' || cu.cust\_lname AS cust\_name

FROM staff s, staff\_list sl, orders o, customer cu

WHERE s.staff\_num = sl.staff\_num

AND sl.order\_num = o.order\_num

AND o.cust\_num = cu.cust\_num ORDER BY staff\_num;

CREATE OR REPLACE VIEW outlet\_trans\_view AS

SELECT UNIQUE o.outlet\_num, t.trans\_num, od.cust\_num, t.trans\_time, t.trans\_amount

FROM outlet o, orders od, transactions t

WHERE o.outlet\_num = od.outlet\_num

AND od.trans\_num = t.trans\_num

ORDER BY o.outlet\_num;

**Part 4: Query a database (each sub-part carries 4 marks; max of 20 marks)**

QUESTION 1

To enhance customer engagement and retention, the pizza company has implemented a Loyalty Program. Customers can earn points with each purchase, and based on the total amount spent, customer can redeem these points for rewards like free pizzas or exclusive discounts. The program consists of multiple tiers, offering increased benefits as customers accumulate more points, thus encouraging higher spending and repeat visits. In order to maintain the loyalty points, customer must visit the pizza restaurant at a rate for at least once per month. Thus, to identify eligible customers for the Loyalty Program, the company retrieves the transaction history of the customer during their purchase. For example, Ms. Emily Johnson is about to make a transaction, and the company retrieves her one-month transaction history to check if she is eligible for rewards on this purchase.

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SELECT \* FROM outlet\_trans\_view

WHERE MONTHS\_BETWEEN(sysdate, trans\_time) < 1

AND cust\_num IN(

SELECT cust\_num FROM customer

WHERE cust\_lname = 'Johnson'

AND cust\_fname = 'Emily')

QUESTION 2

In celebration of the momentous 1-year anniversary of the 3rd and 4th outlets, the pizza company is delighted to present a limited-time special promotion to its valued customers. Customers who had purchased more than two pizzas at the 3rd and 4th outlets are eligible for an enticing discount on their subsequent orders, exclusively available at these two outlets. To find out the customers who are eligible for this special promotion, the outlet number, customer telephone number, customer name and order quantity are listed. The data should be ordered based on the outlets.

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SELECT outlet.outlet\_num AS "Outlet Number",

cu.cust\_tel AS "Customer Telephone",

(cu.cust\_fname || ' ' || cu.cust\_lname) AS "Customer Name",

SUM(ol.order\_quantity) AS "Order Quantity"

FROM item, order\_line ol, orders, outlet, customer cu

WHERE item.item\_num = ol.item\_num

AND ol.order\_num = orders.order\_num

AND orders.outlet\_num = outlet.outlet\_num

AND orders.cust\_num = cu.cust\_num

AND outlet.outlet\_num IN(3,4) AND item.item\_type = 'Pizza'

GROUP BY outlet.outlet\_num, cu.cust\_tel, cu.cust\_fname, cu.cust\_lname

HAVING SUM(ol.order\_quantity) > 2

ORDER BY outlet.outlet\_num, COUNT(ol.order\_quantity)

QUESTION 3

The pizza company is undertaking a focused product analysis to evaluate the sales performance of products that contain chicken during the entire year of 2023. As part of this analysis, a comprehensive list of all items that contain chicken and were sold in the year 2023 will be compiled. This list will include all items, even if they are not ordered to provide a complete overview. By conducting this specific analysis, the company aims to investigate the performance and popularity of chicken-containing products throughout the entire year of 2023, enabling informed decision-making for future business strategies. The result, which includes all chicken-containing items, should be ordered based on gross sales.

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SELECT item.item\_description, SUM(item.item\_price \* ol.order\_quantity) AS GROSS\_SALES

FROM orders

INNER JOIN order\_line ol ON ol.order\_num = orders.order\_num

RIGHT OUTER JOIN item ON item.item\_num = ol.item\_num

AND TO\_CHAR(orders.order\_time, 'YYYY') = '2023'

WHERE item.item\_description LIKE '%Chicken%'

GROUP BY item.item\_description

ORDER BY SUM(item.item\_price \* ol.order\_quantity)

QUESTION 4

The pizza company is seeking to obtain comprehensive information about its workforce structure to enhance operational efficiency and communication within the organization. In pursuit of this goal, the company aims to examine the identity of the managers overseeing each employee at every outlet. A list of the workforce structure is produced, containing the manager of the employees in each outlet, the employees, and their positions in the company. The data should be ordered based on the outlet number.

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SELECT s.outlet\_num, m.staff\_fname AS manager\_fname, s.staff\_fname, s.staff\_position

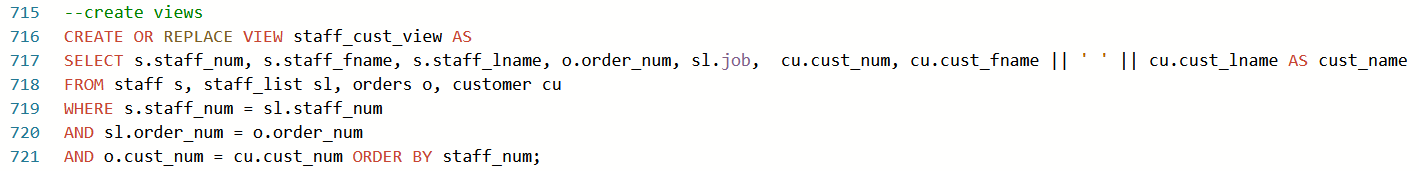
FROM staff m, staff s

WHERE s.manager\_id = m.staff\_num

ORDER BY s.outlet\_num

QUESTION 5

List the staff whose surnames start with 'Ch' and who have served customers with addresses containing 'Jaya'.



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SELECT scv.staff\_num, scv.staff\_fname|| ' ' || scv.staff\_lname AS "Staff Name"

FROM staff\_cust\_view scv, customer cu

WHERE scv.cust\_num = cu.cust\_num

AND (cu.cust\_suburb LIKE '%Jaya%' or cu.cust\_street LIKE '%Jaya%')

AND scv.staff\_lname LIKE 'Ch%'

Part 5: Presentation & Teamwork (20 marks)

~~~~~~~~~~ end of all parts of the final assessment~~~~~~~~~~