

**CASE STUDY REPORT ON SHIP PORT MANAGEMENT SYSTEM**

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**Semester: 4th Subject Name: DBMS**

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create database mimi;

use mimi;

CREATE TABLE Owner (

OwnerID INT PRIMARY KEY,

OwnerName VARCHAR(50),

Contact VARCHAR(15),

Address VARCHAR(100)

);

CREATE TABLE Ship (

ShipID INT PRIMARY KEY,

ShipName VARCHAR(50),

Capacity INT,

OwnerID INT,

FOREIGN KEY (OwnerID) REFERENCES Owner(OwnerID)

);

CREATE TABLE Port (

PortID INT PRIMARY KEY,

PortName VARCHAR(50),

Location VARCHAR(50),

Capacity INT

);

CREATE TABLE Dock (

DockID INT PRIMARY KEY,

PortID INT,

DockNumber INT,

Status VARCHAR(20),

FOREIGN KEY (PortID) REFERENCES Port(PortID)

);

CREATE TABLE Cargo (

CargoID INT PRIMARY KEY,

CargoType VARCHAR(50),

Weight INT,

ShipID INT,

FOREIGN KEY (ShipID) REFERENCES Ship(ShipID)

);

CREATE TABLE Schedule (

ScheduleID INT PRIMARY KEY,

ShipID INT,

PortID INT,

ArrivalDate DATE,

DepartureDate DATE,

FOREIGN KEY (ShipID) REFERENCES Ship(ShipID),

FOREIGN KEY (PortID) REFERENCES Port(PortID)

);

CREATE TABLE Employee (

EmployeeID INT PRIMARY KEY,

Name VARCHAR(50),

Position VARCHAR(50),

PortID INT,

FOREIGN KEY (PortID) REFERENCES Port(PortID)

);

CREATE TABLE Transaction (

TransactionID INT PRIMARY KEY,

CargoID INT,

ShipID INT,

TransactionDate DATE,

Amount DECIMAL(10,2),

FOREIGN KEY (CargoID) REFERENCES Cargo(CargoID),

FOREIGN KEY (ShipID) REFERENCES Ship(ShipID)

);

INSERT INTO Owner VALUES (1, 'John Smith', '9876543210', 'New York');

INSERT INTO Owner VALUES (2, 'Emma Davis', '8765432109', 'London');

INSERT INTO Owner VALUES (3, 'Carlos Mendes', '7654321098', 'Lisbon');

INSERT INTO Owner VALUES (4, 'Ava Johnson', '6543210987', 'Sydney');

INSERT INTO Owner VALUES (5, 'Leo Brown', '5432109876', 'Tokyo');

INSERT INTO Ship VALUES (1, 'Titanic', 5000, 1);

INSERT INTO Ship VALUES (2, 'Poseidon', 3000, 2);

INSERT INTO Ship VALUES (3, 'Neptune', 4500, 3);

INSERT INTO Ship VALUES (4, 'Ocean King', 6000, 4);

INSERT INTO Ship VALUES (5, 'Sea Queen', 3500, 5);

INSERT INTO Port VALUES (1, 'New York Port', 'New York', 7000);

INSERT INTO Port VALUES (2, 'London Port', 'London', 5000);

INSERT INTO Port VALUES (3, 'Lisbon Port', 'Lisbon', 6000);

INSERT INTO Port VALUES (4, 'Sydney Port', 'Sydney', 8000);

INSERT INTO Port VALUES (5, 'Tokyo Port', 'Tokyo', 9000);

INSERT INTO Dock VALUES (1, 1, 101, 'Available');

INSERT INTO Dock VALUES (2, 2, 202, 'Occupied');

INSERT INTO Dock VALUES (3, 3, 303, 'Available');

INSERT INTO Dock VALUES (4, 4, 404, 'Maintenance');

INSERT INTO Dock VALUES (5, 5, 505, 'Available');

INSERT INTO Cargo VALUES (1, 'Oil', 2000, 1);

INSERT INTO Cargo VALUES (2, 'Coal', 3000, 2);

INSERT INTO Cargo VALUES (3, 'Steel', 4000, 3);

INSERT INTO Cargo VALUES (4, 'Food', 5000, 4);

INSERT INTO Cargo VALUES (5, 'Electronics', 2500, 5);

INSERT INTO Schedule VALUES (1, 1, 1, '2025-04-15', '2025-04-20');

INSERT INTO Schedule VALUES (2, 2, 2, '2025-04-10', '2025-04-18');

INSERT INTO Schedule VALUES (3, 3, 3, '2025-04-12', '2025-04-19');

INSERT INTO Schedule VALUES (4, 4, 4, '2025-04-14', '2025-04-21');

INSERT INTO Schedule VALUES (5, 5, 5, '2025-04-17', '2025-04-23');

INSERT INTO Employee VALUES (1, 'Michael', 'Manager', 1);

INSERT INTO Employee VALUES (2, 'Sophia', 'Supervisor', 2);

INSERT INTO Employee VALUES (3, 'Daniel', 'Technician', 3);

INSERT INTO Employee VALUES (4, 'Olivia', 'Engineer', 4);

INSERT INTO Employee VALUES (5, 'Ethan', 'Operator', 5);

INSERT INTO Transaction VALUES (1, 1, 1, '2025-04-15', 50000.00);

INSERT INTO Transaction VALUES (2, 2, 2, '2025-04-10', 70000.00);

INSERT INTO Transaction VALUES (3, 3, 3, '2025-04-12', 90000.00);

INSERT INTO Transaction VALUES (4, 4, 4, '2025-04-14', 65000.00);

INSERT INTO Transaction VALUES (5, 5, 5, '2025-04-17', 80000.00);

SELECT \* FROM Ship;

INSERT INTO Ship (ShipID, ShipName, Capacity, OwnerID)

VALUES (6, 'Blue Wave', 5500, 3);

UPDATE Ship SET Capacity = 6000 WHERE ShipID = 3;

select \* from Ship;

DELETE FROM Transaction WHERE ShipID = 5;

select \* from Transaction;

SELECT \* FROM Schedule

ORDER BY ArrivalDate DESC

LIMIT 1;

SELECT Ship.ShipName, Owner.OwnerName

FROM Ship

JOIN Owner ON Ship.OwnerID = Owner.OwnerID;

SELECT COUNT(\*) AS TotalShips FROM Ship;

SELECT SUM(Weight) AS TotalCargoWeight FROM Cargo;

SELECT AVG(Capacity) AS AverageCapacity FROM Ship;

SELECT MAX(Amount) AS HighestTransaction FROM Transaction;

SELECT MIN(Amount) AS LowestTransaction FROM Transaction;

SELECT OwnerID, COUNT(ShipID) AS TotalShips

FROM Ship

GROUP BY OwnerID;

SELECT PortID, COUNT(DockID) AS TotalDocks

FROM Dock

GROUP BY PortID

HAVING COUNT(DockID) > 2;

SELECT Ship.ShipName, Port.PortName, Schedule.ArrivalDate, Schedule.DepartureDate

FROM Schedule

JOIN Ship ON Schedule.ShipID = Ship.ShipID

JOIN Port ON Schedule.PortID = Port.PortID;