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Batch-A1

Rollno-07

Assignment no-4

Title- Implement Group By, Having clause and Order by clause with suitable example

Create tables in ORACLE using SQL DDL statements.

Sailor(sid:integer, sname:string, rating:integer, age:real)

Boat(bid:integer, bname:string, color:string)

Reserves(sid:integer, bid:integer, day:date)

1. Insert following records in the above tables

Sailors

|  |  |  |  |
| --- | --- | --- | --- |
| sid | sname | rating | age |
| 22 | Dustin | 7 | 45.0 |
| 29 | Brutus | 1 | 33.0 |
| 31 | Lubber | 8 | 55.5 |
| 32 | Andy | 8 | 25.5 |
| 58 | Rusty | 10 | 35.0 |
| 64 | Horatio | 7 | 35.0 |
| 71 | Zorba | 10 | 16.0 |
| 74 | Horatio | 9 | 35.0 |
| 85 | Art | 3 | 25.5 |
| 95 | Bob | 3 | 63.5 |

Boat

|  |  |  |
| --- | --- | --- |
| bid | bname | color |
| 101 | Interlake | blue |
| 102 | Interlake | red |
| 103 | Clipper | green |
| 104 | Marine | red |

Reserves

|  |  |  |
| --- | --- | --- |
| sid | bid | day |
| 22 | 101 | 10/10/98 |
| 22 | 102 | 10/10/98 |
| 22 | 103 | 10/8/98 |
| 22 | 104 | 10/7/98 |
| 31 | 102 | 11/10/98 |
| 31 | 103 | 11/6/98 |
| 31 | 104 | 12/12/98 |
| 64 | 101 | 9/5/98 |
| 64 | 102 | 9/8/98 |
| 74 | 103 | 9/8/98 |

**Queries:**

Q 1) Find the minimum age of sailors for each rating level.

Q2) Find number of boats of each color.

Q3) Find the age of the oldest sailor for each rating level. Print rating level also.

Q4) Find the number of reservations of each boat in descending order of boat id.

Q5) Find the average age of sailors for each rating level that has at least two sailors.

Q6) Find the age of the youngest sailor who is eligible to vote(i.e at least 18 years old) for each rating level.

Q7) Print sailors name and date of boat reservation in ascending order of date of reservation.

-- Table Creation

CREATE TABLE Sailors (

sid INTEGER PRIMARY KEY,

sname VARCHAR(50),

rating INTEGER,

age FLOAT

);

CREATE TABLE Boat (

bid INTEGER PRIMARY KEY,

bname VARCHAR(50),

color VARCHAR(50)

);

CREATE TABLE Reserves (

sid INTEGER,

bid INTEGER,

day DATE,

FOREIGN KEY (sid) REFERENCES Sailors(sid),

FOREIGN KEY (bid) REFERENCES Boat(bid)

);

-- Data Insertion

INSERT INTO Sailors (sid, sname, rating, age) VALUES (22, 'Dustin', 7, 45.0);

INSERT INTO Sailors (sid, sname, rating, age) VALUES (29, 'Brutus', 1, 33.0);

INSERT INTO Sailors (sid, sname, rating, age) VALUES (31, 'Lubber', 8, 55.5);

INSERT INTO Sailors (sid, sname, rating, age) VALUES (32, 'Andy', 8, 25.5);

INSERT INTO Sailors (sid, sname, rating, age) VALUES (58, 'Rusty', 10, 35.0);

INSERT INTO Sailors (sid, sname, rating, age) VALUES (64, 'Horatio', 7, 35.0);

INSERT INTO Sailors (sid, sname, rating, age) VALUES (71, 'Zorba', 10, 16.0);

INSERT INTO Sailors (sid, sname, rating, age) VALUES (74, 'Horatio', 9, 35.0);

INSERT INTO Sailors (sid, sname, rating, age) VALUES (85, 'Art', 3, 25.5);

INSERT INTO Sailors (sid, sname, rating, age) VALUES (95, 'Bob', 3, 63.5);

INSERT INTO Boat (bid, bname, color) VALUES (101, 'Interlake', 'blue');

INSERT INTO Boat (bid, bname, color) VALUES (102, 'Interlake', 'red');

INSERT INTO Boat (bid, bname, color) VALUES (103, 'Clipper', 'green');

INSERT INTO Boat (bid, bname, color) VALUES (104, 'Marine', 'red');

INSERT INTO Reserves (sid, bid, day) VALUES (22, 101, TO\_DATE('10/10/98', 'MM/DD/YY'));

INSERT INTO Reserves (sid, bid, day) VALUES (22, 102, TO\_DATE('10/10/98', 'MM/DD/YY'));

INSERT INTO Reserves (sid, bid, day) VALUES (22, 103, TO\_DATE('10/8/98', 'MM/DD/YY'));

INSERT INTO Reserves (sid, bid, day) VALUES (22, 104, TO\_DATE('10/7/98', 'MM/DD/YY'));

INSERT INTO Reserves (sid, bid, day) VALUES (31, 102, TO\_DATE('11/10/98', 'MM/DD/YY'));

INSERT INTO Reserves (sid, bid, day) VALUES (31, 103, TO\_DATE('11/6/98', 'MM/DD/YY'));

INSERT INTO Reserves (sid, bid, day) VALUES (31, 104, TO\_DATE('12/12/98', 'MM/DD/YY'));

INSERT INTO Reserves (sid, bid, day) VALUES (64, 101, TO\_DATE('9/5/98', 'MM/DD/YY'));

INSERT INTO Reserves (sid, bid, day) VALUES (64, 102, TO\_DATE('9/8/98', 'MM/DD/YY'));

INSERT INTO Reserves (sid, bid, day) VALUES (74, 103, TO\_DATE('9/8/98', 'MM/DD/YY'));

-- Queries

-- Q1) Find the minimum age of sailors for each rating level.

SELECT rating, MIN(age) AS min\_age

FROM Sailors

GROUP BY rating;

-- Q2) Find number of boats of each color.

SELECT color, COUNT(\*) AS num\_boats

FROM Boat

GROUP BY color;

-- Q3) Find the age of the oldest sailor for each rating level. Print rating level also.

SELECT rating, MAX(age) AS max\_age

FROM Sailors

GROUP BY rating;

-- Q4) Find the number of reservations of each boat in descending order of boat id.

SELECT bid, COUNT(\*) AS num\_reservations

FROM Reserves

GROUP BY bid

ORDER BY bid DESC;

-- Q5) Find the average age of sailors for each rating level that has at least two sailors.

SELECT rating, AVG(age) AS avg\_age

FROM Sailors

GROUP BY rating

HAVING COUNT(\*) >= 2;

-- Q6) Find the age of the youngest sailor who is eligible to vote(i.e at least 18 years old) for each rating level.

SELECT rating, MIN(age) AS min\_age

FROM Sailors

WHERE age >= 18

GROUP BY rating;

-- Q7) Print sailors name and date of boat reservation in ascending order of date of reservation.

SELECT s.sname, r.day

FROM Sailors s

INNER JOIN Reserves r ON s.sid = r.sid

ORDER BY r.day ASC;

---------------------------------------OUTPUT-------------------------------------------------------

