

Budget and Financials of MBTA

Milestone: Implementation in MySQL

Group 21

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Percentage of Effort Contributed by Student 1: 50

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Creating tables:

```
CREATE TABLE Vehicle(  
    VehicleID int NOT NULL,  
    Model varchar(50),  
    Vehicle_Capacity int,  
    start_place varchar(100),  
    end_place varchar(100),  
    CONSTRAINT Vehicle_PK PRIMARY KEY(VehicleID)  
);
```

```
CREATE TABLE Bus(  
    VehicleID int NOT NULL,  
    BusRate decimal(2,1) default 1.7,  
    License_Plate_Num varchar(6),  
    RouteNo int,  
    CONSTRAINT Bus_PK PRIMARY KEY(VehicleID),  
    CONSTRAINT Bus_FK1 FOREIGN KEY(VehicleID) REFERENCES Vehicle(VehicleID)  
);
```

```
CREATE TABLE Subway(  
    VehicleID int NOT NULL,  
    SubwayType varchar(20),  
    TicketPrice decimal(2,1) default 2.4,  
    CONSTRAINT Subway_PK PRIMARY KEY(VehicleID),
```

```
CONSTRAINT Subway_FK1 FOREIGN KEY(VehicleID) REFERENCES Vehicle(VehicleID)
);
```

```
CREATE TABLE Commuterrail(
    VehicleID int NOT NULL,
    TicketPrice decimal(2,1) default 8.5,
    CONSTRAINT commuter_PK PRIMARY KEY(VehicleID),
    CONSTRAINT commuter_FK1 FOREIGN KEY(VehicleID) REFERENCES Vehicle(VehicleID)
);
```

```
CREATE TABLE Scanner(
    ScannerID varchar(10) NOT NULL,
    Location varchar(50)
    CONSTRAINT ScannerCheck check (Location IN ('Train Station','Subway','Bus')),
    Date_of_Manufacture date,
    Date_of_Installation date,
    CONSTRAINT Scanner_PK PRIMARY KEY(ScannerID)
);
```

```
CREATE TABLE SubwayScanner(
    ScannerID varchar(10) NOT NULL,
    VehicleID int,
    CONSTRAINT TrainScanner_PK PRIMARY KEY(ScannerID),
    CONSTRAINT SubScanner_FK1 FOREIGN KEY(VehicleID) REFERENCES Subway(VehicleID),
    CONSTRAINT SubScanner_FK2 FOREIGN KEY(ScannerID) REFERENCES Scanner(ScannerID)
);
```

```
create TABLE BusScanner(  
    ScannerID varchar(10) NOT NULL,  
    VehicleID int,  
    CONSTRAINT BusScanner_PK PRIMARY KEY(ScannerID),  
    CONSTRAINT BusScanner_FK1 FOREIGN KEY(VehicleID) REFERENCES Bus(VehicleID),  
    CONSTRAINT BusScanner_FK2 FOREIGN KEY(ScannerID) REFERENCES Scanner(ScannerID)  
);
```

```
create table TrainStation(  
    StationCode int NOT NULL,  
    StationName varchar(30),  
    CommuteType varchar(30),  
    StreetName varchar(30),  
    PostalCode int,  
    Constraint TrainStation_pk primary key (StationCode)  
);
```

```
CREATE TABLE StationScanner(  
    ScannerID varchar(10) NOT NULL,  
    StationCode int,  
    CONSTRAINT trainScanner1_PK PRIMARY KEY(ScannerID),  
    CONSTRAINT trainstScanner_FK1 FOREIGN KEY(StationCode) REFERENCES  
TrainStation(StationCode),  
    CONSTRAINT trainstScanner_FK2 FOREIGN KEY(ScannerID) REFERENCES Scanner(ScannerID)
```

```
);
```

```
create table PassGenerator(  
    GeneratorID int NOT NULL,  
    StationCode int,  
    Location varchar(50),  
    PRIMARY KEY(GeneratorID),  
    FOREIGN KEY(StationCode) REFERENCES TrainStation(StationCode)  
);
```

```
create table Pass(  
    PassID int NOT NULL,  
    GeneratorID int,  
    Balance double,  
    ExpiryDate date,  
    PassType varchar(30),  
    CONSTRAINT PassTypeCheck Check (PassType IN('1-Day Pass' , '7-Day Pass' , 'MonthlyLink  
Pass' , 'MonthlyLocal Pass','Charlie Card')),  
    CONSTRAINT PASS_PK PRIMARY KEY(PassID),  
    CONSTRAINT PASS_FK FOREIGN KEY(GeneratorID) REFERENCES PassGenerator(GeneratorID)  
);
```

```
create table Quarter(  
    QuarterID varchar(20),  
    Q_StartDate date,  
    Q_endDate date,
```

```
Quarter_type varchar(255),  
CONSTRAINT QuarterCheck CHECK (Quarter_type IN('Spring' , 'Summer' , 'Fall' , 'Winter' )),  
CONSTRAINT QUARTER_PK PRIMARY KEY(QuarterID)  
);
```

```
create table Transactions(  
    TransactionID int NOT NULL,  
    PassID int,  
    ScannerID varchar(10),  
    TransactionDate date,  
    QuarterID varchar(20),  
    TransactionTime time,  
    Amount double,  
    CONSTRAINT TRANSACTION_PK PRIMARY KEY(TransactionID),  
    CONSTRAINT TRANSACTION_FK1 FOREIGN KEY(PassID) REFERENCES Pass(PassID),  
    CONSTRAINT TRANSACTION_FK2 FOREIGN KEY(ScannerID) REFERENCES Scanner(ScannerID),  
    CONSTRAINT TRANSACTION_FK3 FOREIGN KEY(QuarterId) REFERENCES Quarter(QuarterId)  
);
```

```
create table Department(  
    DepartmentID int auto_increment not NULL,  
    Dept_Location varchar(255) ,  
    Job_Description varchar(255),  
    CONSTRAINT Department_Pk primary key (DepartmentID)  
);
```

```
create table Employee(  
    EmployeeID int auto_increment not NULL,  
    SSN int not NULL,  
    FirstName varchar(255),  
    LastName varchar(255),  
    ContactNumber INT,  
    DateOfBirth DATE,  
    StartDate DATE,  
    LastDate DATE,  
    StreetName varchar(255),  
    City VARCHAR(255) DEFAULT 'Boston',  
    Country varchar(255) ,  
    PostalCode INT,  
    DepartmentID INT,  
    CONSTRAINT Employee_PK primary key (EmployeeID),  
    Constraint Department_FK FOREIGN key (DepartmentID) references Department(DepartmentID)  
);
```

```
create Table Expense(  
    ExpenseID int auto_increment not NULL,  
    QuarterID varchar(20),  
    InvoiceNumber INT,  
    BillingDate DATE,  
    Bill_Amount Decimal(10,3),
```

```
Bill_Type varchar(255) ,  
Constraint Bill_Type_chk Check( Bill_Type in ('Electricity','Fuel&Energy','Salary')),  
CONSTRAINT Expense_PK primary key (ExpenseID),  
CONSTRAINT quarter_fk FOREIGN key (QuarterID) REFERENCES Quarter(QuarterID)  
);
```

```
create table electricity(  
    ExpenseID INT not null,  
    UnitsUsed INT,  
    ChargePerUnit decimal(5,2) default '0.1',  
    StationCode int,  
    constraint electricity_pk PRIMARY KEY (ExpenseID),  
    CONSTRAINT electricity_fk FOREIGN key (ExpenseID) REFERENCES Expense(ExpenseID),  
    constraint electricity_fk2 FOREIGN key (StationCode) REFERENCES TrainStation(StationCode)  
);
```

```
create table FuelEnergy(  
    ExpenseID int not null,  
    VehicleID int,  
    ChargeType varchar(255),  
    UnitsUsed INT,  
    ChargePerUnit decimal(5,2),  
    constraint ExpenseID_pk PRIMARY KEY (ExpenseID),  
    CONSTRAINT fuel_fk FOREIGN key (ExpenseID) REFERENCES Expense(ExpenseID),  
    Constraint fuel_fk2 FOREIGN key (VehicleID) REFERENCES Vehicle(VehicleID)
```


);

```
create table Salary(  
    ExpenseID INT not null,  
    EmployeeID int,  
    SalaryStartDate DATE,  
    SalaryEndDate DATE,  
    NumberOfHours DECIMAL,  
    Wage decimal DEFAULT 1.0,  
    constraint salary_pk PRIMARY KEY (ExpenseID),  
    CONSTRAINT salary_fk FOREIGN key (ExpenseID) REFERENCES Expense(ExpenseID),  
    CONSTRAINT salary_fk2 FOREIGN key (EmployeeID) references Employee(EmployeeID)  
);
```

Inserting Data

-- inserting data for the vehicle table

INSERT INTO Vehicle

VALUES

(8101, 'A1', 'fenway', 'shrewsbury'),

(8102, 'B3', 'Cambridge', 'Huntington'),

(8103, 'C5', 'Charlestown', 'Fenway'),

(8104, 'V6', 'Assembly', 'Hay Market'),

(8105, 'B7', 'Charlestown', 'Roxbury'),
(8106, 'B9', 'Copley', 'Symphony'),
(8107, 'K8', 'Hynes', 'Brigham'),
(8108, 'L9', 'Heath Street', 'Oak'),
(8109, 'G6', 'Dorchester', 'Somerville'),
(8110, 'K2', 'Chelsea', 'Hanging street'),
(8111, 'I7', 'Framingham', 'South Station'),
(8112, 'L4', 'Taunton', 'Union square'),
(8113, 'H2', 'Raynham', 'Central'),
(8114, 'P8', 'Stoughton', 'Quincy'),
(8115, 'P8', 'Dorchester', 'Oak'),
(8116, 'P8', 'Park street', 'Quincy'),
(8117, 'P8', 'Taunton', 'Symphony'),
(8118, 'P8', 'Assembly', 'Quincy'),
(8119, 'P8', 'Stoughton', 'Hay Market'),
(8120, 'P8', 'Hynes', 'Copley'),
(8121, 'P8', 'Copley', 'Quincy'),
(8122, 'P8', 'Stoughton', 'Copley'),
(8123, 'P8', 'Stoughton', 'Boylston'),
(8124, 'P8', 'Boylston', 'Union Sq'),
(8125, 'P8', 'Admas', 'MIT');

select * from vehicle;

-- inserting data for the bus Table

```
INSERT INTO Bus
```

```
VALUES
```

```
(8101, 1.4, '6HV8I9', 99),  
(8102, 1.4, '6HV8O9', 09),  
(8103, 1.4, '6HV909', 80),  
(8115, 1.4, '6HV719', 85),  
(8116, 1.4, '6HW739', 87),  
(8117, 1.4, '6HE459', 40),  
(8118, 1.4, '6HT779', 30),  
(8119, 1.4, '6HR789', 83);
```

```
-- Inserting values for subway table
```

```
INSERT INTO Subway
```

```
VALUES
```

```
(8104, 'Green', 2.4),  
(8105, 'Orange', 2.4),  
(8106, 'Red', 2.4),  
(8107, 'Purple', 2.4),  
(8108, 'Green', 2.4),  
(8109, 'Red', 2.4),  
(8110, 'Orange', 2.4);
```

```
-- Inserting values for commuterrail table
```

```
INSERT INTO commuterrail
```

```
VALUES
```

```
(8111, 8.5),
```

```
(8112,8.5),  
(8113,8.5),  
(8114,8.5),  
(8120,8.5),  
(8121,8.5),  
(8122,8.5),  
(8123,8.5),  
(8124,8.5),  
(8125,8.5);
```

-- Inserting values for scanner

```
select * from scanner;
```

INSERT INTO Scanner

VALUES

```
('O122','Train Station','2020-03-16','2021-03-08'),  
( 'P343','Train Station','2010-03-11','2021-04-12'),  
( 'R309','Train Station','2011-02-10','2021-04-11'),  
( 'R532','Subway','2019-03-16','2022-08-11'),  
( 'G632','Subway','2019-03-16','2022-08-11'),  
( 'O908','Subway','2009-09-13','2021-03-02'),  
( 'P098','Subway','2019-08-16','2022-02-01'),  
( 'B102','Bus','2007-03-08','2021-11-20'),  
( 'B011','Bus','2008-01-01','2016-04-04'),  
( 'B112','Bus','2008-01-01','2016-04-04'),
```

('G111', 'Train Station' , '2000-03-11', '2022-03-08'),
('G000' , 'Train Station' , '2009-12-10' , '2015-08-05'),
('G113' , 'Train Station' , '2016-11-29' , '2020-09-07'),
('O114' , 'Train Station' , '2010-05-14' , '2022-12-15'),
('O115' , 'Train Station' , '2016-11-29' , '2020-09-07'),
('O998','Subway','2001-01-01','2022-10-10'),
('O997','Subway','2001-11-01','2022-10-10'),
('O996','Subway','2001-12-02','2022-10-10'),
('G995','Subway','2011-11-14','2012-12-09'),
('G994','Subway','2010-04-15','2020-09-11'),
('G993','Subway','2005-11-21','2021-11-11'),
('P992','Subway','2012-04-08','2018-08-04'),
('P991','Subway','2016-02-08','2019-08-04'),
('P990','Subway','2004-04-05','2016-08-11'),
('R989','Subway','2005-04-07','2018-08-07'),
('R988','Subway','2012-12-09','2018-05-08'),
('R987','Subway','2006-07-08','2019-06-11');

-- inserting table for Subway Scanner

Insert Into SubwayScanner

Values

('G632','8104'),
('O908','8105'),
('R532','8106'),
('P098','8107'),
('O998','8105'),

```
('O997','8105'),  
('O996','8105'),  
('G995','8104'),  
('G994','8104'),  
('G993','8104'),  
('R989','8106'),  
('R988','8106'),  
('R987','8106'),  
('P992','8107'),  
('P991','8107'),  
('P990','8107');
```

```
-- inserting Data for BusScanner
```

```
Insert Into BusScanner
```

```
Values
```

```
('B102','8101'),  
('B011','8102'),  
('B112','8103');
```

```
-- Inserting Data for TrainStation Table
```

```
insert into TrainStation
```

```
values('5101','Ruggles','Green','1150 Tremont St','02120');
```

```
insert into TrainStation
```

```
values('5102','Government Center','Green','1 Cambridge St','02114');
```

```
insert into TrainStation
```

```
values('5103','Downtown Crossing','Purple','Washington St &, Summer Street','02108');
```

```
insert into TrainStation
values('5104','North Station','Orange','135 Causeway St','02114');

insert into TrainStation
values('5105','Charles/MGH','Green','Cambridge St ','02108');

insert into TrainStation
values('5106','South Station','Red','700 Atlantic Ave','02110');

insert into TrainStation
values('5107','Haymarket','Green','136 Blackstone St','02109');

insert into TrainStation
values('5108','Green street','Green','150 Green St','02130');

insert into TrainStation
values('5109','Heat Street','Red','boston','02130');

insert into TrainStation
values('5110','Symphony','Green','Huntington Avenue','02115');

insert into TrainStation
values('5111','Fenway','Green','Huntington Avenue','02115');

insert into TrainStation
values('5112','Boylston','Green','Roxbury','02119');

insert into TrainStation
values('5113','Fenway','Green','Heath Street','02221');

insert into TrainStation
values('5114','Downtown','Orange','Jamaica Plain','02121');

insert into TrainStation
values('5115','Huntington Ave','Purple','Assembly Row','02115');

insert into TrainStation
values('5116','Symphony','Purple','Boylston','20005');

insert into TrainStation
```

```
values('5117','Assembly Row','Red','Downtown','02118');  
  
insert into TrainStation  
  
values('5118','Roxbury','Red','Kenmore','02215');  
  
insert into TrainStation  
  
values('5119','Dorchester','Red','Huntington Avenue','02114');  
  
insert into TrainStation  
  
values('5120','Heath Street','Purple','Oak Grove','02115');
```

-- Inserting Values for StationScanner

```
insert into StationScanner  
  
VALUES  
  
('G000','5103'),  
  
('O114','5106'),  
  
('G111' , '5112'),  
  
('G113' , '5113'),  
  
('G012' , '5114'),  
  
('R309' , '5115');
```

-- Inserting Values for Pass Generator

```
insert into PassGenerator  
  
values(301,5101,'Entrance1');  
  
insert into PassGenerator  
  
values(302, 5102 , 'Entrance2');
```



```
insert into PassGenerator
values(303, 5103, 'Entrance3');

insert into PassGenerator
values(304,5104, 'Entrance4');

insert into PassGenerator
values(305, 5105,'Entrance5');

insert into PassGenerator
values(306, 5106, 'Exit1');

insert into PassGenerator
values(307,5107,'Exit2');

insert into PassGenerator
values(308, 5108, 'Exit3');

insert into PassGenerator
values(309,5109, 'Exit4');

insert into PassGenerator
values(310, 5109,'Exit5');
```

-- Inserting Value into the PASS table

```
insert into Pass
values(901,301,12.34,'2022-09-14','1-Day Pass');

insert into Pass
values(902,302,63.3,'2022-08-17','7-Day Pass');

insert into Pass
VALUES(903,303,5.65 , '2022-11-12', 'Charlie Card');

insert into Pass
values(904,304,23.3 , '2022-12-31', 'MonthlyLocal Pass');
```

```
insert into Pass
values(905,305,76.2,'2023-06-13','Charlie Card');

insert into Pass
values(906,306,34.4, '2023-05-01','MonthlyLink Pass');

insert into Pass
values(907,307,5.5, '2023-01-19','1-Day Pass');

insert into Pass
values(908,308,7.4,'2023-02-01','MonthlyLink Pass');

insert into Pass
values(909,309,19.8, '2023-03-11','7-Day Pass');

insert into Pass
values(910,309, 0.89, '2023-02-12','Charlie Card');
```

-- Inserting Values into Quarter Table

```
insert into Quarter
values('Summer2020','2020-06-21','2020-09-20','Summer');

insert into Quarter
values('Fall2020','2020-09-21','2020-12-20','Fall');

insert into Quarter
values('Winter2021','2020-12-20','2021-03-19','winter');

insert into Quarter
values('Spring2021','2021-03-19','2021-06-20','Spring');

insert into Quarter
values('Summer2021','2021-06-21','2021-09-20','Summer');
```

```
insert into Quarter
values('Fall2021','2021-09-21','2020-12-20','Fall');

insert into Quarter
values('Winter2022','2022-12-20','2022-03-19','Winter');

insert into Quarter
values('Spring2022','2022-03-19','2022-06-20','Spring');

insert into Quarter
values('Summer2022','2022-06-21','2022-09-20','Summer');

insert into Quarter
values('Fall2022','2022-09-21','2023-12-20','Fall');
```

-- Inserting Values into Transactions

```
insert into Transactions
values(1001,901,'G012','2020-06-21','Summer2022','01:30','12');

insert into Transactions
values(1002,902,'O122','2020-07-23','Summer2022','8:12','12');

insert into Transactions
values(1003,903,'P343','2020-06-06','Summer2022','14:45','12');

insert into Transactions
values(1004,904,'R309','2020-08-21','Summer2022','23:54','12');

insert into Transactions
values(1005,905,'R532','2021-03-30','spring2022','11:30','10');

insert into Transactions
values(1006,906,'G632','2020-07-03','Summer2022','12:19','12');

insert into Transactions
```

```
values(1007,907, 'O908','2020-08-14' , 'Summer2021','13:01','10');
insert into Transactions
values(1008,908, 'P098','2021-03-19', 'Winter2021', '20:09', '12');
insert into Transactions
values(1009,909, 'B102','2021-09-30' , 'Fall2021','09:09','10');
insert into Transactions
values(110,901,'B011','2020-08-14','Summer2022','02:56','12' );
insert into Transactions
values(1011, 901,'B112','2020-08-21','Summer2022','16:23','10');
insert into Transactions
values(1012,902,'G111','2022-07-21','Summer2022', '12:34','12');
insert into Transactions
values(1013,903 , 'G000','2022-07-02','Summer2022','09:23','12');
insert into Transactions
values(1014,904,'G113','2022-08-18','Summer2022','16:09','10');
insert into Transactions
values(1015,905,'O114','2021-07-21','Summer2022','03:23','12');
insert into Transactions
values(1016,906,'O115','2021-06-06','Summer2021','09:12','10');
insert into Transactions
values(1017,907, 'O998','2020-08-21','Summer2022', '23:54', '12');
insert into Transactions
values(1018,908, 'O997','2021-02-28','spring2021', '11:30','10');
insert into Transactions
values(1019,909, 'O996','2020-08-21','Summer2022', '20:54', '12');
insert into Transactions
values(1020,901,'G995','2020-09-07','Summer2022','01:19','12');
```

```
insert into Transactions
values(1021,908,'G994','2020-07-09','Summer2022','02:19','10');
insert into Transactions
values(1022,903,'G993','2020-08-09','Summer2022','22:19','12');
insert into Transactions
values(1023,908,'P992','2020-09-09','Summer2022','14:19','10');
insert into Transactions
values(1024,902,'P991','2020-10-09','Summer2022','15:19','12');
insert into Transactions
values(1025,903,'P990','2020-09-11','Spring2022','16:19','12');
insert into Transactions
values(1026,907,'R989','2020-09-18','winter2021','17:19','10');
insert into Transactions
values(1027,906,'R988','2020-09-16','Fall2021','18:19','12');
insert into Transactions
values(1028,905,'R987','2020-08-13','Summer2022','20:19','10');
insert into Transactions
values(1029,902,'G994','2020-07-12','Summer2022','21:00','12');
insert into Transactions
values(1030,901,'G994','2020-09-15','Summer2022','14:19','12');
insert into Transactions
values(1031,903,'G994','2020-06-14','Summer2022','18:19','10');
insert into Transactions
values(1032,906,'G994','2020-03-12','Summer2022','19:19','12');
insert into Transactions
values(1033,901,'G994','2020-07-14','Summer2022','21:19','10');
insert into Transactions
```

```
values(1034,901,'G994','2020-06-15','Summer2022','03:13','12');
insert into Transactions
values(1035,901,'G994','2020-03-10','Summer2022','01:11','12');
insert into Transactions
values(1036,901,'G994','2020-03-14','Summer2022','04:17','12');
insert into Transactions
values(1037,901,'G994','2020-07-21','Summer2022','11:15','12');
insert into Transactions
values(1038,901,'G994','2020-09-22','Summer2022','01:19','12');
insert into Transactions
values(1039,901,'G994','2020-09-25','Summer2022','05:10','12');
insert into Transactions
values(1040,901,'G994','2020-08-21','Summer2022','22:11','12');
insert into Transactions
values(1041,901,'G994','2020-08-23','Summer2022','05:09','10');
insert into Transactions
values(1042,907,'R989','2020-06-20','summer2022','10:19','10');
insert into Transactions
values(1043,907,'R989','2020-05-27','summer2022','10:10','10');
insert into Transactions
values(1044,903,'P990','2020-04-22','summer2022','09:04','12');
insert into Transactions
values(1045,907,'O998','2020-06-26','Summer2022','13:54','10');
insert into Transactions
values(1046,907,'R989','2020-06-27','Summer2022','21:54','12');
insert into Transactions
values(1047,907,'P990','2020-05-29','Summer2022','20:54','10');
```

```
insert into Transactions
values(1048,907, 'R989','2020-06-28','Summer2022', '12:54', '12');

insert into Transactions
values(1049,907, 'P990','2020-04-27','Summer2022', '23:00', '10');

insert into Transactions
values(1050,907, 'R989','2020-08-23','Summer2022', '03:54', '12');
```

-- Insert Values for Department

```
Insert into Department
Values(101,'Ruggles','Cleaning');

Insert into Department
Values(102,'North Station','Helpers');

Insert into Department
Values(103,'Government Center','Cleaning');

Insert into Department
Values(104,'Downtown Crossing','Helpers');

Insert into Department
Values(105,'South Station','Sweepers');

Insert into Department
Values(106,'Charles MGH','Ticket Supervisor');

Insert into Department
Values(107,'Downtown Crossing','Ticket Supervisor');

Insert into Department
Values(108,'Charles MGH','Cleaning');

Insert into Department
Values(109,'NorthStation','Ticket Supervisor');
```

-- Insert Value for Employee

insert into Employee

VALUES (211,123456789,'Sergio','Ramos','98176543','1999-09-14','2022-07-08',null,'St Alphonso St','Boston','MA','02120',101);

insert into Employee

VALUES (212,446789122,'Cristiano','Ronaldo','98198116','2000-04-19','2021-07-01',null,'Staniford St','Boston','MA','02114',102);

insert into Employee

VALUES (213,125789122,'Karim','Benzema','93462356','2000-03-11','2020-04-18',null,'Park Drive','Boston','MA','02215',104);

insert into Employee

VALUES (214,125473122,'Vinicius','Junior','98882353','2000-01-06','2021-05-19','2022-10-18','Staniford St','Boston','MA','02123',106);

insert into Employee

VALUES (215,638089122,'Gareth','Bale','3427856','2000-07-11','2021-04-18',null,'Cambridge St','Boston','MA','02134',108);

insert into Employee

VALUES (216,125789122,'Jay','park','93462356','2000-03-11','2021-11-18',null,'Mission Hill','Boston','MA','02123',102);

insert into Employee

VALUES (217,125789122,'Luka','Modric','9014312','1989-09-12','2019-04-18','2022-02-19','Parker Hill','Boston','MA','02182',108);

insert into Employee

VALUES (218,125789122,'Suga','Min','81413706','1998-04-16','2018-08-16',null,'Huntington Road','Boston','MA','02113',105);

insert into Employee

VALUES (219,125789122,'Kim','Hyun','93462356','2000-03-11','2020-09-13',null,'Fenway Road','Boston','MA','02145',106);

insert into Employee


```
VALUES (220,786549122,'Yang','Son','9122356','1999-06-11','2021-01-12',null,'St Amber  
Street','Boston','MA','02156',103);
```

```
select * from employee;
```

```
-- Insert value for Expense
```

```
insert into Expense
```

```
values (1,'Fall2022',34567,'2022-09-11','12','Salary');
```

```
insert into Expense
```

```
values (2,'Spring2022',12354,'2022-03-22','10','Fuel&Energy');
```

```
insert into Expense
```

```
values (3,'Summer2022',45378,'2022-07-18','12','Electricity');
```

```
insert into Expense
```

```
values (4,'Spring2022',23890,'2022-02-10','13','Salary');
```

```
insert into Expense
```

```
values (5,'Fall2022',12807,'2022-09-29','14','Salary');
```

```
insert into Expense
```

```
values (6,'Winter2022',16789,'2022-11-05','12','Electricity');
```

```
insert into Expense
```

```
values (7,'Winter2022',15892,'2022-12-29','20','Fuel&Energy');
```

```
insert into Expense
```

```
values (8,'Summer2022',67543,'2022-06-23','10','Salary');
```

```
insert into Expense
```

```
values (9,'Fall2022',85679,'2022-09-12','13','Fuel&Energy');
```

```
insert into Expense
```

```
values (10,'Winter2022',15679,'2022-10-20','11','Electricity');
```

```
insert into Expense
values (11,'Spring2022',78342,'2022-04-19','15','Electricity');

insert into Expense
values (12,'Summer2022',12981,'2022-07-22','12','Fuel&Energy');

insert into Expense
values (13,'Winter2022',34528,'2022-12-01','13','Electricity');

insert into Expense
values (14,'Spring2022',48765,'2022-02-17','10','Salary');

insert into Expense
values (15,'Summer2022',96785,'2022-06-22','18','Fuel&Energy');

insert into Expense
values (16,'Fall2022',12867,'2022-10-11','13','Electricity');

insert into Expense
values (17,'Summer2022',76854,'2022-08-12','5','Salary');

insert into Expense
values (18,'Spring2022',67907,'2022-03-23','9','Fuel&Energy');

insert into Expense
values (19,'Winter2022',23412,'2022-11-18','11','Electricity');

insert into Expense
values (20,'Summer2022',24537,'2022-08-24','18','Salary');

insert into Expense
values (21,'Winter2022',90864,'2022-11-30','10','Fuel&Energy');

insert into Expense
values (22,'Spring2022',65734,'2022-10-19','12','Electricity');

insert into Expense
values (23,'Fall2022',56123,'2022-12-20','10','Salary');

insert into Expense
```

```
values (24,'Winter2022',25670,'2022-12-09','12','Fuel&Energy');
insert into Expense
values (25,'Summer2022',11009,'2022-07-08','12','Electricity');
insert into Expense
values (26,'Spring2022',14389,'2022-04-11','20','Salary');
insert into Expense
values (27,'Fall2022',45309,'2022-10-16','11','Fuel&Energy');
insert into Expense
values (28,'Summer2022',67213,'2022-07-16','12','Electricity');
insert into Expense
values (29,'Spring2022',80976,'2022-03-19','11','Salary');
insert into Expense
values (30,'Winter2022',58079,'2022-12-18','12','Fuel&Energy');
insert into Expense
values (31,'Fall2022',67871,'2022-11-12','12','Salary');
insert into Expense
values (32,'Fall2022',67845,'2022-10-12','13','Salary');
insert into Expense
values (33,'Fall2022',23410,'2022-11-19','14','Salary');
insert into Expense
values (34,'Fall2022',22365,'2022-11-22','10','Salary');
insert into Expense
values (35,'Spring2022',98198,'2022-01-10','10','Salary');
insert into Expense
values (36,'Spring2022',11606,'2022-02-11','5','Salary');
insert into Expense
values (37,'Spring2022',76662,'2022-03-12','18','Salary');
```

```
insert into Expense
values (38,'Spring2022',24696,'2022-04-13','10','Salary');

insert into Expense
values (39,'Summer2022',96191,'2022-05-10','20','Salary');

insert into Expense
values (40,'Summer2022',24696,'2022-06-11','11','Salary');

insert into Expense
values (41,'Summer2022',77143,'2022-07-12','12','Salary');

insert into Expense
values (42,'Summer2022',01918,'2022-08-13','13','Salary');

insert into Expense
values (43,'Fall2022',67871,'2022-12-11','12','Salary');

insert into Expense
values (44,'Fall2022',67845,'2022-10-12','13','Salary');

insert into Expense
values (45,'Fall2022',23410,'2022-11-19','14','Salary');

insert into Expense
values (46,'Fall2022',22365,'2022-11-22','10','Salary');

insert into Expense
values (47,'Spring2022',98198,'2022-01-10','10','Salary');

insert into Expense
values (48,'Spring2022',11606,'2022-02-11','5','Salary');

insert into Expense
values (49,'Spring2022',76662,'2022-03-12','18','Salary');

insert into Expense
values (50,'Spring2022',24696,'2022-04-13','10','Salary');

insert into Expense
```

```
values (51,'Summer2022',96191,'2022-05-10','20','Salary');
```

```
insert into Expense
```

```
values (52,'Summer2022',24696,'2022-06-11','11','Salary');
```

```
insert into Expense
```

```
values (53,'Summer2022',77143,'2022-07-12','12','Salary');
```

```
insert into Expense
```

```
values (54,'Summer2022',01918,'2022-08-13','13','Salary');
```

```
select * from Expense;
```

```
-- Insert values for table Electricity
```

```
Insert into electricity
```

```
values (3,120,0.1,5101);
```

```
Insert into electricity
```

```
values (6,120,0.1,5102);
```

```
Insert into electricity
```

```
values (10,110,0.1,5103);
```

```
Insert into electricity
```

```
values (11,150,0.1,5101);
```

```
Insert into electricity
```

```
values (13,130,0.1,5102);
```

```
Insert into electricity
```

```
values (16,130,0.1,5103);
```

```
Insert into electricity
```

```
values (19,110,0.1,5102);
```

Insert into electricity
values (22,120,0.1,5101);

Insert into electricity
values (25,120,0.1,5102);

Insert into electricity
values (28,120,0.1,5103);

-- Insert Values for Fuel &Energy

insert into FuelEnergy
values (2,8104,'Gas Refill',50,0.2);

insert into FuelEnergy
values (7,8105,'Gas Refill',100,0.2);

insert into FuelEnergy
values (9,8106,'Petrol Refill',130,0.1);

insert into FuelEnergy
values (12,8104,'Gas Refill',60,0.2);

insert into FuelEnergy
values (15,8101,'Gas Refill',90,0.2);

insert into FuelEnergy
values (18,8102,'Energy Refill',30,0.3);

insert into FuelEnergy
values (21,8108,'Oil Refill',100,0.1);

insert into FuelEnergy
values (24,8107,'Gas Refill',60,0.2);

insert into FuelEnergy
values (27,8105,'Oil Refill',110,0.1);

insert into FuelEnergy

values (30,8104,'Gas Refill',60,0.2);

-- Insert values Into Salary

Insert into Salary

Values (1,211,'2022-10-11','2022-10-30',12,1);

Insert into Salary

Values (4,212,'2022-06-11','2022-06-21',13,1);

Insert into Salary

Values (5,214,'2022-10-11','2022-10-30',7,2);

Insert into Salary

Values (8,212,'2022-11-11','2022-11-22',10,1);

Insert into Salary

Values (14,215,'2022-09-01','2022-09-30',10,1);

Insert into Salary

Values (17,213,'2022-04-20','2022-05-20',5,1);

Insert into Salary

Values (20,219,'2022-03-10','2022-04-10',9,1);

Insert into Salary

Values (23,220,'2022-02-11','2022-02-21',10,1);

Insert into Salary

Values (26,216,'2022-05-09','2022-05-21',10,1);

Insert into Salary

Values (29,214,'2022-09-07','2022-09-17',11,1);

Insert into Salary

Values (31,213,'2022-10-11','2022-10-30',12,1);

Insert into Salary

Values (32,218,'2022-06-11','2022-06-21',13,1);

Insert into Salary

Values (33,219,'2022-10-11','2022-10-31',7,2);

Insert into Salary

Values (34,220,'2022-11-11','2022-11-22',10,1);

Insert into Salary

Values (35,217,'2022-09-01','2022-09-30',10,1);

Insert into Salary

Values (36,214,'2022-04-20','2022-05-20',5,1);

Insert into Salary

Values (37,211,'2022-03-10','2022-04-10',9,2);

Insert into Salary

Values (38,213,'2022-02-11','2022-02-21',10,1);

Insert into Salary

Values (39,215,'2022-05-09','2022-05-21',10,2);

Insert into Salary

Values (40,219,'2022-09-07','2022-09-17',11,1);

Insert into Salary

Values (41,220,'2022-10-11','2022-10-30',12,1);

Insert into Salary

Values (42,212,'2022-10-11','2022-10-21',13,1);

Queries:

1.

The screenshot shows a SQL query editor with the following query:

```
1  
2 • select * from salary where numberofhours=10;  
3  
4
```

The results are displayed in a table with the following columns: ExpenseID, EmployeeID, SalaryStartDate, SalaryEndDate, NumberOfHours, and Wage.

ExpenseID	EmployeeID	SalaryStartDate	SalaryEndDate	NumberOfHours	Wage
8	212	2022-11-11	2022-11-22	10	1
14	215	2022-09-01	2022-09-30	10	1
23	220	2022-02-11	2022-02-21	10	1
26	216	2022-05-09	2022-05-21	10	1
34	220	2022-11-11	2022-11-22	10	1
35	217	2022-09-01	2022-09-30	10	1
38	213	2022-02-11	2022-02-21	10	1
39	215	2022-05-09	2022-05-21	10	2
*	HULL	HULL	HULL	HULL	HULL

2.

The screenshot shows a SQL query editor with the following query:

```
1  
2 • select employeeID, FirstName, lastname, lastdate from employee where lastdate is not null;  
3  
4
```

The results are displayed in a table with the following columns: employeeID, FirstName, lastname, and lastdate.

employeeID	FirstName	lastname	lastdate
214	Vinicius	Junior	2022-10-18
217	Luka	Modric	2022-02-19

employee 4 x Read Only

3.

create tables* SQL File 3* x SQL File 4*

Limit to 1000 rows

```
1 • select * from department where Job_Description='cleaning' or Dept_Location='downtown crossing';
```

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

DepartmentID	Dept_Location	Job_Description
101	Ruggles	Cleaning
103	Government Center	Cleaning
104	Downtown Crossing	Helpers
107	Downtown Crossing	Ticket Supervisor
108	Charles MGH	Cleaning
NULL	NULL	NULL

Result Grid
Form Editor
Field Types
Query Stats

4.

create tables* SQL File 3* x SQL File 4*

Limit to 1000 rows

```
1 • select a.employeeID, firstname, lastname, b.departmentid from employee a inner join department b on a.departmentid=b.departmentid;
```

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

employeeID	firstname	lastname	departmentid
211	Sergio	Ramos	101
212	Cristiano	Ronaldo	102
213	Karim	Benzema	104
214	Vinicius	Junior	106
215	Gareth	Bale	108
216	Jay	park	102
217	Luka	Modric	108
218	Suga	Min	105
219	Kim	Hyun	106
220	Yang	Son	103

Result 7 x | Read Only

5.

create tables* SQL File 3* SQL File 4*

Limit to 1000 rows

```
1 • select a.vehicleID, start_place, end_place, license_plate_num from vehicle a left outer join bus b on a.vehicleID=b.VehicleID;
```

Result Grid Filter Rows: Export: Wrap Cell Content: [IA](#)

	vehideID	start_place	end_place	license_plate_num
▶	8101	fenway	shrewsbury	6HV8I9
	8102	Cambridge	Huntington	6HV8O9
	8103	Charlestown	Fenway	6HV909
	8104	Assembly	Hay Market	NULL
	8105	Charlestown	Roxbury	NULL
	8106	Copley	Symphony	NULL
	8107	Hynes	Brigham	NULL
	8108	Heath Street	Oak	NULL
	8109	Dorchester	Somerville	NULL
	8110	Chelsea	Hanging street	NULL
	8111	Framingham	South Station	NULL
	8112	Taunton	Union square	NULL
	8113	Raynham	Central	NULL
	8114	Stoughton	Quincy	NULL
	8115	Dorchester	Oak	6HV719

Result 1 x Read Only

Result Grid
Form Editor
Field Types
Query Stats