

LOGISTICS MANAGEMENT SYSTEM

Project Report



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Project Description

Logistics management includes multiple processes that ensure seamless movement of goods, freight, parcels, raw materials, finished inventory and packages from its point of origin to end-customers.

Why is logistics management important?

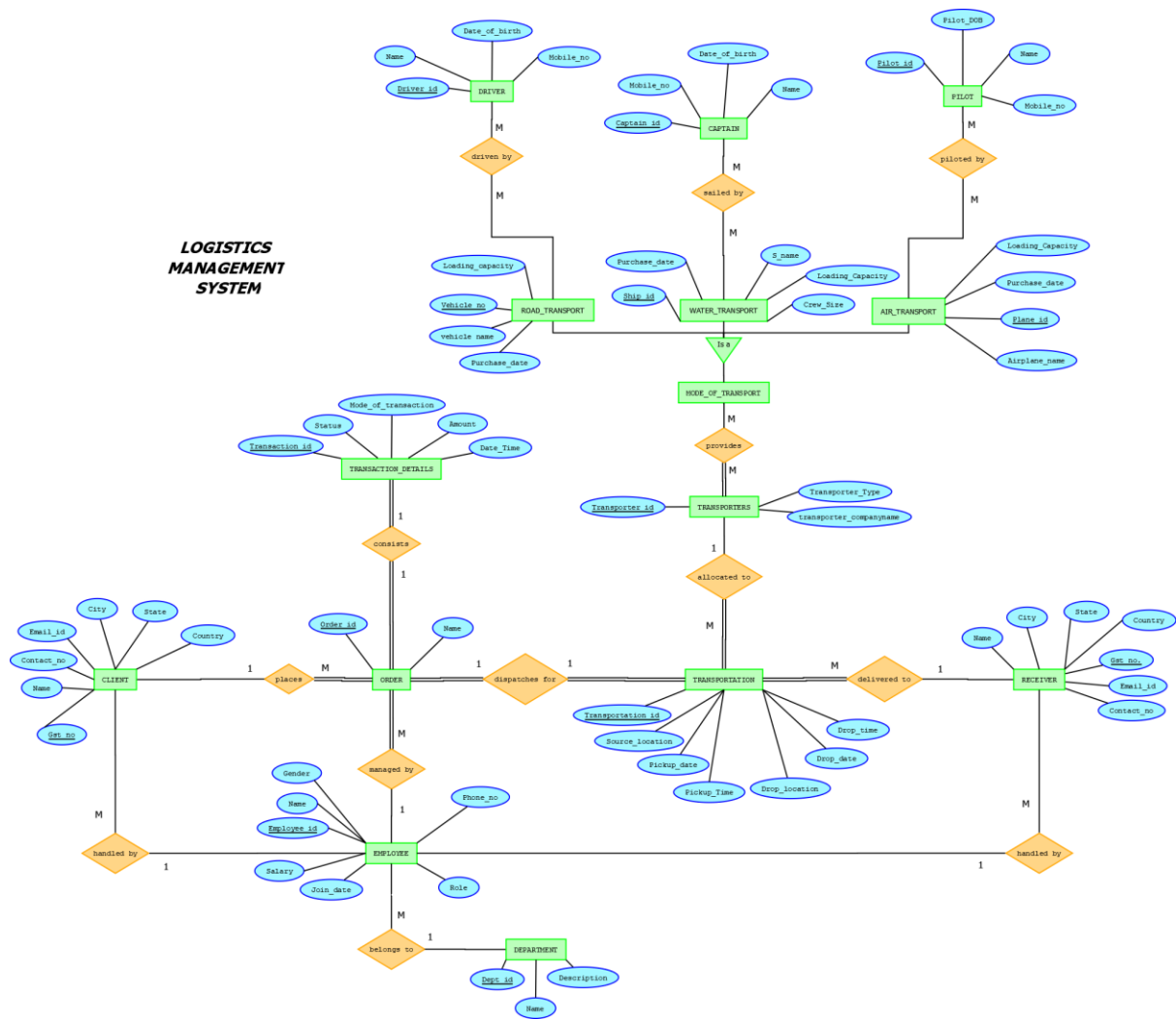
The increasing complexity involved in the movement of goods from the point of origin to the point of consumption has made logistics management critical with regards to keeping up with changing customer needs, growing competition and evolving market dynamics. Logistics is the key to utilizing, planning, implementing and controlling the flow and storage of goods and services to meet customer requirements. Efficient logistics management provides clear visibility of transportation activities involved in ensuring smooth supply chain operations.

The fundamental element of any logistics company is its records; without accurate records, companies simply can't deliver the basic services they need to provide. Databases provide fast, safe, and effective means to store this information, and databases are at the core of most logistics-related information stores. Logistics Company offers import, export, and transportation services. Different clients can place the order of movement of various types of products from one location to another. It includes transportation by air, sea, and land. In air transportation, our company can provide transportation from many airports throughout India i.e., Mumbai, Ahmedabad, Delhi, Kolkata, Etc. Sea transportation can be done through different ports like Mundra, Mumbai, Visakhapatnam, etc. The company also provides various sizes of vehicles for road transportation. Clients can place multiple orders simultaneously which contains details like consignment date, Details of the products which are being transported, pickup and Drop Locations, and means of transportation of goods. Then when the transaction is successful, the order will be allocated to be transported to the desired destination.

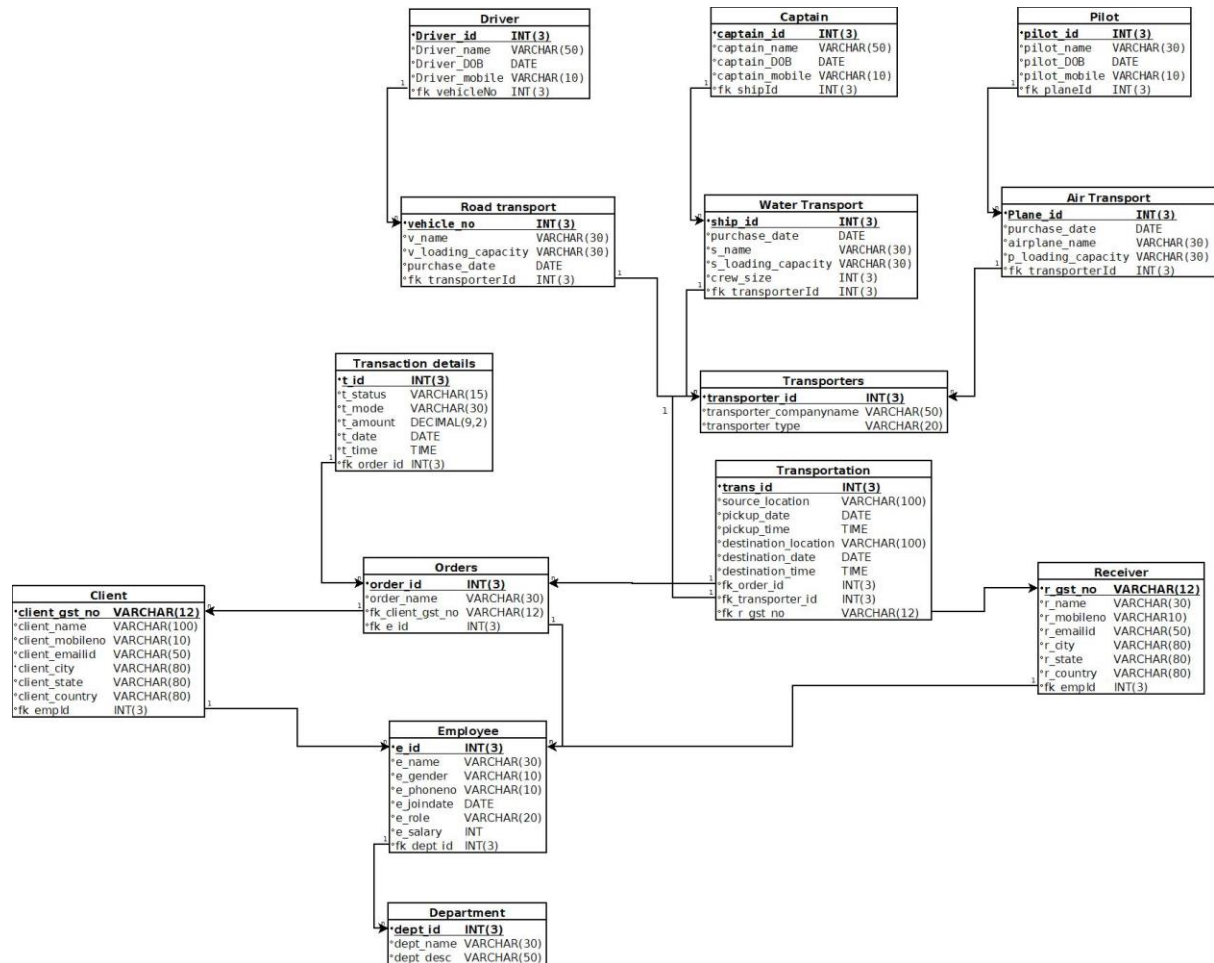
Scope

The logistics management system is used to meet customer demands through planning, control, and implementation of the effective movement and storage of related information, goods, and services from origin to destination. Logistic management system software provides many features like Client list management, Processing orders, Fleet management, Transaction records. This logistics management system project can track the transportation duration of goods.

Entity Relation Diagram



Schema Diagram



Functional Dependencies and Normalization Forms

- Client (This table follows 3NF and BCNF)

(client_gst_no, client_name, client_mobilenno, client_emailid, client_city, client_state, client_country, fk_empld)

client_gst_no -> client_name

client_gst_no -> client_mobilenno

client_gst_no -> client_emailid

client_gst_no -> client_city

client_gst_no -> client_state

client_gst_no -> client_country

client_gst_no -> fk_empld

Constraints:-

- Candidate Keys: { client_gst_no }
- Primary Key: { client_gst_no }
- Non-key Attributes: { client_name, client_mobilenno, client_emailid, client_city, client_state, client_country, fk_empld }

Normalization Details:-

This table is in 3NF and BCNF because it doesn't have multiple values, partial dependencies, transitive dependencies and for every Functional Dependency, LHS is super key.

- Order

(order_id, order_name, fk_client_gst_no, fk_e_id)

order_id -> order_name

order_id -> fk_client_gst_no

order_id -> fk_e_id

Constraints:-

- Candidate Keys: {order_id}
- Primary Key: {order_id }
- Non-key Attributes: {order_name, fk_client_gst_no, fk_e_id }

Normalization Details:-

This table is in 3NF and BCNF because it doesn't have multiple values, partial dependencies, transitive dependencies and for every Functional Dependency, LHS is super key.

- Transactions (This table follows 3NF and BCNF)

(t_id,t_status,t_mode,t_amount,t_date,t_time,fk_order_id)

t_id -> t_status

t_id -> t_mode

t_id -> t_amount

t_id -> t_date

t_id -> t_time

t_id -> fk_order_id

Constraints:-

- Candidate Keys: { t_id }
- Primary Key: {t_id}
- Non-key Attributes: {t_status, t_mode, t_amount, t_date, t_time, fk_order_id}

Normalization Details:-

This table is in 3NF and BCNF because it doesn't have multiple values, partial dependencies, transitive dependencies and for every Functional Dependency, LHS is super key.

- Employee (This table follows 3NF and BCNF)

(e_id,e_name,e_gender,e_phoneno,e_joindate,e_role, e_salary, fk_dept_id)

e_id -> e_name

e_id -> e_gender

e_id -> e_phoneno

e_id -> e_joindate

e_id -> e_role

e_id -> fk_dept_id

e_id -> e_salary

Constraints:-

- Candidate Keys: {e_id }
- Primary Key: {e_id}
- Non-key Attributes: {e_name ,e_gender ,e_joindate ,e_role, e_salary, fk_dept_id}

Normalization Details:-

This table is in 3NF and BCNF because it doesn't have multiple values, partial dependencies, transitive dependencies and for every Functional Dependency, LHS is super key.

- Department (This table follows 3NF and BCNF)

(dept_id, dept_name, dept_desc)

dept_id->dept_name

dept_id->dept_desc

Constraints:-

- Candidate Keys: {dept_id}
- Primary Key: {dept_id}
- Non-key Attributes: {dept_name, dept_desc }

Normalization Details:-

This table is in 3NF and BCNF because it doesn't have multiple values, partial dependencies, transitive dependencies and for every Functional Dependency, LHS is super key.

- **Transportation (This table follows 3NF and BCNF)**

(trans_id, fk_order_id, source_location, pickup_date, pickup_time, destination_location, destination_date, destination_time, fk_transporter_id, fk_r_gst_no)

Trans_id -> fk_order_id

Trans_id -> source_location

Trans_id -> pickup_date

Trans_id -> pickup_time

Trans_id -> destination_location

Trans_id -> destination_date

Trans_id -> destination_time

Trans_id -> fk_transporter_id,

Trans_id -> fk_r_gst_no

Constraints:-

- Candidate Keys: {trans_id}
- Primary Key: {trans_id}
- Non-key Attributes: {fk_order_id, source_location, pickup_date, pickup_time, destination_location, destination_date, destination_time, fk_transporter_id, fk_r_gst_no }

Normalization Details:-

This table is in 3NF and BCNF because it doesn't have multiple values, partial dependencies, transitive dependencies and for every Functional Dependency, LHS is super key.

- **Transporter (This table follows 3NF and BCNF)**

(transporter_id, transporter_companyname, transporter_type)

transporter_id → transporter_companyname

transporter_id → transporter_type

Constraints:-

- Candidate Keys: {transporter_id}
- Primary Key: {transporter_id}
- Non-key Attributes: {transporter_companyname, transporter_type }

Normalization Details:-

This table is in 3NF and BCNF because it doesn't have multiple values, partial dependencies, transitive dependencies and for every Functional Dependency, LHS is super key.

- Road Transport (This table follows 3NF and BCNF)

(vehicle_no, v_name, v_loading_capacity, purchase_date, fk_transporterId)

vehicle_no → v_name

vehicle_no → v_loading_capacity

vehicle_no → purchase_date

vehicle_no → fk_transporterId

Constraints:-

- Candidate Keys: {vehicle_no}
- Primary Key: {vehicle_no}
- Non-key Attributes: {v_name, v_loading_capacity, purchase_date, fk_transporterId}

Normalization Details:-

This table is in 3NF and BCNF because it doesn't have multiple values, partial dependencies, transitive dependencies and for every Functional Dependency, LHS is super key.

- Water Transport (This table follows 3NF and BCNF)

(ship_id, purchase_date, s_name, s_loading_capacity, crew_size, fk_transporterId)

ship_id → purchase_date

ship_id → s_name

ship_id → s_loading_capacity

ship_id → crew_size

ship_id → fk_transporterId

Constraints:-

- Candidate Keys: {ship_id}
- Primary Key: {ship_id}
- Non-key Attributes: {purchase_date, s_loading_capacity, crew_size, s_name, fk_transporterId}

Normalization Details:-

This table is in 3NF and BCNF because it doesn't have multiple values, partial dependencies, transitive dependencies and for every Functional Dependency, LHS is super key

- Air Transport (This table follows 3NF and BCNF)

(Plane_id, purchase_date, airplane_name, p_loading_capacity, fk_transporterId)

Plane_id -> purchase_date

Plane_id -> airplane_name

Plane_id -> p_loading_capacity

Plane_id -> fk_transporterId

Constraints:-

- Candidate Keys: {Plane_id}
- Primary Key: {Plane_id}
- Non-key Attributes: {purchase_date, airplane_name, p_loading_capacity, fk_transporterId}

Normalization Details:-

This table is in 3NF and BCNF because it doesn't have multiple values, partial dependencies, transitive dependencies and for every Functional Dependency, LHS is super key

- Driver (This table follows 3NF and BCNF)

(Driver_id, Driver_name, Driver_DOB, Driver_mobile, fk_vehicleNo)

Driver_id -> Driver_name

Driver_id -> Driver_DOB

Driver_id -> Driver_mobile

Driver_id -> fk_vehicleNo

Constraints:-

- Candidate Keys: {Driver_id}
- Primary Key: {Driver_id}
- Non-key Attributes: {Driver_name, Driver_DOB, Driver_mobile, fk_vehicleNo}

Normalization Details:-

This table is in 3NF and BCNF because it doesn't have multiple values, partial dependencies, transitive dependencies and for every Functional Dependency, LHS is super key.

- Captain (This table follows 3NF and BCNF)

(captain_id,captain_name,captain_DOB, captain_mobile,fk_shipId)

captain_id -> captain_name

captain_id -> captain_DOB

captain_id -> captain_mobile

captain_id -> fk_shipId

Constraints:-

- Candidate Keys: {captain_id}
- Primary Key: {captain_id }
- Non-key Attributes: {captain_name,captain_DOB, captain_mobile, fk_shipId}

Normalization Details:-

This table is in 3NF and BCNF because it doesn't have multiple values, partial dependencies, transitive dependencies and for every Functional Dependency, LHS is super key.

- Pilot (This table follows 3NF and BCNF)

(pilot_id,pilot_name,pilot_DOB,pilot_mobile,fk_planeId)

pilot_id -> pilot_name

pilot_id -> pilot_DOB

pilot_id -> pilot_mobile

pilot_id -> fk_planeId

Constraints:-

- Candidate Keys: {pilot_id}
- Primary Key: {pilot_id}
- Non-key Attributes: {pilot_name,pilot_DOB, pilot_mobile,fk_planeId}

Normalization Details:-

This table is in 3NF and BCNF because it doesn't have multiple values, partial dependencies, transitive dependencies and for every Functional Dependency, LHS is super key.

- Receiver (This table follows 3NF and BCNF)

(r_gst_no,r_name,r_mobilenno,r_emailid,r_address, r_city, r_state, r_country, fk_empld)

r_gst_no -> r_name

r_gst_no -> r_mobilenno

r_gst_no -> r_emailid

r_gst_no -> r_city

r_gst_no -> r_state

r_gst_no -> r_country

r_gst_no -> fk_empld

Constraints:-

- Candidate Keys: {r_id }
- Primary Key: {r_id}
- Non-key Attributes: {r_name, r_mobilenno, r_emailid, r_city, r_state, r_country, fk_empld}

Normalization Details:-

This table is in 3NF and BCNF because it doesn't have multiple values, partial dependencies, transitive dependencies and for every Functional Dependency, LHS is super key.

DDL Script

```
CREATE SCHEMA logistics_mngt;
```

```
SET SEARCH_PATH to logistics_mngt;
```

```
CREATE TABLE Department(
```

```
    dept_id INT PRIMARY KEY,
```

```
    dept_name VARCHAR(30),
```

```
    dept_desc VARCHAR(50)
```

```
);
```

```
CREATE TABLE Employee(
```

```
    e_id INT PRIMARY KEY,
```

```
    e_name VARCHAR(30),
```

```
    e_gender VARCHAR(10),
```

```
    e_phoneno VARCHAR(10),
```

```
    e_joindate DATE,
```

```
    e_role VARCHAR(20),
```

```
    e_salary INT,
```

```
    fk_dept_id INT REFERENCES Department(dept_id) ON DELETE CASCADE ON UPDATE  
CASCADE
```

```
);
```

```
CREATE TABLE Client(
```

```
    client_gst_no VARCHAR(15) PRIMARY KEY,
```

```
    client_name VARCHAR(30),
```

```
    client_mobilenumber VARCHAR(10),
```

```
    client_emailid VARCHAR(50),
```

```
    client_city VARCHAR(80),
```

```
    client_state VARCHAR(80),
```

```
    client_country VARCHAR(80),
```

```
    fk_empId INT REFERENCES Employee(e_id) ON DELETE SET DEFAULT ON UPDATE CASCADE  
);
```

```
CREATE TABLE Orders(  
    order_id INT PRIMARY KEY,  
    order_name VARCHAR(30),  
    fk_client_gst_no VARCHAR(15) REFERENCES Client(client_gst_no) ON DELETE CASCADE ON  
UPDATE CASCADE,  
    fk_e_id INT REFERENCES Employee(e_id) ON DELETE SET DEFAULT ON UPDATE CASCADE  
);
```

```
CREATE TABLE Transactions(  
    t_id INT PRIMARY KEY,  
    t_status VARCHAR(15),  
    t_mode VARCHAR(30),  
    t_amount DECIMAL(9,2),  
    t_date DATE,  
    t_time TIME,  
    fk_order_id INT REFERENCES Orders(order_id) ON DELETE CASCADE ON UPDATE CASCADE  
);
```

```
CREATE TABLE Transporter(  
    transporter_id INT PRIMARY KEY,  
    transporter_companyname VARCHAR(50),  
    transporter_type VARCHAR(20)  
);
```

```
CREATE TABLE Receiver(  
    r_gst_no VARCHAR(15) PRIMARY KEY,  
    r_name VARCHAR(30),  
    r_mobilenumber VARCHAR(10),  
    r_emailid VARCHAR(50),
```

```
    r_city VARCHAR(80),
    r_state VARCHAR(80),
    r_country VARCHAR(80),
    fk_empId INT REFERENCES Employee(e_id )
    ON DELETE CASCADE ON UPDATE CASCADE
);
```

```
CREATE TABLE Transportation(
    trans_id INT PRIMARY KEY,
    source_location VARCHAR(40),
    pickup_date DATE,
    pickup_time TIME,
    destination_location VARCHAR(40),
    destination_date DATE,
    destination_time TIME,
    fk_order_id INT REFERENCES Orders(order_id) ON DELETE CASCADE ON UPDATE CASCADE,
    fk_transporter_id INT REFERENCES Transporter(transporter_id) ON DELETE CASCADE ON
    UPDATE CASCADE,
    fk_r_gst_no VARCHAR(15) REFERENCES Receiver(r_gst_no) ON DELETE CASCADE ON
    UPDATE CASCADE
);
```

```
CREATE TABLE RoadTransport(
    vehicle_no INT PRIMARY KEY,
    v_name VARCHAR(30),
    v_loading_capacity INT,
    purchase_date DATE,
    fk_transporterId INT REFERENCES Transporter(transporter_id) ON DELETE CASCADE ON
    UPDATE CASCADE
```

);

```
CREATE TABLE WaterTransport(  
    ship_id INT PRIMARY KEY,  
    purchase_date DATE,  
    s_name VARCHAR(30),  
    s_loading_capacity INT,  
    crew_size INT,  
    fk_transporterId INT REFERENCES Transporter(transporter_id) ON DELETE CASCADE ON  
UPDATE CASCADE  
);
```

```
CREATE TABLE AirTransport(  
    Plane_id INT PRIMARY KEY,  
    purchase_date DATE,  
    airplane_name VARCHAR(30),  
    p_loading_capacity INT,  
    fk_transporterId INT REFERENCES Transporter(transporter_id) ON DELETE CASCADE ON  
UPDATE CASCADE  
);
```

```
CREATE TABLE Driver(  
    Driver_id INT PRIMARY KEY,  
    Driver_name VARCHAR(30),  
    Driver_DOB DATE,  
    Driver_mobile VARCHAR(10),  
    fk_vehicleNo INT REFERENCES RoadTransport(vehicle_no) ON DELETE CASCADE ON UPDATE  
CASCADE  
);
```

```
CREATE TABLE Captain(  
    captain_id INT PRIMARY KEY,
```



```
captain_name VARCHAR(30),  
captain_DOB DATE,  
captain_mobile VARCHAR(10),  
fk_shipId INT REFERENCES WaterTransport(ship_id) ON DELETE CASCADE ON UPDATE  
CASCADE  
);
```

```
CREATE TABLE Pilot(  
pilot_id INT PRIMARY KEY,  
pilot_name VARCHAR(30),  
pilot_DOB DATE,  
pilot_mobile VARCHAR(10),  
fk_planeId INT REFERENCES AirTransport(Plane_id) ON DELETE CASCADE ON UPDATE  
CASCADE  
);
```

Insert Statements

```
INSERT INTO department VALUES (1,'Management','Managing department');
INSERT INTO department VALUES (2,'Agent','Agent');
INSERT INTO department VALUES (3,'IT','IT'),(4,'Finance','Finance'),(5,'Executives','Customer Care');
INSERT INTO department VALUES (6,'Marketing','Advertisement');
INSERT INTO department VALUES (7,'Clerical','Daily office duty and support');
```

```
INSERT INTO Employee VALUES(1,'Pavan','Male',8764543562,'2015-08-03','Senior
Manager',69000,1);
INSERT INTO Employee VALUES(2,'Devarsh','Male',9264543562,'2018-04-09','Finance
Head',50000,4);
INSERT INTO Employee VALUES(3,'Pranay','Male',9934562344,'2017-06-25','Marketing
Head',60000,6);
INSERT INTO Employee VALUES(4,'Narendra','Male',9876556734,'2014-06-03','Executives',60000,5);
INSERT INTO Employee VALUES(5,'Amit','Male',7374556834,'2013-01-03','Agent',65000,2);
INSERT INTO Employee VALUES(6,'Siri','Female',8745276477,'2010-04-23','Clerk',20000,7);
INSERT INTO Employee VALUES(7,'Bhavesh','Male',9134567023,'2008-05-13','Business
consultant',40000,6);
INSERT INTO Employee VALUES(8,'Krish','Male',7456286488,'2007-11-26','COO',70000,1);
```

```
INSERT INTO Client
VALUES('24ABCDE1234F1Z5','Dhvani',9932376544,'dhvani123@gmail.com','Vadodara','Gujarat','India',1);
INSERT INTO Client VALUES('27SEXYR6969A1Z4','Elon Musk',8765444345,'elon55@gmail.com','Los
Angeles','California','USA',3);
INSERT INTO Client VALUES('07AAAAA0000A0Z0','Zakir
Khan',7765444345,'zakir10@gmail.com','Noida','Delhi','India',2);
INSERT INTO Client VALUES('03BBBBB1111B1Z1','Arijit
Singh',8176365643,'arijit34@gmail.com','Amritsar','Punjab','India',4);
INSERT INTO Client VALUES('29BBBBB1111B1Z1','Jeff
Bezos',9134365652,'jeff11@gmail.com','Melbourne','Victoria','Australia',5);
```

```
INSERT INTO Orders VALUES(2021010001,'Car Transportation','07AAAAA0000A0Z0',4);
INSERT INTO Orders VALUES(2021050002,'Package Transportation','03BBBBB1111B1Z1',1);
INSERT INTO Orders VALUES(2021020003,'Shoes Transportation','27SEXYR6969A1Z4',2);
INSERT INTO Orders VALUES(2021080004,'Aluminium Transportation','24ABCDE1234F1Z5',4);
INSERT INTO Orders VALUES(2021110005,'Toys Transportation','03BBBBB1111B1Z1',5);
INSERT INTO Orders VALUES(2021060006,'Clothing Transportation','29BBBBB1111B1Z1',3);
INSERT INTO Orders VALUES(2021010007,'Animal Transportation','07AAAAA0000A0Z0',2);
INSERT INTO Orders VALUES(2021030008,'Oil Transportation','24ABCDE1234F1Z5',4);
INSERT INTO Orders VALUES(2021120009,'Cement Transportation','07AAAAA0000A0Z0',1);
INSERT INTO Orders VALUES(2021090010,'Gas-Based Fuels Transportation','29BBBBB1111B1Z1',5);
INSERT INTO Orders VALUES(2021020011,'Machinery Transportation','24ABCDE1234F1Z5',2);
INSERT INTO Orders VALUES(2021070012,'Wine Transportation','03BBBBB1111B1Z1',3);
INSERT INTO Orders VALUES(2021110013,'Grain Transportation','07AAAAA0000A0Z0',1);
INSERT INTO Orders VALUES(2021120014,'Bus Transportation','24ABCDE1234F1Z5',4);
INSERT INTO Orders VALUES(2021050015,'Kerosene Transportation','29BBBBB1111B1Z1',2);
INSERT INTO Orders VALUES(2021010016,'Televisions Transportation','27SEXYR6969A1Z4',1);
INSERT INTO Orders VALUES(2021030017,'Sugar Transportation','03BBBBB1111B1Z1',5);
INSERT INTO Orders VALUES(2021100018,'Paper Transportation','07AAAAA0000A0Z0',3);
INSERT INTO Orders VALUES(2021090019,'Coal Transportation','24ABCDE1234F1Z5',1);
INSERT INTO Orders VALUES(2021070020,'Meat Transportation','27SEXYR6969A1Z4',2);
```

```
INSERT INTO Transactions VALUES(1,'successful','upi',40000.12,'2021-01-21','02:03:04',2021010001);

INSERT INTO Transactions VALUES(2,'successful','neft',15000.12,'2021-02-04','05:01:02',2021020003);
```

```
INSERT INTO Transactions VALUES(3,'failed','upi',10000.33,'2021-05-11','15:03:01',2021050002);

INSERT INTO Transactions VALUES(4,'successful','upi',40000.23,'2021-02-07','17:33:54',2021020011);

INSERT INTO Transactions VALUES(5,'successful','imps',53000.41,'2021-05-21','10:54:31',2021050015);

INSERT INTO Transactions VALUES(6,'successful','upi',11000.45,'2021-07-31','12:08:46',2021070020);

INSERT INTO Transactions VALUES(7,'pending','upi',34000.63,'2021-12-14','21:01:33',2021120009);

INSERT INTO Transactions VALUES(8,'successful','neft',41000.10,'2021-10-26','20:45:22',2021100018);

INSERT INTO Transactions VALUES(9,'successful','upi',20000.31,'2021-11-17','12:34:11',2021110005);

INSERT INTO Transactions VALUES(10,'successful','imps',42000.57,'2021-07-09','11:23:45',2021070012);

INSERT INTO Transactions VALUES(11,'failed','upi',22000.78,'2021-03-30','21:56:21',2021030008);

INSERT INTO Transactions VALUES(12,'successful','neft',70000.00,'2021-09-17','15:45:22',2021090019);

INSERT INTO Transactions VALUES(13,'successful','imps',31000.34,'2021-06-29','14:00:32',2021060006);

INSERT INTO Transactions VALUES(14,'successful','upi',44000.66,'2021-09-23','13:54:11',2021090010);

INSERT INTO Transactions VALUES(15,'successful','neft',55000.89,'2021-11-14','18:43:21',2021110013);

INSERT INTO Transactions VALUES(16,'successful','upi',35000.09,'2021-03-13','04:25:11',2021030017);

INSERT INTO Transactions VALUES(17,'successful','upi',2000.12,'2021-10-19','19:24:55',2021010016);

INSERT INTO Transactions VALUES(18,'successful','neft',2000.12,'2021-11-22','16:32:12',2021110005);

INSERT INTO Transactions VALUES(19,'pending','upi',2000.12,'2021-11-03','23:45:55',2021120014);

INSERT INTO Transactions VALUES(20,'successful','imps',2000.12,'2021-06-27','11:37:11',2021010007);
```

```
INSERT INTO Transporter VALUES(1,'Chartered Logistics Ltd','Road');
INSERT INTO Transporter VALUES(2,'ABC India Limited','Road');
INSERT INTO Transporter VALUES(3,'Coastal Roadways Limited','Road');
INSERT INTO Transporter VALUES(4,'Coastal Waterways','Water');
INSERT INTO Transporter VALUES(5,'The Great Eastern Shipping Co Ltd','Water');
INSERT INTO Transporter VALUES(6,'ESSAR SHIPPING LTD','Water');
INSERT INTO Transporter VALUES(7,'Alpha Cargo Express Private Limited','Air');
INSERT INTO Transporter VALUES(8,'Delhivery','Air');
INSERT INTO Transporter VALUES(9,'Western Carriers India Limited','Air');
```

```
INSERT INTO Receiver
VALUES('27CDFGH2356K8L9','Paul',9976543211,'paul23@gmail.com','Bombay','Maharashtra','India',1
);
```

```
INSERT INTO Receiver
VALUES('24LDSFT5631L2B7','Aakash',9864324805,'aakash12@gmail.com','Vadodara','Gujarat','India'
,3);
```

```
INSERT INTO Receiver
VALUES('24SAFWF7632M7S0','Michael',8927745190,'micheal52@gmail.com','Ahmedabad','Gujarat',
'India',4);
```

```
INSERT INTO Receiver
VALUES('23KJFDG9732V2H8','Dev',6431167839,'dev003@gmail.com','Bhopal','Madhyapradesh','Indi
a',2);
```

```
INSERT INTO Receiver
VALUES('27HKMSU4672N8C2','Shawn',7025712625,'shawn89@gmail.com','Pune','Maharashtra','Indi
a',5);
```

```
INSERT INTO Transportation VALUES(1,'Bombay','2021-01-26','04:03:04','Vadodara','2021-02-
15','03:30:21',2021010001,1,'24SAFWF7632M7S0');
```

```
INSERT INTO Transportation VALUES(2,'Ahmedabad','2021-02-10','12:43:43','Kolkata','2021-02-
15','06:23:34',2021020003,2,'23KJFDG9732V2H8');
```

```
INSERT INTO Transportation VALUES(3,'Pune','2021-02-14','15:54:56','Chandigarh','2021-02-
28','12:32:43',2021020011,3,'27HKMSU4672N8C2');
```

INSERT INTO Transportation VALUES(4,'Rajkot','2021-05-27','02:03:04','Ahmedabad','2021-06-05','21:43:14',2021050015,2,'23KJFDG9732V2H8');

INSERT INTO Transportation VALUES(5,'Delhi','2021-08-05','20:23:32','Pune','2021-08-10','15:34:42',2021070020,7,'24LDSFT5631L2B7');

INSERT INTO Transportation VALUES(6,'Banglore','2021-10-30','12:44:04','Rajkot','2021-11-04','15:32:34',2021100018,8,'27HKMSU4672N8C2');

INSERT INTO Transportation VALUES(7,'Chennai','2021-11-22','22:24:12','Dubai','2021-12-06','05:02:11',2021110005,6,'27CDFGH2356K8L9');

INSERT INTO Transportation VALUES(8,'Manchester','2021-07-15','21:32:36','Banglore','2021-07-25','13:07:21',2021070012,9,'24SAFWF7632M7S0');

INSERT INTO Transportation VALUES(9,'Kolkata ','2021-09-23','14:41:34','Miami','2021-10-10','05:56:42',2021090019,5,'27CDFGH2356K8L9');

INSERT INTO Transportation VALUES(10,'Delhi','2021-07-05','02:03:04','Chennai','2021-07-12','03:30:21',2021060006,4,'24LDSFT5631L2B7');

INSERT INTO Transportation VALUES(11,'Surat','2021-10-28','20:02:15','Banglore','2021-11-06','17:57:23',2021090010,1,'23KJFDG9732V2H8');

INSERT INTO Transportation VALUES(12,'Bhopal','2021-11-20','08:29:40','Delhi','2021-11-29','00:24:31',2021110013,3,'24LDSFT5631L2B7');

INSERT INTO Transportation VALUES(13,'San Diego','2021-03-20','11:30:49','Bombay','2021-04-10','13:21:46',2021030017,9,'24SAFWF7632M7S0');

INSERT INTO Transportation VALUES(14,'Barcelona','2021-10-28','17:09:18','Delhi','2021-11-12','23:45:12',2021010016,4,'27CDFGH2356K8L9');

INSERT INTO Transportation VALUES(15,'Ahmedabad','2021-11-27','19:45:08','London','2021-12-04','14:26:01',2021110005,6,'23KJFDG9732V2H8');

INSERT INTO Transportation VALUES(16,'Los Angeles','2021-07-03','02:03:04','Jaipur','2021-07-19','03:30:21',2021010007,8,'27HKMSU4672N8C2');

INSERT INTO RoadTransport VALUES(8863,'TATA ACE',0.85,'2014-07-21',2);

INSERT INTO RoadTransport VALUES(7005,'TATA TAURUS',21,'2008-10-06',3);

INSERT INTO RoadTransport VALUES(6783,'Ashok Leyland',7,'2010-05-25',1);

INSERT INTO WaterTransport VALUES(2314563,'2006-04-30','Algoma Mariner',29,20,6);

INSERT INTO WaterTransport VALUES(5679142,'2007-02-05','SS Argus',25,23,5);

INSERT INTO WaterTransport VALUES(3578014,'2009-08-15','MS Antenor',27,25,4);

INSERT INTO WaterTransport VALUES(4515731,'1990-02-23','Akebono Maru',29,22,4);

INSERT INTO AirTransport VALUES(2491,'2010-07-23','BOEING B737-400F',20,8);

INSERT INTO AirTransport VALUES(2781,'2000-01-10','AIRBUS A300 B4F',43,7);

INSERT INTO AirTransport VALUES(9865,'2009-12-29','BOEING MD 11F',85,9);

INSERT INTO Driver VALUES(101,'John','1989-06-13',9842844489,6783);

INSERT INTO Driver VALUES(102,'Harry','1992-03-29',7826469914,7005);

INSERT INTO Driver VALUES(103,'David','1993-12-15',8732679742,8863);

INSERT INTO Captain VALUES(201,'Robert','1978-03-22',9923498799,2314563);

INSERT INTO Captain VALUES(202,'Joseph','1975-09-11',8754434876,5679142);

INSERT INTO Captain VALUES(203,'Felix','1970-01-12',7933489733,3578014);

INSERT INTO Pilot VALUES(301,'Jack','1986-03-22',9873212577,2491);

INSERT INTO Pilot VALUES(302,'Alex','1981-06-15',6338890134,2781);

INSERT INTO Pilot VALUES(303,'Walt','1983-03-08',8321190432,9865);

Query 3: Get order details of top three transaction amount.

```

SELECT o.*,tr.t_amount FROM transactions tr
JOIN orders o ON tr.fk_order_id=o.order_id
ORDER BY t_amount DESC LIMIT 3;

```

```

1 SELECT o.*,tr.t_amount FROM transactions tr
2 JOIN orders o ON tr.fk_order_id=o.order_id
3 ORDER BY t_amount DESC LIMIT 3;
4

```

Data Output Explain Messages Notifications

	order_id integer	order_name character varying (30)	fk_client_gst_no character varying (15)	fk_e_id integer	t_amount numeric (9,2)
1	2021090019	Coal Transportation	24ABCDE1234F1Z5	1	70000.00
2	2021020030	Wool Transportation	08STQVW2345N5V3	2	60000.00
3	2021040023	WoodTransportation	27JKLMN7890X2Z4	2	56787.65

Query 4: List of transporters that have delivered orders to Bangalore.

```

SELECT t.* from transporter t
JOIN transportation tr ON tr.fk_transporter_id=t.transporter_id
WHERE destination_location = 'Banglore'
GROUP BY t.transporter_id;

```

```

1 SELECT t.* from transporter t
2 JOIN transportation tr ON tr.fk_transporter_id=t.transporter_id
3 WHERE destination_location = 'Banglore'
4 GROUP BY t.transporter_id;
5
6

```

Data Output Explain Messages Notifications

	transporter_id [PK] integer	transporter_companyname character varying (50)	transporter_type character varying (20)
1	1	Chartered Logistics Ltd	Road
2	3	Coastal Roadways Limited	Road
3	9	Western Carriers India Limited	Air

Query 5: No. of orders completed by each transporter

```

SELECT Distinct on (t.transporter_id) t.transporter_id,
t.transporter_companyname,COUNT(t.transporter_id) FROM transporter t
JOIN transportation tr ON tr.fk_transporter_id=t.transporter_id
JOIN orders o ON o.order_id=tr.fk_order_id
GROUP BY t.transporter_id;

```

1	SELECT Distinct on (t.transporter_id) t.transporter_id,
2	t.transporter_companyname,COUNT(t.transporter_id) FROM transporter t
3	JOIN transportation tr ON tr.fk_transporter_id=t.transporter_id
4	JOIN orders o ON o.order_id=tr.fk_order_id
5	GROUP BY t.transporter_id;
6	

Data Output	Explain	Messages	Notifications
transporter_id [PK] integer	transporter_companyname character varying (50)	count bigint	
1	1 Chartered Logistics Ltd	3	
2	2 ABC India Limited	3	
3	3 Coastal Roadways Limited	3	
4	4 Coastal Waterways	3	
5	5 The Great Eastern Shipping Co Ltd	1	
6	6 ESSAR SHIPPING LTD	3	
7	7 Alpha Cargo Express Private Limited	2	
8	8 Delhivery	3	
9	9 Western Carriers India Limited	3	

Query 6: Employee of the Year

```

SELECT * FROM (
SELECT DISTINCT ON (e.e_id) e.e_id ,e.e_name,SUM(tr.t_amount) as total FROM
transactions tr
JOIN orders o ON tr.fk_order_id=o.order_id
JOIN employee e ON e.e_id=o.fk_e_id
WHERE EXTRACT(YEAR FROM tr.t_date)=2021
GROUP BY e.e_id) emp
ORDER BY total DESC LIMIT 1 ;

```

```

1 SELECT * FROM (
2 SELECT DISTINCT ON (e.e_id) e.e_id ,e.e_name,SUM(tr.t_amount) as total FROM transactions tr
3 JOIN orders o ON tr.fk_order_id=o.order_id
4 JOIN employee e ON e.e_id=o.fk_e_id
5 WHERE EXTRACT(YEAR FROM tr.t_date)=2021
6 GROUP BY e.e_id) emp
7 ORDER BY total DESC LIMIT 1 ;
8

```

Data Output Explain Messages Notifications

	e_id [PK] integer	e_name character varying (30)	total numeric
1	2	Devarsh	263289.48

Query 7: Search ppl whose payment is pending for more than 20 days and add 10% penalty charges to their amount.

```

SELECT tr.t_id,tr.t_amount,tr.t_date,o.order_id,cl.client_gst_no,cl.client_name,
(CURRENT_DATE::date - tr.t_date::date) AS days,((tr.t_amount*0.10)+tr.t_amount) AS
updated_t_amount
FROM transactions tr
JOIN orders o ON o.order_id=tr.fk_order_id
JOIN client cl ON cl.client_gst_no=o.fk_client_gst_no
WHERE tr.t_status='pending' AND (CURRENT_DATE::date - tr.t_date::date)>20
ORDER BY tr.t_id;

```

```

1 SELECT tr.t_id,tr.t_amount,tr.t_date,o.order_id,cl.client_gst_no,cl.client_name,
2 (CURRENT_DATE::date - tr.t_date::date) AS days,((tr.t_amount*0.10)+tr.t_amount) AS updated_t_amount
3 FROM transactions tr
4 JOIN orders o ON o.order_id=tr.fk_order_id
5 JOIN client cl ON cl.client_gst_no=o.fk_client_gst_no
6 WHERE tr.t_status='pending' AND (CURRENT_DATE::date - tr.t_date::date)>20
7 ORDER BY tr.t_id;
8

```

Data Output Explain Messages Notifications

	t_id integer	t_amount numeric (9,2)	t_date date	order_id integer	client_gst_no character varying (15)	client_name character varying (30)	days integer	updated_t_amount numeric
1	19	2000.12	2021-11-03	2021120014	24ABCDE1234F1Z5	Dhvani	30	2200.1320

Query 8: Most valuable client

```

SELECT * FROM (
SELECT DISTINCT ON (cl.client_gst_no) cl.client_gst_no ,cl.client_name,SUM(tr.t_amount) as
total FROM transactions tr
JOIN orders o ON tr.fk_order_id=o.order_id
JOIN client cl ON cl.client_gst_no = o.fk_client_gst_no
GROUP BY cl.client_gst_no) abc
ORDER BY total  DESC LIMIT 1;

```

```

1  SELECT * FROM (
2      SELECT DISTINCT ON (cl.client_gst_no) cl.client_gst_no ,cl.client_name,
3      SUM(tr.t_amount) as total FROM transactions tr
4      JOIN orders o ON tr.fk_order_id=o.order_id
5      JOIN client cl ON cl.client_gst_no = o.fk_client_gst_no
6      GROUP BY cl.client_gst_no) abc
7  ORDER BY total  DESC LIMIT 1;
8

```

Data Output

Explain

Messages

Notifications

	<div>client_gst_no</div> <div>[PK] character varying (15)</div>	<div>client_name</div> <div>character varying (30)</div>	<div>total</div> <div>numeric</div>	
1	07AAAAA0000A0Z0	Zakir Khan	172001.86	

Query 9:

- Pilots and the orders delivered by them**

```






SELECT pilot_id,pilot_name,tran.fk_order_id,o.order_name FROM pilot pi
JOIN airtransport air ON air.plane_id=pi.fk_planeid
JOIN transporter tr ON tr.transporter_id=air.fk_transporterid
JOIN transportation tran ON tran.fk_transporter_id=tr.transporter_id
JOIN orders o ON tran.fk_order_id=o.order_id;

```

```

1 SELECT pilot_id,pilot_name,tran.fk_order_id,o.order_name FROM pilot pi
2 JOIN airtransport air ON air.plane_id=pi.fk_planeid
3 JOIN transporter tr ON tr.transporter_id=air.fk_transporterid
4 JOIN transportation tran ON tran.fk_transporter_id=tr.transporter_id
5 JOIN orders o ON tran.fk_order_id=o.order_id;
6
7

```

Data Output		Explain	Messages	Notifications	
	pilot_id integer 	pilot_name character varying (30) 	fk_order_id integer 	order_name character varying (30) 	
1	301	Jack	2021020026	CNG Transportation	
2	301	Jack	2021010007	Animal Transportation	
3	301	Jack	2021100018	Paper Transportation	
4	302	Alex	2021040023	WoodTransportation	
5	302	Alex	2021070020	Meat Transportation	
6	303	Walt	2021010022	Bike Transportation	
7	303	Walt	2021030017	Sugar Transportation	
8	303	Walt	2021070012	Wine Transportation	

- **Drivers and the orders delivered by them**

```
SELECT driver_id,driver_name,tran.fk_order_id FROM driver d
```

```
JOIN roadtransport rd ON rd.vehicle_no=d.fk_vehicleno
```





```
JOIN transporter tr ON tr.transporter_id=rd.fk_transporterid
```

```
JOIN transportation tran ON tran.fk_transporter_id=tr.transporter_id;
```

```

1 SELECT driver_id,driver_name,tran.fk_order_id,o.order_name FROM driver d
2 JOIN roadtransport rd ON rd.vehicle_no=d.fk_vehicleno
3 JOIN transporter tr ON tr.transporter_id=rd.fk_transporterid
4 JOIN transportation tran ON tran.fk_transporter_id=tr.transporter_id
5 JOIN orders o ON tran.fk_order_id=o.order_id;
6

```

Data Output		Explain	Messages	Notifications	
	driver_id integer	 driver_name character varying (30)		fk_order_id integer	 order_name character varying (30)
1	101	John		2021070024	Crane Transportation
2	101	John		2021090010	Gas-Based Fuels Transportation
3	101	John		2021010001	Car Transportation
4	102	Harry		2021020030	Wool Transportation
5	102	Harry		2021110013	Grain Transportation
6	102	Harry		2021020011	Machinery Transportation
7	103	David		2021050028	Sports Items Transportation
8	103	David		2021050015	Kerosene Transportation
9	103	David		2021020003	Shoes Transportation






- **Captain and the orders delivered by them**

```
SELECT captain_id,captain_name,tran.fk_order_id,o.order_name FROM captain cp
JOIN watertransport w ON w.ship_id=cp.fk_shipid
JOIN transporter tr ON tr.transporter_id=w.fk_transporterid
JOIN transportation tran ON tran.fk_transporter_id=tr.transporter_id
JOIN orders o ON tran.fk_order_id=o.order_id;
```

```

1 SELECT captain_id,captain_name,tran.fk_order_id,o.order_name FROM captain cp
2 JOIN watertransport w ON w.ship_id=cp.fk_shipid
3 JOIN transporter tr ON tr.transporter_id=w.fk_transporterid
4 JOIN transportation tran ON tran.fk_transporter_id=tr.transporter_id
5 JOIN orders o ON tran.fk_order_id=o.order_id;
6

```

Data Output	Explain	Messages	Notifications
 captain_id  integer	captain_name  character varying (30)	fk_order_id  integer	order_name  character varying (30)
1	201 Robert	2021040027	Factory Parts Transportation
2	201 Robert	2021110005	Toys Transportation
3	201 Robert	2021110005	Toys Transportation
4	202 Joseph	2021090019	Coal Transportation
5	203 Felix	2021090029	Fruits Transportation
6	203 Felix	2021010016	Televisions Transportation
7	203 Felix	2021060006	Clothing Transportation

Query 10: Time taken for transportation of each order

```
SELECT o.order_id,o.order_name,o.fk_client_gst_no,tr.pickup_date,tr.destination_date,
(tr.destination_date::date - tr.pickup_date::date) as Duration_of_transport
FROM transportation tr
JOIN orders o ON tr.fk_order_id=o.order_id ;
```

```

1 SELECT o.order_id,o.order_name,o.fk_client_gst_no,tr.pickup_date,tr.destination_date,
2 (tr.destination_date::date - tr.pickup_date::date) as Duration_of_transport
3 FROM transportation tr
4 JOIN orders o ON tr.fk_order_id=o.order_id ;

```

Data Output Explain Messages Notifications

	order_id integer	order_name character varying (30)	fk_client_gst_no character varying (15)	pickup_date date	destination_date date	duration_of_transport integer
1	2021010001	Car Transportation	07AAAAA0000A0Z0	2021-01-26	2021-02-15	20
2	2021020003	Shoes Transportation	27SEXYR6969A1Z4	2021-02-10	2021-02-15	5
3	2021020011	Machinery Transportation	24ABCDE1234F1Z5	2021-02-14	2021-02-28	14
4	2021050015	Kerosene Transportation	29BBBBB1111B1Z1	2021-05-27	2021-06-05	9
5	2021070020	Meat Transportation	27SEXYR6969A1Z4	2021-08-05	2021-08-10	5
6	2021100018	Paper Transportation	07AAAAA0000A0Z0	2021-10-30	2021-11-04	5
7	2021110005	Toys Transportation	03BBBBB1111B1Z1	2021-11-22	2021-12-06	14
8	2021070012	Wine Transportation	03BBBBB1111B1Z1	2021-07-15	2021-07-25	10
9	2021090019	Coal Transportation	24ABCDE1234F1Z5	2021-09-23	2021-10-10	17
10	2021060006	Clothing Transportation	29BBBBB1111B1Z1	2021-07-05	2021-07-12	7
11	2021090010	Gas-Based Fuels Transportation	29BBBBB1111B1Z1	2021-10-28	2021-11-06	9
12	2021110013	Grain Transportation	07AAAAA0000A0Z0	2021-11-20	2021-11-29	9
13	2021030017	Sugar Transportation	03BBBBB1111B1Z1	2021-03-20	2021-04-10	21
14	2021010016	Televisions Transportation	27SEXYR6969A1Z4	2021-10-28	2021-11-12	15
15	2021110005	Toys Transportation	03BBBBB1111B1Z1	2021-11-27	2021-12-04	7

Query 11: Client Order Details

```
CREATE OR REPLACE FUNCTION view_details (gst_no varchar)
```

```
RETURNS TABLE(
```

```
    client_name VARCHAR,
```

```
    client_mobileneno VARCHAR,
```

```
    client_emailid VARCHAR,
```

```
    order_id INTEGER,
```

```
    order_name VARCHAR
```

```
)
```

```
LANGUAGE plpgsql
```

```
AS $$
```

```
BEGIN
```

```
    RETURN QUERY
```


```
        SELECT
```

```
            client.client_name,client.client_mobileneno,client.client_emailid,order
            s.order_id,orders.order_name
```

```
FROM
    orders
JOIN
    client ON client.client_gst_no=orders.fk_client_gst_no
WHERE
    client.client_gst_no ILIKE gst_no;

END;$$
```

```
SELECT view_details('24ABCDE1234F1Z5');
```

1	SELECT view_details('24ABCDE1234F1Z5');
2	
Data Output Explain Messages Notifications	
	view_details record 
1	(Dhvani,9932376544,dhvani123@gmail.com,2021080004,"Aluminium Transportation")
2	(Dhvani,9932376544,dhvani123@gmail.com,2021030008,"Oil Transportation")
3	(Dhvani,9932376544,dhvani123@gmail.com,2021020011,"Machinery Transportation")
4	(Dhvani,9932376544,dhvani123@gmail.com,2021120014,"Bus Transportation")
5	(Dhvani,9932376544,dhvani123@gmail.com,2021090019,"Coal Transportation")

Query 12: Which mode of transportation is being used most?

```
CREATE OR REPLACE FUNCTION mode_of_transport ()
RETURNS VARCHAR
language plpgsql
as $$
DECLARE
    transport VARCHAR;
    air integer;
    water integer;
    road integer;
BEGIN
    SELECT COUNT(tran.trans_id) INTO air FROM airtransport ar
    JOIN transporter tr ON tr.transporter_id=ar.fk_transporterid
    JOIN transportation tran ON tran.fk_transporter_id=tr.transporter_id;

    SELECT COUNT(tran.trans_id) INTO road FROM roadtransport rd
    JOIN transporter tr ON tr.transporter_id=rd.fk_transporterid
    JOIN transportation tran ON tran.fk_transporter_id=tr.transporter_id;

    SELECT COUNT(tran.trans_id) INTO water FROM watertransport wt
    JOIN transporter tr ON tr.transporter_id=wt.fk_transporterid
    JOIN transportation tran ON tran.fk_transporter_id=tr.transporter_id;

    IF (air > water ) AND (air > road) THEN
        transport = 'Air Transport was Used the most';
    ELSIF (water = air) AND (water = road) THEN
        transport = 'All Modes of Tansport were used equally';
    ELSIF (air = road) OR (air = water) THEN
        transport = 'Two Modes of Transport were Used the most';
    ELSIF (road > air) AND (road > water) THEN
        transport = 'Road Transport was Used the most';
```

```

ELSIF (road = air) OR (road = water) THEN

    transport = 'Two Modes of Transport were Used the most';

ELSIF (water > air) AND (water > road) THEN

    transport = 'Water Transport was Used the most';

END IF;


RETURN transport;

end;$$

```

```
SELECT mode_of_transport()
```

1 **SELECT** mode_of_transport()

Data Output	Explain	Messages	Notifications
<div><div></div><div>mode_of_transport character varying</div><div></div></div>			
1	Water Transport was Used the most		

Query 13: Between the given date which region has max receiver

```

SELECT tr.destination_location FROM transportation tr
WHERE tr.destination_date
BETWEEN '2021-11-01' AND '2021-11-30'
GROUP BY tr.destination_location
ORDER BY COUNT(*) DESC LIMIT 1;

```

1 SELECT tr.destination_location FROM transportation tr
2 WHERE tr.destination_date
3 BETWEEN '2021-11-01' AND '2021-11-30'
4 GROUP BY tr.destination_location
5 ORDER BY COUNT(*) DESC LIMIT 1;
6

Data Output Explain Messages Notifications

	destination_location character varying (40)	
1	Delhi	

Query 14: List the employee having highest salary

```

SELECT e.e_id,e.e_name,d.dept_id,d.dept_name,e.e_salary FROM employee e
JOIN department d ON d.dept_id=e.fk_dept_id
WHERE e.e_salary=(SELECT MAX(e.e_salary) FROM employee e);

```

```

1 SELECT e.e_id,e.e_name,d.dept_id,d.dept_name,e.e_salary FROM employee e
2 JOIN department d ON d.dept_id=e.fk_dept_id
3 WHERE e.e_salary=(SELECT MAX(e.e_salary) FROM employee e);
4
5







```

Data Output

Explain

Messages

Notifications

 e_id 	e_name 	dept_id 	dept_name 	e_salary 
integer	character varying (30)	integer	character varying (30)	integer
1	8 Krish	1	Management	70000

Query 15: Most Expensive Order

```







SELECT o.*,tr.t_amount FROM client cl
JOIN orders o ON o.fk_client_gst_no=cl.client_gst_no
JOIN transactions tr ON tr.fk_order_id=o.order_id
WHERE tr.t_amount=(SELECT MAX(tr.t_amount) FROM transactions tr);

```

```

1 SELECT o.*,tr.t_amount FROM client cl
2 JOIN orders o ON o.fk_client_gst_no=cl.client_gst_no
3 JOIN transactions tr ON tr.fk_order_id=o.order_id
4 WHERE tr.t_amount=(SELECT MAX(tr.t_amount) FROM transactions tr);
5

```

Data Output		Explain	Messages	Notifications	
	order_id integer 	order_name character varying (30) 	fk_client_gst_no character varying (15) 	fk_e_id integer 	t_amount numeric (9,2) 
1	2021090019	Coal Transportation	24ABCDE1234F1Z5	1	70000.00

Query 19: All the available vehicles with Loading Capacity more than 25.

```

SELECT * FROM

(SELECT ar.plane_id AS ID,(ar.airplane_name) AS Name,(ar.p_loading_capacity) AS
loading_capacity FROM airtransport ar

UNION

SELECT rd.vehicle_no, rd.v_name, rd.v_loading_capacity FROM roadtransport rd

UNION

SELECT wt.ship_id,s_name,wt.s_loading_capacity FROM watertransport wt) lc

WHERE loading_capacity>25;

```

```

1 SELECT * FROM
2 (SELECT ar.plane_id AS ID,(ar.airplane_name) AS Name,
3  (ar.p_loading_capacity) AS loading_capacity FROM airtransport ar
4 UNION
5 SELECT rd.vehicle_no, rd.v_name, rd.v_loading_capacity FROM roadtransport rd
6 UNION
7 SELECT wt.ship_id,s_name,wt.s_loading_capacity FROM watertransport wt) lc
8 WHERE loading_capacity>25;
9

```

Data Output Explain Messages Notifications

	id integer	name character varying (30)	loading_capacity integer
1	2781	AIRBUS A300 B4F	43
2	2314563	Algoma Mariner	29
3	4515731	Akebono Maru	29
4	9865	BOEING MD 11F	85
5	3578014	MS Antenor	27

Query 20:

- **List of all vehicles older than 10 years**

```

SELECT rd.* FROM roadtransport rd

WHERE (CURRENT_DATE::date - rd.purchase_date::date)>3650;

```

```

1 SELECT rd.* FROM roadtransport rd
2 WHERE (CURRENT_DATE::date - rd.purchase_date::date)>3650;
3

```

Data Output Explain Messages Notifications

	vehicle_no [PK] integer	v_name character varying (30)	v_loading_capacity integer	purchase_date date	fk_transporterid integer
1	7005	TATA TAURUS	21	2008-10-06	3
2	6783	Ashok Leyland	7	2010-05-25	1

- List of all ships older than 25 years

```
SELECT wt.* FROM watertransport wt
```

```
WHERE (CURRENT_DATE::date - wt.purchase_date::date)>9125;
```

```

1 SELECT wt.* FROM watertransport wt
2 WHERE (CURRENT_DATE::date - wt.purchase_date::date)>9125;
3

```

Data Output Explain Messages Notifications

	ship_id [PK] integer	purchase_date date	s_name character varying (30)	s_loading_capacity integer	crew_size integer	fk_transporterid integer
1	4515731	1990-02-23	Akebono Maru	29	22	4

- List of all plane older than 20 years

```
SELECT ar.* FROM airtransport ar
```

```
WHERE (CURRENT_DATE::date - ar.purchase_date::date)>7300;
```

```

1 SELECT ar.* FROM airtransport ar
2 WHERE (CURRENT_DATE::date - ar.purchase_date::date)>7300;
3

```

Data Output Explain Messages Notifications

	plane_id [PK] integer	purchase_date date	airplane_name character varying (30)	p_loading_capacity integer	fk_transporterid integer
1	2781	2000-01-10	AIRBUS A300 B4F	43	7

Conclusion

In conclusion, a database is a far more efficient mechanism to store and organize data than manual records; it allows for a centralized facility that can easily be modified and quickly shared among the company.

From this management system we get the idea of how many different entities are connected to each other and function altogether. It also helps with all the queries that are encountered on a regular basis from as keeping track of all clients, receiver, employees with their department, transporters and vehicles to calculating employee of the month, most profitable client, duration of transport and all the scenarios one can imagine to obtain desired information.

Taking advantage of this Database Management System many employee can read, modify and use all the information efficiently for the benefit of the company simultaneously. Thus, this project is a key for all the issues that are faced in Logistics.