PES UNIVERSITY, BANGALORE

Department of Computer Science and Engineering

DBMS

Mini Project

Title of the Project: Petrol Pump Management System

Submitted By:

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V Semester

Section- E

Short Description and Scope of the Project:

Oil and gas (O&G) industry contributes to the economic as one of the most important sectors by taking into advantages as being the most demanding, challenging and exciting engineering and technological advances which interests the engineers at large. As the O&G industry has become financially attractive yet risky to be implemented, it is important to look into the effective way of managing the O&G projects.

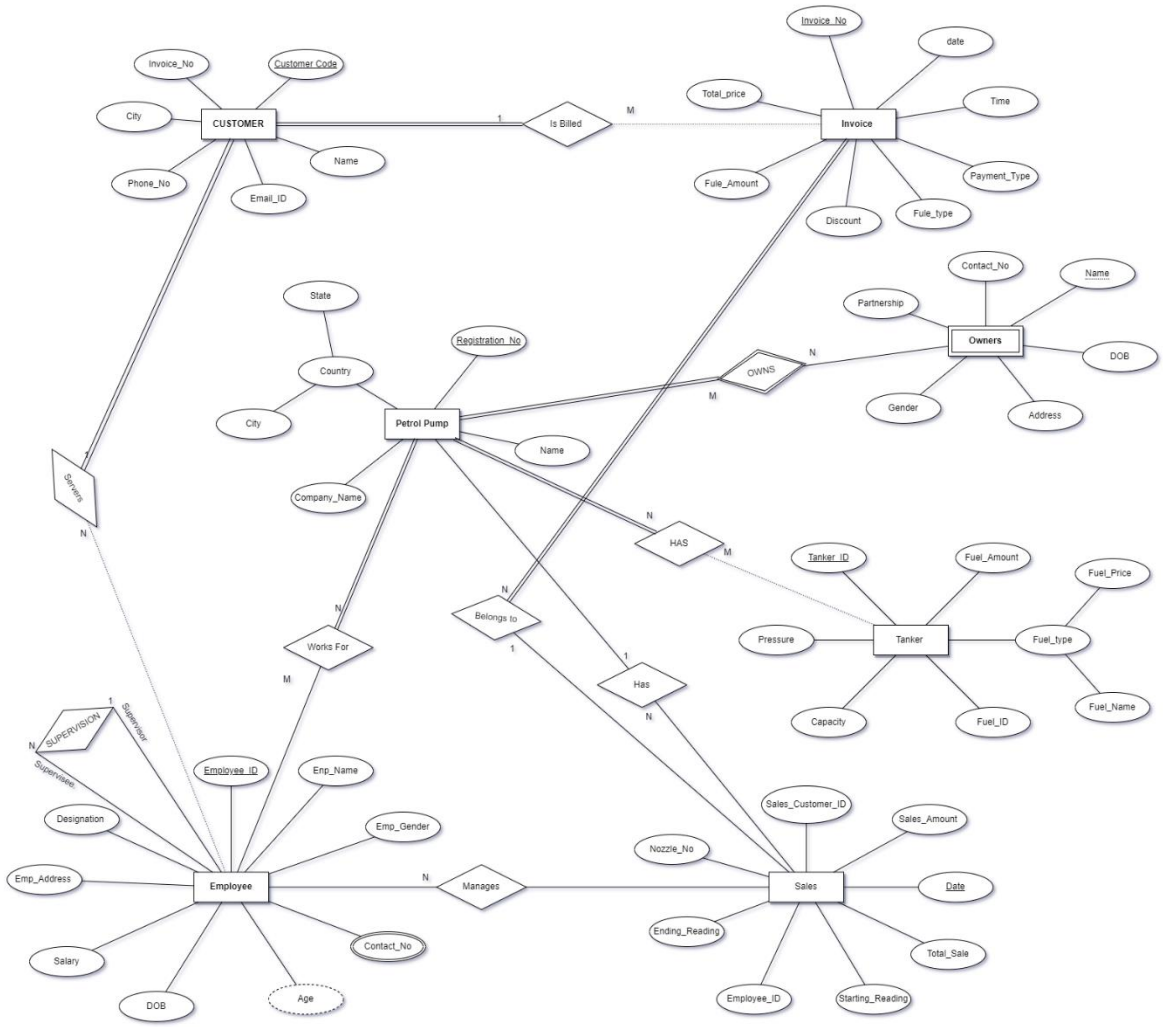
My Project is to maintain petrol pump data which will help Managers to manager their work with ease convenience.

Database management System (DBMS) is a software for creating and managing database. It provides users and programmers with a systematic way to create, retrieve, update and manage data.

This project will maintain data about Petrol Pumps in an area, their owners, Employees details working in that petrol, Customer detail so that a regular customer will get Goodies & Discount, Tanker details as well as Sales of a particular Petrol Pump.

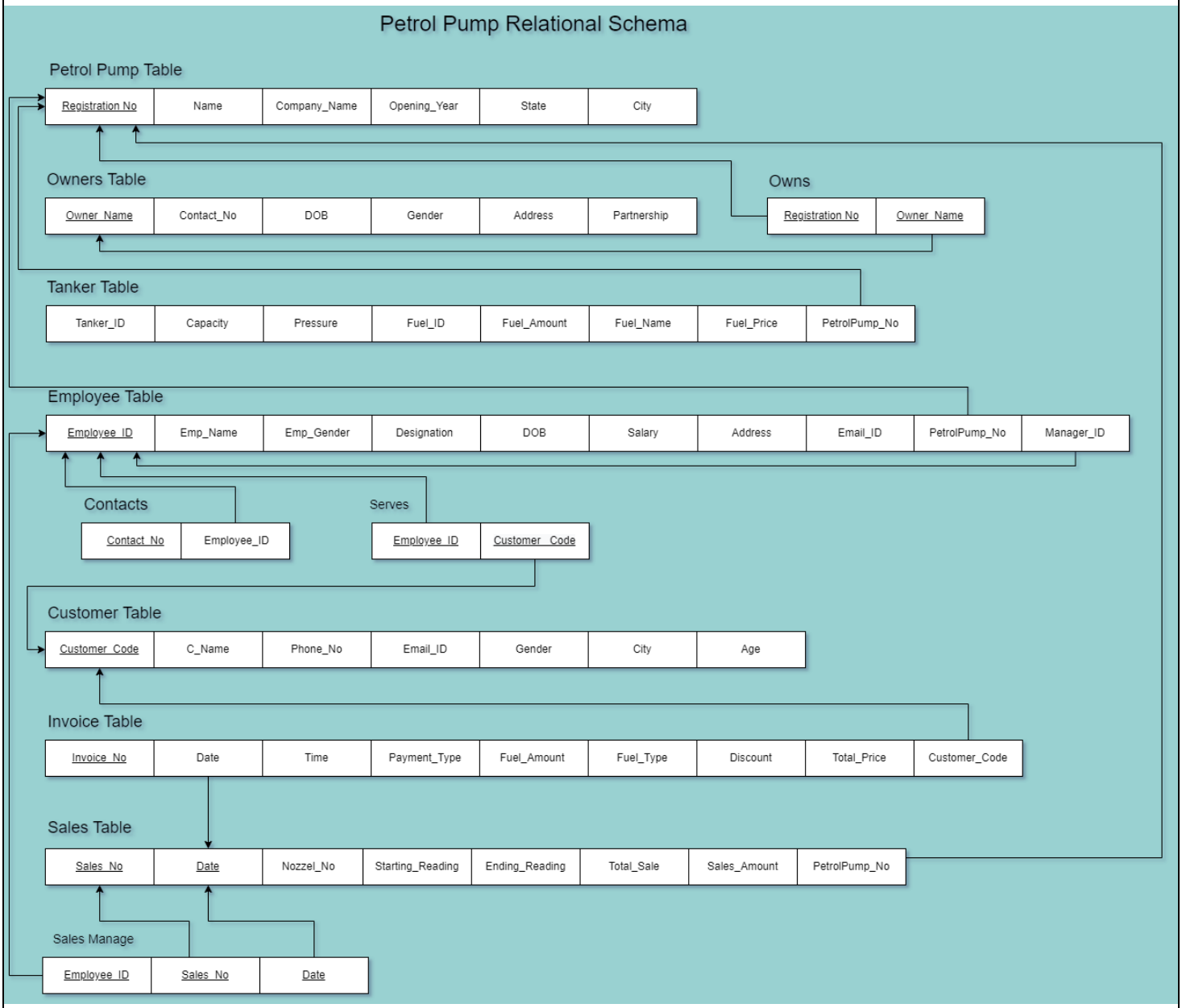
This project uses MYSQL to store data and perform CRUD operations and Some of the famous libraries such as pandas and streamlit library for frontend to make User Interface interactive.

PETROL PUMP MANAGEMENT SYSTEM



ER Diagram:

Relational Schema:



DDL statements:

Building the database & Populating the Database:

```
SET SQL_MODE = "NO_AUTO_VALUE_ON_ZERO";
START TRANSACTION;
SET time_zone = "+00:00";


CREATE TABLE IF NOT EXISTS `PetrolPump`(
   `Registration_No` varchar(10) NOT NULL,
   `Petrolpump_Name` varchar(50) NOT NULL,
   `Company_Name` varchar(30) DEFAULT NULL,
   `Opening_Year` int(5) DEFAULT NULL,
   `State` varchar(30) DEFAULT NULL,
   `City` varchar(40) NOT NULL,
   PRIMARY KEY(`Registration_No`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

INSERT INTO `PetrolPump` (`Registration_No`, `Petrolpump_Name`,`Company_Name`,
`Opening_Year`, `State`, `City`) VALUES
('HPC805103', 'Sumaraj Petroleum', 'Hindustan Petroleum
Corporation',2016,'Bihar','Hisua'),
('BP110054', 'Rajinder Service Station', 'Bharat
Petroleum',2012,'Delhi','CENTRAL DELHI'),
('IOC560008', 'Madhu Enterprises', 'Indian Oil
Corporation',2008,'Karnataka','Banglore'),
('OIL380013', 'Perusahaan Minyak and Gas Bumi', 'Oil India
Limited',2006,'Gujarat','Ahmedabad'),
('RPL673573','Tamarassery Reliance Retail Outlet','Reliance Petroleum
Limited',2013,'Kerala','Thamarasserry');


CREATE TABLE IF NOT EXISTS `Owners`(
   `Owner_Name` varchar(20) NOT NULL,
   `Contact_NO` char(10) NOT NULL,
   `DOB` date DEFAULT NULL,
   `Gender` char DEFAULT NULL,
   `Address` varchar(255) DEFAULT NULL,
   `Partnership` int(5) NOT NULL,
   PRIMARY KEY(`Owner_Name`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

INSERT INTO `Owners` (`Owner_Name`, `Contact_NO`, `DOB`, `Gender`, `Address`,
`Partnership`) VALUES
('Pawan Kumar','9431073500', '1971-01-03', 'M', 'Friends colony
more,Patna,Bihar',35 ),
('Avinash Shankar','8783249500','1973-07-15', 'M', 'Buddha
colony,Patna,Bihar',25),
('Vikash Kumar Tarun', '7486249500', '1975-02-05','M','Tapeshwer Path,Boring
road,Patna,Bihar',45),
```

```
('Nirmal Sethi', '6427894500', '1999-09-11','F','Pritam Nagar, Paldi,
Ahmedabad, Gujarat',70),
('Neerja Bhanot', '5963154800','2000-02-24', 'F', 'Quarters, Sarojini
Nagar,New Delhi',55);


CREATE TABLE IF NOT EXISTS `Tanker`(
   `Tanker_ID` varchar(10) NOT NULL,
   `Capacity` float(10) DEFAULT NULL,
   `pressure` float(10) DEFAULT NULL,
   `Fuel_ID` varchar(10) NOT NULL,
   `Fuel_Amount` float(15) DEFAULT NULL,
   `Fuel_Name` varchar(20) DEFAULT NULL,
   `Fuel_Price` float(5) NOT NULL,
   `Petrolpump_No`varchar(10) DEFAULT NULL,
   PRIMARY KEY(`Tanker_ID`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

INSERT INTO `Tanker` (`Tanker_ID`, `Capacity`, `pressure`,
`Fuel_ID`,`Fuel_Amount`, `Fuel_Name`,  `Fuel_Price`, `Petrolpump_No`) VALUES
('BR6872', 5000,550,'A1234',513.50,'PetrolE10',101.72,'HPC805103'),
('JK2611', 1000,845,'L7363',238.24,'Kerosene',77.03,'OIL380013'),
('MP4928', 5000,1545,'K5363',1200.95,'CNG',99.50,'BP110054'),
('JH7523', 10000,3500,'Z6353',751.89,'Diesel',87.89,'HPC805103'),
('UP9875', 15000,785,'R4743',576.26,'Gasoline91',107.05,'OIL380013');


CREATE TABLE IF NOT EXISTS `Employee`(
   `Employee_ID` varchar(10) NOT NULL,
   `Emp_Name` varchar(30) NOT NULL,
   `Emp_Gender`char DEFAULT NULL,
   `Designation` varchar(10) DEFAULT NULL,
   `DOB` date DEFAULT NULL,
   `Salary` int(20) DEFAULT NULL,
   `Emp_Address` varchar(255) NOT NULL,
   `Email_ID`varchar(100) NOT NULL,
   `Petrolpump_No`varchar(10) DEFAULT NULL,
   `Manager_ID` varchar(10) DEFAULT NULL,
   PRIMARY KEY(`Employee_ID`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

INSERT INTO `Employee` (`Employee_ID`, `Emp_Name`, `Emp_Gender`,
`Designation`, `DOB`, `Salary`, `Emp_Address`, `Email_ID`, `Petrolpump_No`,
`Manager_ID`) VALUES
('FOED452','Sheela Reddy','F','FOOD MANAGEMENT','1989-11-28',45000,'dakbangla
choraha,patna','sheela@gmail.com','HPC805103','MANG957'),
('DRHD746','Hima Ullal','F','COOKING','1995-04-18',25000,'Bikram Road,
Patna','hima@gmail.com','HPC805103','FOED452'),
```

```
('MANG957','Aman kumar','M','MANAGER','1992-01-21',65000,'Boaring road,
patna','Aman@outlook.com','HPC805103','MANG957'),
('FDNG652','Hradha Nayar','F','NOZZEL PERSON','1987-08-09',35000,'Pandit
Bigha, Gaya','hradha@hotmail.com','HPC805103','FDEW353'),
('FDSNG43','Hemant','M','CLEANING','1995-01-23',20000,'Kanvada, Magrol road,
Surat','hemant@gmail.com','OIL380013',NULL),
('SNGED76','Animesh','M','NOZZEL PERSON','1982-08-13',45000,'Industrial
Development Area, Sector 16, Gurugram, Haryana'
,'animesh@gmail.com','OIL380013',NULL),
('FDEW353','Saideepak Reddy','M','NOZZEL PERSON','2000-06-30',40000,'Lodwadih,
Topchanchi, Jharkhand','saideepak@outlook.com','HPC805103','MANG957');


CREATE TABLE IF NOT EXISTS `Customer`(
   `Customer_Code` varchar(10) NOT NULL,
   `C_Name` varchar(30) NOT NULL,
   `Phone_No`char(10) DEFAULT NULL,
   `Email_ID`varchar(100) DEFAULT NULL,
   `Gender`char DEFAULT NULL,
   `City` varchar(50) DEFAULT NULL,
   `Age` int(3) DEFAULT NULL,
   PRIMARY KEY(`Customer_Code`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

INSERT INTO `Customer` (`Customer_Code`, `C_Name`, `Phone_No`, `Email_ID`,
`Gender`, `City`, `Age`) VALUES
('SFG252','Akash','6542589700','akash@gmail.com','M','Bihar', 27),
('GHE785','Praneet','7539514600','praneet@yahoo.com','M','Orissa',59),
('FJD253','Chetan','8426951300','chetan@hotmail.com','M','Bengalore', 24),
('OUI325','Ayush','7618425500','ayush@outlook.com','M','Kota',18),
('CGM235','Vinesh','6794324600','vines@pesu.pes.edu','M','Kolkata',54),
('BFR426','Anamika',9569731800,'anamika@gmai.com','F','Jharkhand',26);


CREATE TABLE IF NOT EXISTS `Invoice`(
   `Invoice_No` varchar(10) NOT NULL,
   `Date` date NOT NULL,
   `Payment_Type` varchar(20) NOT NULL,
   `Fuel_Amount` float(15) DEFAULT NULL,
   `Fuel_Type` varchar(15) DEFAULT NULL,
   `Discount` int(5) DEFAULT NULL,
   `Total_Price` float(10) NOT NULL,
   `Customer_Code` varchar(10) NULL,
   PRIMARY KEY(`Invoice_No`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

INSERT INTO `Invoice` (`Invoice_No`, `Date`, `Payment_Type`, `Fuel_Amount`,
`Fuel_Type`, `Discount`, `Total_Price`, `Customer_Code`) VALUES
('XC34','2022-11-20','Cash',7,'PetrolE10',10,640.83,'BFR426'),
```

```
('NR43','2022-11-20','UPI', 5.4,'Gasoline91',NULL, 578.07,'GHE785'),
('MN34','2020-06-30','Credit Card', 15.8,'Diesel',7.5, 1284.51,'OUI325'),
('FG43','2022-10-27','UPI', 4.9,'Gasoline91',5, 498.32,'SFG252'),
('DS85','2019-08-19','Debit Card', 6.8,'Diesel',NULL, 597.65,'OUI325');


CREATE TABLE IF NOT EXISTS `Sales`(
   `Sales_No` varchar(10) NOT NULL,
   `Date` date NOT NULL,
   `Nozzel_No` int(4) NOT NULL,
   `Starting_Reading` int(7) NOT NULL,
   `Ending_Reading` int(7) NOT NULL,
   `Total_Sales` float(10) NOT NULL,
   `Sales_Amount` float(10) NOT NULL,
   `Petrolpump_No`varchar(10) DEFAULT NULL,
   PRIMARY KEY(`Sales_No`,`Date`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

INSERT INTO `Sales` (`Sales_No`, `Date`, `Nozzel_No`, `Starting_Reading`,
`Ending_Reading`, `Total_Sales`, `Sales_Amount`, `Petrolpump_No`) VALUES
('FGHGE32','2022-11-20', 1, 45687,49782 , 17584.45, 106.52,'HPC805103'),
('MVBER67','2022-11-20', 2, 48325, 53842, 4253.45, 205.5,'OIL380013'),
('IUOSF98','2019-08-19', 2, 12757, 23454, 1254.71, 89.45,'HPC805103'),
('GDZJD24','2019-08-19', 1, 62725,68725 , 5466.45, 125.85,'OIL380013'),
('QWRGH87','2022-11-22', 3, 12758, 19758, 7854.65, 425.25,'HPC805103');


CREATE TABLE IF NOT EXISTS `Owns`(
   `Registration_No` varchar(10) NOT NULL,
   `Owner_Name` varchar(20) NOT NULL,
   PRIMARY KEY(`Registration_No`, `Owner_Name`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

INSERT INTO `Owns` (`Registration_No`,`Owner_Name`) VALUES
('HPC805103','Pawan Kumar'),
('HPC805103','Avinash Shankar'),
('HPC805103','Vikash Kumar Tarun'),
('OIL380013','Nirmal Sethi'),
('OIL380013','Vikash Kumar Tarun'),
('BP110054','Neerja Bhanot'),
('BP110054','Pawan Kumar');




CREATE TABLE IF NOT EXISTS `Contacts`(
   `Employee_ID` varchar(10) NOT NULL,
   `Contact_NO` char(10) NOT NULL,
   PRIMARY KEY(`Employee_ID`, `Contact_NO`)
```

```
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

INSERT INTO `Contacts` (`Employee_ID`, `Contact_NO`) VALUES
('MANG957','6299337300'),
('MANG957','8540074600'),
('FOED452','6256575800'),
('FOED452','9678225400'),
('FDSNG43','8312243800'),
('FDNG652','5249785500');


CREATE TABLE IF NOT EXISTS `Serves`(
   `Employee_ID` varchar(10) NOT NULL,
   `Customer_Code` varchar(10) NOT NULL,
   PRIMARY KEY(`Employee_ID`, `Customer_Code`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

INSERT INTO `Serves` (`Employee_ID`, `Customer_Code`) VALUES
('FDEW353','SFG252'),
('FDEW353','CGM235'),
('FDEW353','BFR426'),
('FDNG652','SFG252'),
('FDNG652','CGM235');

CREATE TABLE IF NOT EXISTS `Sales_Manage`(
   `Employee_ID` varchar(10) NOT NULL,
   `Sales_No` varchar(10) NOT NULL,
   `Date` date NOT NULL,
   PRIMARY KEY(`Employee_ID`, `Sales_No`, `Date`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

INSERT INTO `Sales_Manage`(`Employee_ID`, `Sales_No`, `Date`) VALUES
('FDEW353','FGHGE32','2022-11-20'),
('FDEW353','IUOSF98','2019-08-19'),
('FDNG652','QWRGH87','2022-11-22'),
('SNGED76','GDZJD24','2019-08-19'),
('SNGED76','MVBER67','2022-11-20');

COMMIT;
```

```
| Field           | Type        | Null | Key | Default | Extra |
+-----------------+-------------+------+-----+---------+-------+
| Sales_No        | varchar(10) | NO   | PRI | NULL    |       |
| Date            | date        | NO   | PRI | NULL    |       |
| Nozzel_No       | int(4)      | NO   |     | NULL    |       |
| Starting_Reading| int(7)      | NO   |     | NULL    |       |
| Ending_Reading  | int(7)      | NO   |     | NULL    |       |
| Total_Sales     | float       | NO   |     | NULL    |       |
| Sales_Amount    | float       | NO   |     | NULL    |       |
| Petrolpump_No   | varchar(10) | YES  |     | NULL    |       |
+-----------------+-------------+------+-----+---------+-------+
8 rows in set (0.018 sec)

MariaDB [petrolpump_management]> desc petrolpump
    -> ;
+-----------------+-------------+------+-----+---------+-------+
| Field           | Type        | Null | Key | Default | Extra |
+-----------------+-------------+------+-----+---------+-------+
| Registration_No | varchar(10) | NO   | PRI | NULL    |       |
| Petrolpump_Name | varchar(50) | NO   |     | NULL    |       |
| Company_Name    | varchar(30) | YES  |     | NULL    |       |
| Opening_Year    | int(5)      | YES  |     | NULL    |       |
| State           | varchar(30) | YES  |     | NULL    |       |
| City            | varchar(40) | NO   |     | NULL    |       |
+-----------------+-------------+------+-----+---------+-------+
6 rows in set (0.014 sec)

MariaDB [petrolpump_management]> desc tanker;
+---------------+-------------+------+-----+---------+-------+
| Field         | Type        | Null | Key | Default | Extra |
+---------------+-------------+------+-----+---------+-------+
| Tanker_ID     | varchar(10) | NO   | PRI | NULL    |       |
| Capacity      | float       | YES  |     | NULL    |       |
| pressure      | float       | YES  |     | NULL    |       |
| Fuel_ID       | varchar(10) | NO   |     | NULL    |       |
| Fuel_Amount   | float       | YES  |     | NULL    |       |
| Fuel_Name     | varchar(20) | YES  |     | NULL    |       |
| Fuel_Price    | float       | NO   |     | NULL    |       |
| Petrolpump_No | varchar(10) | YES  |     | NULL    |       |
+---------------+-------------+------+-----+---------+-------+
```

```
MariaDB [petrolpump_management]> SET SQL_MODE = "NO_AUTO_VALUE_ON_ZERO";
Query OK, 0 rows affected (0.001 sec)

MariaDB [petrolpump_management]> START TRANSACTION;
Query OK, 0 rows affected (0.000 sec)

MariaDB [petrolpump_management]> SET time_zone = "+00:00";
Query OK, 0 rows affected (0.000 sec)

MariaDB [petrolpump_management]>
MariaDB [petrolpump_management]> ALTER TABLE `Tanker`
    ->   ADD KEY `Petrolpump_No` (`Petrolpump_No`);
Query OK, 0 rows affected (0.035 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [petrolpump_management]>
MariaDB [petrolpump_management]> ALTER TABLE `Employee`
    ->   ADD KEY `Petrolpump_No` (`Petrolpump_No`),
    ->   ADD KEY `Manager_ID` (`Manager_ID`);
Query OK, 0 rows affected (0.053 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [petrolpump_management]>
MariaDB [petrolpump_management]> ALTER TABLE `Invoice`
    ->   ADD KEY `Date` (`Date`),
    ->   ADD KEY  `Customer_Code` (`Customer_Code`);
ERROR 1146 (42S02): Table 'petrolpump_management.invoice' doesn't exist
MariaDB [petrolpump_management]>
MariaDB [petrolpump_management]> ALTER TABLE `Sales`
    ->   ADD KEY `Petrolpump_No` (`Petrolpump_No`);
Query OK, 0 rows affected (0.027 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [petrolpump_management]>
MariaDB [petrolpump_management]> COMMIT;
Query OK, 0 rows affected (0.000 sec)

MariaDB [petrolpump_management]>
```

```
MariaDB [Petrolpump_management]> INSERT INTO Invoice (Invoice_No, Date, Time, Payment_Type, Fuel_Amount, Fuel_Type, Discount, Total_Price, Customer_Code) VALUES
    -> ('NR43','2021-10-12','14:24:34','UPI', 5.4,'Gasoline91',NULL, 578.07,'GHE785'),
    -> ('MN34','2020-06-30','21:26:09','Credit Card', 15.8,'Diesel',7.5, 1284.51,'OUI325'),
    -> ('FG43','2022-10-27','16:06:34','UPI', 4.9,'Gasoline91',5, 498.32,'SFG252'),
    -> ('DS85','2019-08-19','09:38:49','Debit Card', 6.8,'Diesel',NULL, 597.65,'OUI325');
Query OK, 4 rows affected (0.009 sec)
Records: 4  Duplicates: 0  Warnings: 0

MariaDB [Petrolpump_management]> select * from Invoice;
+------------+------------+----------+--------------+-------------+-----------+----------+-------------+---------------+
| Invoice_No | Date       | Time     | Payment_Type | Fuel_Amount | Fuel_Type | Discount | Total_Price | Customer_Code |
+------------+------------+----------+--------------+-------------+-----------+----------+-------------+---------------+
| DS85       | 2019-08-19 | 09:38:49 | Debit Card   |         6.8 | Diesel    |     NULL |      597.65 | OUI325        |
| FG43       | 2022-10-27 | 16:06:34 | UPI          |         4.9 | Gasoline91 |        5 |      498.32 | SFG252        |
| MN34       | 2020-06-30 | 21:26:09 | Credit Card  |        15.8 | Diesel    |        8 |     1284.51 | OUI325        |
| NR43       | 2021-10-12 | 14:24:34 | UPI          |         5.4 | Gasoline91 |     NULL |      578.07 | GHE785        |
| XC34       | 2022-11-20 | 22:55:10 | Cash         |           7 | PetrolE10 |       10 |      640.83 | BFR426        |
+------------+------------+----------+--------------+-------------+-----------+----------+-------------+---------------+
5 rows in set (0.001 sec)

MariaDB [Petrolpump_management]> INSERT INTO `Sales` (`Sales_No`, `Date`, `Nozzel_No`, `Starting_Reading`, `Ending_Reading`, `Total_Sales`, `Sales_Amount`, `Petrolpump_No`) VALUES
    -> ('FGHGE32','2022-11-20', 1, 45687,49782 , 17584.45, 106.52,'HPC805103'),
    -> ('MVBER67','2022-11-20', 2, 48325, 53842, 4253.45, 205.5,'OIL380013'),
    -> ('IUOSF98','2019-08-19', 2, 12757, 23454, 1254.71, 89.45,'HPC805103'),
    -> ('GDZJD24','2019-08-19', 1, 62725,68725 , 5466.45, 125.85,'OIL380013'),
    -> ('QWRGH87','2022-11-22', 3, 12758, 19758, 7854.65, 425.25,'HPC805103');
Query OK, 5 rows affected (0.010 sec)
Records: 5  Duplicates: 0  Warnings: 0

MariaDB [Petrolpump_management]> select * from Sales;
+----------+------------+-----------+-----------------+-----------------+-------------+--------------+---------------+
| Sales_No | Date       | Nozzel_No | Starting_Reading | Ending_Reading | Total_Sales | Sales_Amount | Petrolpump_No |
+----------+------------+-----------+-----------------+-----------------+-------------+--------------+---------------+
| FGHGE32  | 2022-11-20 |         1 |           45687 |           49782 |     17584.4 |       106.52 | HPC805103     |
| GDZJD24  | 2019-08-19 |         1 |           62725 |           68725 |     5466.45 |       125.85 | OIL380013     |
| IUOSF98  | 2019-08-19 |         2 |           12757 |           23454 |     1254.71 |        89.45 | HPC805103     |
| MVBER67  | 2022-11-20 |         2 |           48325 |           53842 |     4253.45 |        205.5 | OIL380013     |
| QWRGH87  | 2022-11-22 |         3 |           12758 |           19758 |     7854.65 |       425.25 | HPC805103     |
+----------+------------+-----------+-----------------+-----------------+-------------+--------------+---------------+
```

Join Queries

Showcase at least 4 join queries

Write the query in English Language, Show the equivalent SQL statement and also a screenshot of the query and the results

Q1) Find All the Registration No of Petrol pump Where Employee Works

Querry: SELECT PetrolPump.Registration_No FROM PetrolPump INNER JOIN Employee ON PetrolPump.Registration_No = Employee.Petrolpump_No;

```
MariaDB [petrolpump_management]> SELECT PetrolPump.Registration_No FROM PetrolPump INNER JOIN Employee ON
PetrolPump.Registration_No = Employee.Petrolpump_No;
+-----------------+
| Registration_No |
+-----------------+
| abc             |
| HPC805103       |
| HPC805103       |
| HPC805103       |
| HPC805103       |
| HPC805103       |
| OIL380013       |
| OIL380013       |
+-----------------+
8 rows in set (0.001 sec)

MariaDB [petrolpump_management]>
```

Q2)

Querry: SELECT Petrolpump.Registration_No FROM Petrolpump left join Employee on Petrolpump.Registration_No = Employee.Petrolpump_No WHERE Employee.Petrolpump_No is NULL;

```
MariaDB [petrolpump_management]> SELECT Petrolpump.Registration_No FROM Petrolpump left join Employee on
Petrolpump.Registration_No = Employee.Petrolpump_No WHERE Employee.Petrolpump_No is NULL ;
+-----------------+
| Registration_No |
+-----------------+
| BP110054        |
| IOC560008       |
| RPL673573       |
| sfdg            |
+-----------------+
4 rows in set (0.002 sec)
```

Q3)

Querry: SELECT PetrolPump.Registration_No FROM PetrolPump LEFT JOIN Employee ON PetrolPump.Registration_No = Employee.Petrolpump_No;

```
MariaDB [petrolpump_management]> SELECT PetrolPump.Registration_No FROM PetrolPump LEFT JOIN Employee ON PetrolPump.Registration_No = Employee.Petrolpump_No;
+-----------------+
| Registration_No |
+-----------------+
| abc             |
| BP110054        |
| HPC805103       |
| HPC805103       |
| HPC805103       |
| HPC805103       |
| HPC805103       |
| IOC560008       |
| OIL380013       |
| OIL380013       |
| RPL673573       |
| sfdg            |
+-----------------+
12 rows in set (0.000 sec)

MariaDB [petrolpump_management]>
```

Q4)

Querry: SELECT Invoice.Invoice_No ,Invoice.Date ,Invoice.Payment_Type, Customer.C_Name , Customer.Phone_No FROM Invoice RIGHT OUTER JOIN Customer ON Customer.Customer_Code = Invoice.Customer_Code;

```
MariaDB [petrolpump_management]> SELECT Invoice.Invoice_No ,Invoice.Date ,Invoice.Payment_Type, Customer.C_Name ,
 Customer.Phone_No FROM Invoice RIGHT OUTER JOIN Customer ON Customer.Customer_Code = Invoice.Customer_Code;
+------------+------------+--------------+---------+------------+
| Invoice_No | Date       | Payment_Type | C_Name  | Phone_No   |
+------------+------------+--------------+---------+------------+
| XC34       | 2022-11-20 | Cash         | Anamika | 9569731800 |
| NULL       | NULL       | NULL         | who     | 2514866186 |
| NULL       | NULL       | NULL         | Vinesh  | 6794324600 |
| NULL       | NULL       | NULL         | Chetan  | 8426951300 |
| NR43       | 2021-10-12 | UPI          | Praneet | 7539514600 |
| DS85       | 2019-08-19 | Debit Card   | Ayush   | 7618425500 |
| dxgfgf     | 2022-11-01 | Credit_Card  | Ayush   | 7618425500 |
| MN34       | 2020-06-30 | Credit Card  | Ayush   | 7618425500 |
| FG43       | 2022-10-27 | UPI          | Akash   | 6542589700 |
+------------+------------+--------------+---------+------------+
9 rows in set (0.001 sec)

MariaDB [petrolpump_management]>
```

Aggregate Functions

Showcase at least 4 Aggregate function queries

Write the query in English Language, Show the equivalent SQL statement and also a screenshot of the query and the results

Q1) Find the Average age of the Male customers.

Query: SELECT avg(Age) from Customer where Gender='M';

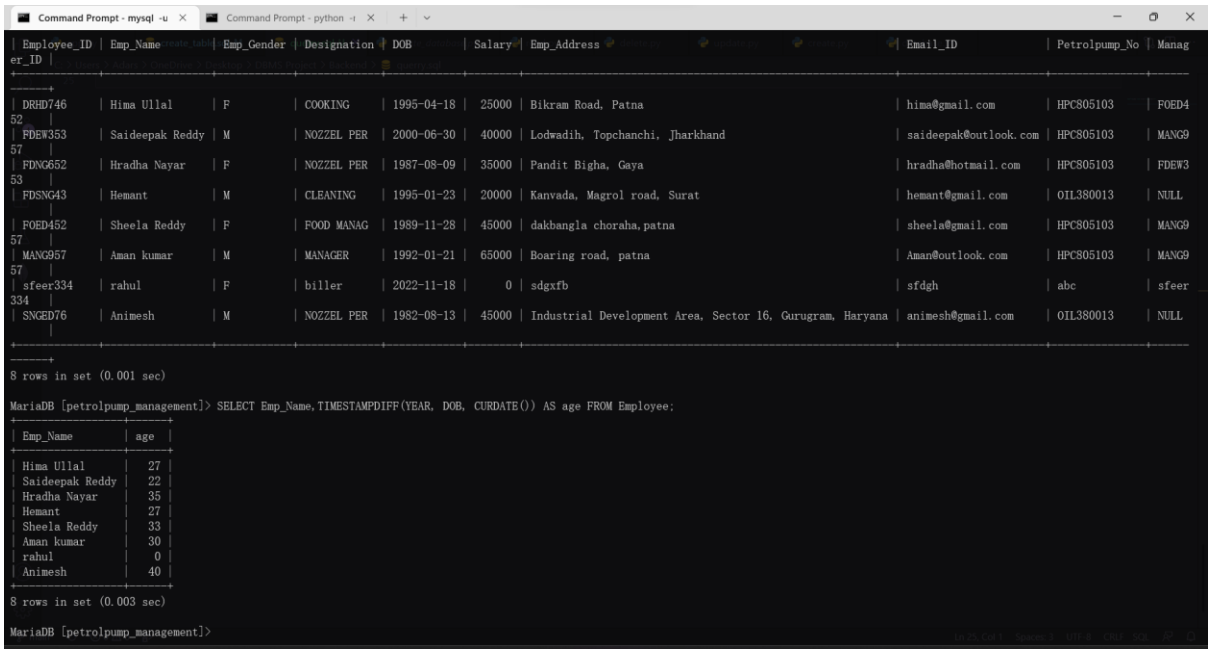
```
MariaDB [petrolpump_management]> select  * from customer;
+---------------+----------+------------+---------------------+--------+-----------+------+
| Customer_Code | C_Name   | Phone_No   | Email_ID            | Gender | City      | Age  |
+---------------+----------+------------+---------------------+--------+-----------+------+
| BFR426        | Anamika  | 9569731800 | anamika@gmail.com   | F      | Jharkhand |   26 |
| cdfg34s       | who      | 2514866186 | sacdfbg@dccbvfgdgnf | M      | dsfgnh    |   50 |
| CGM235        | Vinesh   | 6794324600 | vines@pesu.pes.edu  | M      | Kolkata   |   54 |
| FJD253        | Chetan   | 8426951300 | chetan@hotmail.com  | M      | Bengalore |   24 |
| GHE785        | Praneet  | 7539514600 | praneet@yahoo.com   | M      | Orissa    |   59 |
| OUI325        | Ayush    | 7618425500 | ayush@outlook.com   | M      | Kota      |   18 |
| SFG252        | Akash    | 6542589700 | akash@gmail.com     | M      | Bihar     |   27 |
+---------------+----------+------------+---------------------+--------+-----------+------+
7 rows in set (0.000 sec)

MariaDB [petrolpump_management]> select avg(Age) from Customer where Gender='M';
+-----------+
| avg(Age)  |
+-----------+
|  38.6667  |
+-----------+
1 row in set (0.001 sec)

MariaDB [petrolpump_management]>
```

Q2) Find the name and age of Employee using the date of birth.

Query: SELECT Emp_Name, TIMESTAMPDIFF (YEAR, DOB, CURDATE()) AS age FROM Employee;



```
Command Prompt - mysql -u  Command Prompt - python -i
| Employee_ID | Emp_Name      | Emp_Gender | Designation | DOB        | Salary | Emp_Address                                                  | Email_ID              | Petrolpump_No | Manager_ID |
+-------------+---------------+------------+-------------+------------+--------+--------------------------------------------------------------+-----------------------+---------------+------------+
| DRHD746     | Hima Ullal    | F          | COOKING     | 1995-04-18 |  25000 | Bikram Road, Patna                                           | hima@gmail.com        | HPCS05103     | FOED452    |
| FDEW353     | Saideepak Reddy | M        | NOZZEL PER  | 2000-06-30 |  40000 | Lodwadih, Topchanchi, Jharkhand                              | saideepak@outlook.com | HPCS05103     | MANG957    |
| FDNG652     | Hradha Nayar  | F          | NOZZEL PER  | 1987-08-09 |  35000 | Pandit Bigha, Gaya                                           | hradha@hotmail.com    | HPCS05103     | FDEW353    |
| FDSNG43     | Hemant        | M          | CLEANING    | 1995-01-23 |  20000 | Kanvada, Magrol road, Surat                                  | hemant@gmail.com      | OIL380013     | NULL       |
| FOED452     | Sheela Reddy  | F          | FOOD MANAG  | 1989-11-28 |  45000 | dakbangla choraha,patna                                      | sheela@gmail.com      | HPCS05103     | MANG957    |
| MANG957     | Aman kumar    | M          | MANAGER     | 1992-01-21 |  65000 | Boaring road, patna                                          | Aman@outlook.com      | HPCS05103     | MANG957    |
| sfeer334    | rahul         | F          | biller      | 2022-11-18 |      0 | sdgxfb                                                       | sfdgh                 | abc           | sfeer334   |
| SNGED76     | Animesh       | M          | NOZZEL PER  | 1982-08-13 |  45000 | Industrial Development Area, Sector 16, Gurugram, Haryana    | animesh@gmail.com     | OIL380013     | NULL       |
+-------------+---------------+------------+-------------+------------+--------+--------------------------------------------------------------+-----------------------+---------------+------------+
8 rows in set (0.001 sec)

MariaDB [petrolpump_management]> SELECT Emp_Name,TIMESTAMPDIFF(YEAR, DOB, CURDATE()) AS age FROM Employee;
+-----------------+------+
| Emp_Name        | age  |
+-----------------+------+
| Hima Ullal      |   27 |
| Saideepak Reddy |   22 |
| Hradha Nayar    |   35 |
| Hemant          |   27 |
| Sheela Reddy    |   33 |
| Aman kumar      |   30 |
| rahul           |    0 |
| Animesh         |   40 |
+-----------------+------+
8 rows in set (0.003 sec)

MariaDB [petrolpump_management]>
```

Q3) Find the Details of the Invoice Whose Total Prize is Maximum?

Query: SELECT *, max(Total_Price) from Invoice;

```
MariaDB [petrolpump_management]> select * from Invoice;
+------------+------------+--------------+-------------+-----------+----------+-------------+---------------+
| Invoice_No | Date       | Payment_Type | Fuel_Amount | Fuel_Type | Discount | Total_Price | Customer_Code |
+------------+------------+--------------+-------------+-----------+----------+-------------+---------------+
| DS85       | 2019-08-19 | Debit Card   |         6.8 | Diesel    |     NULL |      597.65 | OUI325        |
| dxgfgf     | 2022-11-01 | Credit_Card  |           5 | gasoline  |        5 |        5212 | OUI325        |
| FG43       | 2022-10-27 | UPI          |         4.9 | Gasoline91|        5 |      498.32 | SFG252        |
| MN34       | 2020-06-30 | Credit Card  |        15.8 | Diesel    |        8 |     1284.51 | OUI325        |
| NR43       | 2021-10-12 | UPI          |         5.4 | Gasoline91|     NULL |      578.07 | GHE785        |
| XC34       | 2022-11-20 | Cash         |           7 | PetrolE10 |       10 |      640.83 | BFR426        |
+------------+------------+--------------+-------------+-----------+----------+-------------+---------------+
6 rows in set (0.001 sec)

MariaDB [petrolpump_management]> SELECT *,max(Total_Price) from Invoice;
+------------+------------+--------------+-------------+-----------+----------+-------------+---------------+------------------+
| Invoice_No | Date       | Payment_Type | Fuel_Amount | Fuel_Type | Discount | Total_Price | Customer_Code | max(Total_Price) |
+------------+------------+--------------+-------------+-----------+----------+-------------+---------------+------------------+
| DS85       | 2019-08-19 | Debit Card   |         6.8 | Diesel    |     NULL |      597.65 | OUI325        |             5212 |
+------------+------------+--------------+-------------+-----------+----------+-------------+---------------+------------------+
1 row in set (0.000 sec)

MariaDB [petrolpump_management]>
```

Q4) Get the details of Sales No, Sales Amount & Petrol pump No whose sales is maximum on 20 November, 2022

Query: SELECT Sales_No, Sales_Amount, Petrolpump_No, max(Sales_Amount) FROM Sales WHERE DATE='2022-11-20';

```
MariaDB [petrolpump_management]> select * from Sales;
+----------+------------+-----------+-----------------+---------------+-------------+--------------+---------------+
| Sales_No | Date       | Nozzel_No | Starting_Reading | Ending_Reading | Total_Sales | Sales_Amount | Petrolpump_No |
+----------+------------+-----------+-----------------+---------------+-------------+--------------+---------------+
| FGHGE32  | 2022-11-20 |         1 |           45687 |         49782 |     17584.4 |       106.52 | HPC805103     |
| GDZJD24  | 2019-08-19 |         1 |           62725 |         68725 |     5466.45 |       125.85 | OIL380013     |
| IUOSF98  | 2019-08-19 |         2 |           12757 |         23454 |     1254.71 |        89.45 | HPC805103     |
| MVBER67  | 2022-11-20 |         2 |           48325 |         53842 |     4253.45 |        205.5 | OIL380013     |
| QWRGH87  | 2022-11-22 |         3 |           12758 |         19758 |     7854.65 |       425.25 | HPC805103     |
+----------+------------+-----------+-----------------+---------------+-------------+--------------+---------------+
5 rows in set (0.000 sec)

MariaDB [petrolpump_management]> SELECT Sales_No, Sales_Amount, Petrolpump_No, max(Sales_Amount) FROM Sales WHERE DATE='2022-11-20';
+----------+--------------+---------------+------------------+
| Sales_No | Sales_Amount | Petrolpump_No | max(Sales_Amount) |
+----------+--------------+---------------+------------------+
| FGHGE32  |       106.52 | HPC805103     |            205.5 |
+----------+--------------+---------------+------------------+
1 row in set (0.000 sec)

MariaDB [petrolpump_management]>
```

Set Operations

Showcase at least 4 Set Operations queries

Write the query in English Language, Show the equivalent SQL statement and also a screenshot of the query and the results.

Q 1) Get all the Unique names of Both the tables Owners and Employee

Querry: SELECT Owner_Name from Owners UNION SELECT EMP_Name from Employee;

```
MariaDB [petrolpump_management]> SELECT Owner_Name from Owners as Names UNION SELECT EMP_Name from Employee ;
+--------------------+
| Owner_Name         |
+--------------------+
| Avinash Shankar    |
| Neerja Bhanot      |
| Nirmal Sethi       |
| Pawan Kumar        |
| sdfg               |
| Vikash Kumar Tarun |
| Hima Ullal         |
| Saideepak Reddy    |
| Hradha Nayar       |
| Hemant             |
| Sheela Reddy       |
| Aman kumar         |
| rahul              |
| Animesh            |
+--------------------+
14 rows in set (0.001 sec)

MariaDB [petrolpump_management]>
```

Q2) Find the Petrolpump Registration no which is Common Between both table Petrol pump and Employee?

Querry: SELECT Registration_No from Petrolpump INTERSECT SELECT Petrolpump_No from Employee;

```
MariaDB [petrolpump_management]> SELECT Registration_No from Petrolpump INTERSECT SELECT Petrolpump_No from Employee;
+-----------------+
| Registration_No |
+-----------------+
| abc             |
| HPC805103       |
| OIL380013       |
+-----------------+
3 rows in set (0.002 sec)

MariaDB [petrolpump_management]>
```

Q3)

Querry: SELECT Petrolpump_Name FROM Petrolpump where Registration_No IN(SELECT Petrolpump.Registration_No FROM Petrolpump left join Employee on Petrolpump.Registration_No = Employee.Petrolpump_No WHERE Employee.Petrolpump_No is NULL);

```
MariaDB [petrolpump_management]> SELECT Petrolpump_Name FROM Petrolpump where Registration_No IN(SELECT Petrolpump.Registration_No
 FROM Petrolpump left join Employee on Petrolpump.Registration_No = Employee.Petrolpump_No WHERE Employee.Petrolpump_No is NULL);
+-----------------------------------+
| Petrolpump_Name                   |
+-----------------------------------+
| Rajinder Service Station          |
| Madhu Enterprises                 |
| Tamarassery Reliance Retail Outlet |
| fdgh                              |
+-----------------------------------+
4 rows in set (0.002 sec)

MariaDB [petrolpump_management]>
```

Q 4)

Querry: SELECT C_Name from Customer UNION SELECT Owner_Name from Owners;

```
MariaDB [petrolpump_management]> SELECT  C_Name from Customer UNION SELECT Owner_Name from Owners;
+--------------------+
| C_Name             |
+--------------------+
| Anamika            |
| who                |
| Vinesh             |
| Chetan             |
| Praneet            |
| Ayush              |
| Akash              |
| Avinash Shankar    |
| Neerja Bhanot      |
| Nirmal Sethi       |
| Pawan Kumar        |
| sdfg               |
| Vikash Kumar Tarun |
+--------------------+
13 rows in set (0.000 sec)

MariaDB [petrolpump_management]>
```

Functions and Procedures:

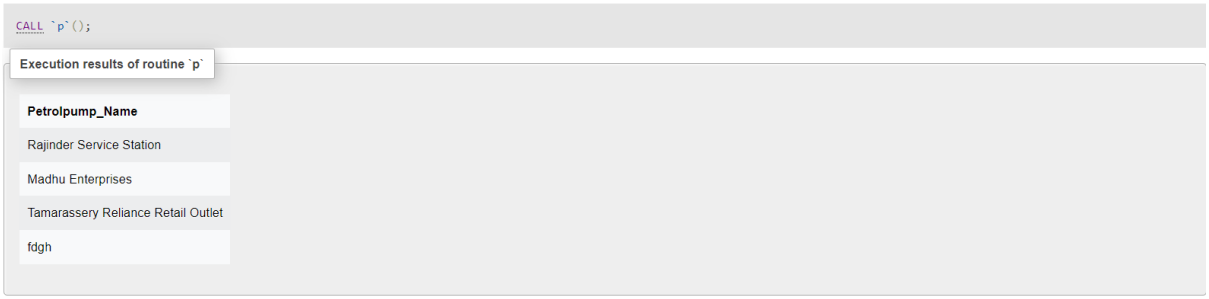
Create a Function and Procedure. State the objective of the function / Procedure. Run and display the results.

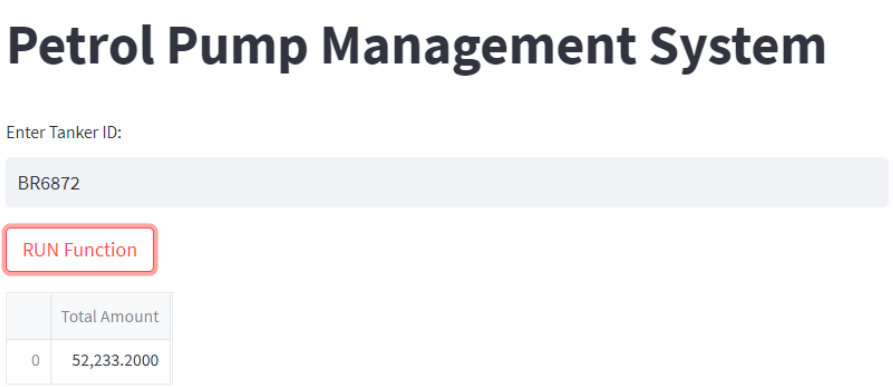
```
MariaDB [petrolpump_management]> CREATE FUNCTION `TOTAL_AMOUNT`(`TID` VARCHAR(10)) RETURNS float
    ->     DETERMINISTIC
    -> BEGIN
    ->
    ->     DECLARE BILL FLOAT;
    ->     DECLARE RATE FLOAT;
    ->     DECLARE VOL FLOAT;
    ->
    ->     SET RATE = (SELECT FUEL_PRICE FROM TANKER WHERE TANKER_ID = TID);
    ->     SET VOL = (SELECT FUEL_AMOUNT FROM TANKER WHERE TANKER_ID = TID);
    ->
    ->     SET BILL = RATE * VOL;
    ->
    ->     RETURN BILL;
    ->
    -> END$$
Query OK, 0 rows affected (0.012 sec)

MariaDB [petrolpump_management]> DELIMITER ;
MariaDB [petrolpump_management]> SET @p0='BR6872'; SELECT `TOTAL_AMOUNT`(@p0) AS `TOTAL_AMOUNT`;
Query OK, 0 rows affected (0.000 sec)

+--------------+
| TOTAL_AMOUNT |
+--------------+
|      52233.2 |
+--------------+
1 row in set (0.001 sec)

MariaDB [petrolpump_management]>
```



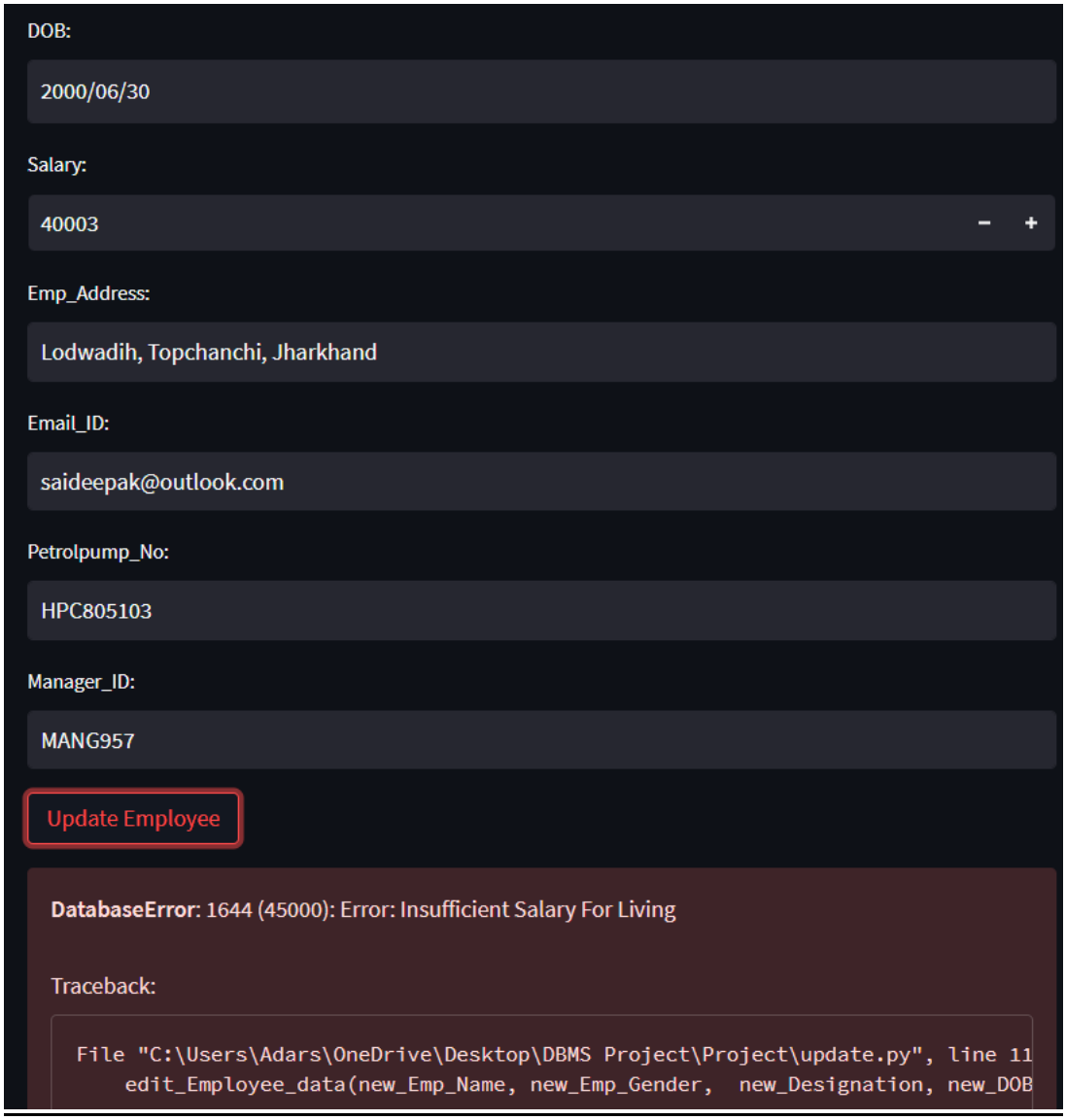


Triggers and Cursors:

Create a Trigger and a Cursor. State the objective. Run and display the results.

```
-- Trigger --
DELIMITER $$
CREATE TRIGGER salary_check
BEFORE UPDATE
ON Employee FOR EACH ROW
BEGIN
declare WAGE int(7);
declare error_msg varchar(225);
set error_msg = ("Error: Insufficient Salary For Living");
set WAGE = new.WAGE;
if salary < 300000 then
signal sqlstate '45000'
set MESSAGE_TEXT = error_msg;
end if;
END $$

DELIMITER ;
```



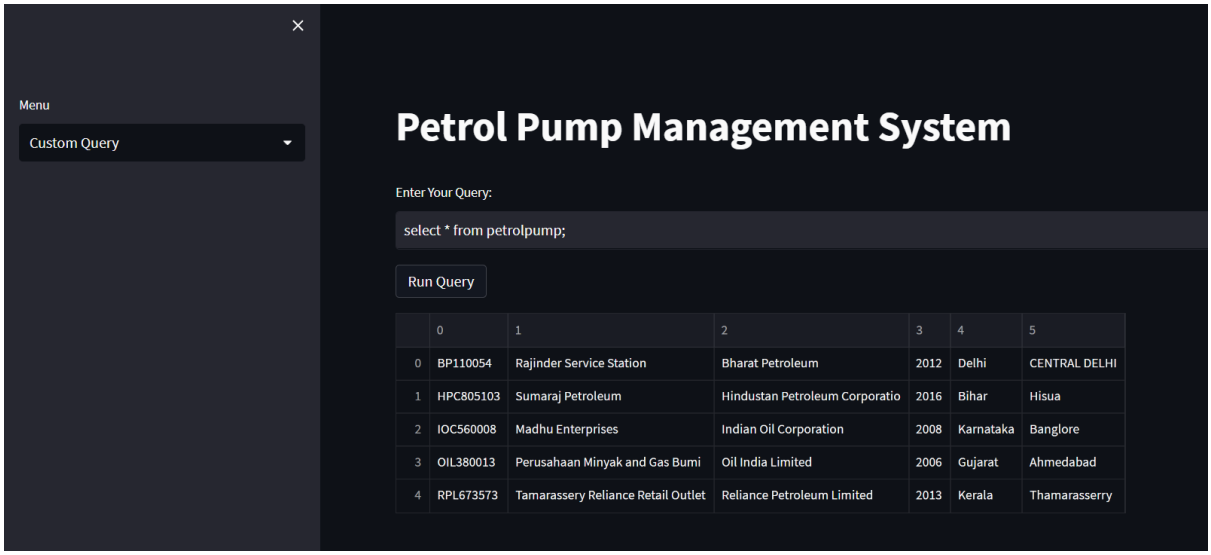
Developing a Frontend:

The frontend should support

1. Addition, Modification and Deletion of records from any chosen table

	Registration_No	Petrolpump_Name	Company_Name	Opening_Year	State	City
0	abc	pumpertump	BPL	1968	karnataka	bengaluru
1	BP110054	Rajinder Service Station	Bharat Petroleume	2015	Delhi	CENTRAL_DELHI
2	HPC805103	Sumaraj Petroleum	Hindustan Petroleum Corporatio	2016	Bihar	Hisua
3	IOC560008	Madhu Enterprises	Indian Oil Corporation	2008	Karnataka	Banglore
4	OIL380013	Perusahaan Minyak and Gas Bumi	Oil India Limited	2006	Gujarat	Ahmedabad
5	RPL673573	Tamarassery Reliance Retail Outlet	Reliance Petroleum Limited	2013	Kerala	Thamarasserry
6	sfdg	fdgh	relience	1485	fgjh	xbcvgn

2. There should be a window to accept and run any SQL statement and display the result



	0	1	2	3	4	5
0	BP110054	Rajinder Service Station	Bharat Petroleum	2012	Delhi	CENTRAL DELHI
1	HPC805103	Sumaraj Petroleum	Hindustan Petroleum Corporatio	2016	Bihar	Hisua
2	IOC560008	Madhu Enterprises	Indian Oil Corporation	2008	Karnataka	Banglore
3	OIL380013	Perusahaan Minyak and Gas Bumi	Oil India Limited	2006	Gujarat	Ahmedabad
4	RPL673573	Tamarassery Reliance Retail Outlet	Reliance Petroleum Limited	2013	Kerala	Thamarasserry

Modification:

Q) Create a procedure such that on call It should show the total sales and sales amount of a particulate month?

- Procedure

```
MariaDB [petrolpump_management]> DELIMITER $$
MariaDB [petrolpump_management]> create procedure Modify()
    -> begin
    -> select total_sales, sales_amount from sales where month(date) = 11;
    -> END $$
Query OK, 0 rows affected (0.011 sec)
```

✔ Your SQL query has been executed successfully.
3 rows affected by the last statement inside the procedure.

```
CALL `Modify`();
```

Execution results of routine `Modify`

total_sales	sales_amount
17584.4	106.52
4253.45	205.5
7854.65	425.25

- Function

Petrol Pump Management System

Enter Tanker ID:

BR6872

RUN Function

	Total Amount
0	52,233.2000