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**1NT22CS143**

**5 .Consider a relational database schema for a Sailors database below Sailors (sid: integer, sname: string, rating: integer, age: real); Boats (bid: integer, bname: string, color: string); Reserves (sid: integer, bid: integer, day: date). For the above schema, perform the following.**

**a) Create the above tables by specifying primary keys and foreign keys.**

**b) Insert around 10 records in each of the tables.**

**c) Find the names of sailors who have reserved a red boat, and list in the order of age.**

**d) Find the names of sailors who have reserved boat 103**

**e) Find the name and the age of the youngest sailor.**

**f) Find the average age of sailors for each rating level that has at least two sailors.**

**Code:**

CREATE DATABASE SailingClub;

USE SailingClub;

CREATE TABLE Sailors (

sid INTEGER PRIMARY KEY,

sname VARCHAR(50),

rating INTEGER,

age REAL

);

CREATE TABLE Boats (

bid INTEGER PRIMARY KEY,

bname VARCHAR(50),

color VARCHAR(20)

);

CREATE TABLE Reserves (

sid INTEGER,

bid INTEGER,

day DATE,

PRIMARY KEY (sid, bid, day),

FOREIGN KEY (sid) REFERENCES Sailors(sid),

FOREIGN KEY (bid) REFERENCES Boats(bid)

);

-- Inserting records into Sailors

INSERT INTO Sailors (sid, sname, rating, age) VALUES

(1, 'John', 5, 25.0),

(2, 'Sam', 7, 30.0),

(3, 'Tom', 3, 22.5),

(4, 'Bob', 8, 29.0),

(5, 'Alice', 6, 27.0),

(6, 'Cathy', 9, 24.0),

(7, 'Diana', 4, 26.5),

(8, 'Eve', 2, 23.0),

(9, 'Frank', 5, 28.0),

(10, 'Grace', 7, 31.0);

-- Inserting records into Boats

INSERT INTO Boats (bid, bname, color) VALUES

(101, 'Sea Breeze', 'red'),

(102, 'Ocean Wave', 'blue'),

(103, 'Sunny Day', 'green'),

(104, 'Red Dragon', 'red'),

(105, 'Blue Lagoon', 'blue'),

(106, 'Green Turtle', 'green'),

(107, 'Yellow Submarine', 'yellow'),

(108, 'White Pearl', 'white'),

(109, 'Black Pearl', 'black'),

(110, 'Silver Bullet', 'silver');

-- Inserting records into Reserves

INSERT INTO Reserves (sid, bid, day) VALUES

(1, 101, '2024-06-01'),

(2, 103, '2024-06-02'),

(3, 104, '2024-06-03'),

(4, 105, '2024-06-04'),

(5, 106, '2024-06-05'),

(6, 107, '2024-06-06'),

(7, 108, '2024-06-07'),

(8, 109, '2024-06-08'),

(9, 110, '2024-06-09'),

(10, 101, '2024-06-10'),

(3, 102, '2024-06-11'),

(2, 101, '2024-06-12');

SELECT s.sname

FROM Sailors s

JOIN Reserves r ON s.sid = r.sid

WHERE r.bid = 103;

**// Finding the names of sailors who have reserved boat 103**

SELECT sname, age

FROM Sailors

ORDER BY age

LIMIT 1;

SELECT rating, AVG(age) AS avg\_age

FROM Sailors

GROUP BY rating

HAVING COUNT(\*) >= 2;

SELECT s.sname

FROM Sailors s

JOIN Reserves r ON s.sid = r.sid

JOIN Boats b ON r.bid = b.bid

WHERE b.color = 'red'

ORDER BY s.age;

**Screenshots:**

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