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**Div: A Class:: FYMCA**

**Roll No: 23 Batch: A1**

Assignment 3::

1. Create tables in ORACLE using SQL DDL statements.

-- Create the Sailor table

CREATE TABLE Sailor (

sid INTEGER PRIMARY KEY,

sname VARCHAR(20) NOT NULL,

rating INTEGER CHECK (rating BETWEEN 1 AND 10),

age REAL CHECK (age > 0)

);

-- Create the Boat table

CREATE TABLE Boat (

bid INTEGER PRIMARY KEY,

bname VARCHAR(20) NOT NULL,

color VARCHAR(10) NOT NULL

);

-- Create the Reserves table

CREATE TABLE Reserves (

sid INTEGER REFERENCES Sailor(sid),

bid INTEGER REFERENCES Boat(bid),

day DATE NOT NULL,

PRIMARY KEY (sid, bid, day)

);

-- Insert records into the Sailor table

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

(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);

-- Insert records into the Boat table

INSERT INTO Boat (bid, bname, color) VALUES

(101, 'Interlake', 'blue'),

(102, 'Interlake', 'red'),

(103, 'Clipper', 'green'),

(104, 'Marine', 'red');

-- Insert records into the Reserves table

INSERT INTO Reserves (sid, bid, day) VALUES

(22, 101, '1998-10-10'),

(22, 102, '1998-10-10'),

(22, 103, '1998-10-08'),

(22, 104, '1998-10-07'),

(31, 102, '1998-11-10'),

(31, 103, '1998-11-06'),

(31, 104, '1998-12-12'),

(64, 101, '1998-09-05'),

(64, 102, '1998-09-08'),

(74, 103, '1998-09-08');

1. Find the name and age of all sailors

-- Select the name and age of all sailors

SELECT sname, age

FROM Sailor;

1. Find all sailors with a rating above 7

-- Select the name and rating of sailors with a rating above 7

SELECT sname, rating

FROM Sailor

WHERE rating > 7;

1. Increase ratings of sailors by 10% whose age is less than 40

-- Update the rating of sailors by 10% whose age is less than 40

UPDATE Sailor

SET rating = rating \* 1.1

WHERE age < 40;

1. Update rating of all sailors by 2 who have reserved boat on 11/12/98

-- Update the rating of sailors by 2 who have reserved boat on 1998-11-12

UPDATE Sailor

SET rating = rating + 2

WHERE sid IN (

SELECT sid

FROM Reserves

WHERE day = '1998-11-12'

);

1. Delete sailors whose rating is less than 3 and age is above 60

-- Delete sailors whose rating is less than 3 and age is above 60

DELETE FROM Sailor

WHERE rating < 3 AND age > 60;

1. Delete names of sailors who have reserved boat 102

-- Delete names of sailors who have reserved boat 102

UPDATE Sailor

SET sname = NULL

WHERE sid IN (

SELECT sid

FROM Reserves

WHERE bid = 102

);

B) Consider same database given in the Part A

1. Find name of sailors and display the names in upper case who have reserved boat with name ‘Interlake’.

-- Select the name of sailors in upper case who have reserved boat with name 'Interlake'

SELECT UPPER(sname) AS name

FROM Sailor

WHERE sid IN (

SELECT sid

FROM Reserves

WHERE bid IN (

SELECT bid

FROM Boat

WHERE bname = 'Interlake'

)

);

1. Find the ratings of sailors whose name contain ‘us’ substring.

-- Select the ratings of sailors whose name contains 'us' substring

SELECT rating

FROM Sailor

WHERE sname LIKE '%us%';

1. Find the average age of sailors with a rating of 8.

-- Select the average age of sailors with a rating of 8

SELECT AVG(age) AS average\_age

FROM Sailor

WHERE rating = 8;

1. Count the number of sailors with rating greater than 5

-- Select the count of sailors with rating greater than 5

SELECT COUNT(\*) AS count

FROM Sailor

WHERE rating > 5;

1. Select date of reservation of boat with bid =101 reserved by sailor with sid =64 add 2 months in the date and display it.

-- Select the date of reservation of boat with bid = 101 reserved by sailor with sid = 64 and add 2 months to it

SELECT day + INTERVAL '2' MONTH AS new\_date

FROM Reserves

WHERE bid = 101 AND sid = 64;

1. Find the months between date 12/02/2021 and system current date.

-- Select the number of months between 2021-02-12 and the current date

SELECT MONTHS\_BETWEEN(SYSDATE, DATE '2021-02-12') AS months

FROM DUAL;

1. Find name of the boat with month of reservation of boat

-- Select the name of the boat and the month of reservation of the boat

SELECT bname, TO\_CHAR(day, 'Month') AS month

FROM Boat

JOIN Reserves

ON Boat.bid = Reserves.bid;

1. Demonstrate use of following numeric functions with suitable examples ABS, SIGN, POWER, ROUND, MOD, FLOOR, CEIL and TRUNC

-- Demonstrate the use of numeric functions with examples

-- ABS returns the absolute value of a number

SELECT ABS(-5) AS abs FROM DUAL; -- returns 5

-- SIGN returns the sign of a number: -1 for negative, 0 for zero, and 1 for positive

SELECT SIGN(-5) AS sign FROM DUAL; -- returns -1

-- POWER returns the value of a number raised to the power of another number

SELECT POWER(2, 3) AS power FROM DUAL; -- returns 8

-- ROUND returns a number rounded to a specified number of decimal places

SELECT ROUND(3.14159, 2) AS round FROM DUAL; -- returns 3.14

-- MOD returns the remainder of a division operation

SELECT MOD(10, 3) AS mod FROM DUAL; -- returns 1

-- FLOOR returns the largest integer that is equal to or less than a number

SELECT FLOOR(3.14159) AS floor FROM DUAL; -- returns 3

-- CEIL returns the smallest integer that is equal to or greater than a number

SELECT CEIL(3.14159) AS ceil FROM DUAL; -- returns 4

-- TRUNC returns a number truncated to a specified number of decimal places

SELECT TRUNC(3.14159, 2) AS trunc FROM DUAL; -- returns 3.14

1. Find the square root of ages of all sailors

-- Select the square root of ages of all sailors

SELECT SQRT(age) AS sqrt\_age

FROM Sailor;

1. Display dates of all boat reservations in the format e.g 19-Jun-2005

-- Select the dates of all boat reservations in the format DD-Mon-YYYY

SELECT TO\_CHAR(day, 'DD-Mon-YYYY') AS date

FROM Reserves;

1. Find the min and max rating from Sailors

-- Select the minimum and maximum rating from Sailors

SELECT MIN(rating) AS min\_rating, MAX(rating) AS max\_rating

FROM Sailor;

C) Consider same database given in the Part A. Use Arithmetic Operators,Logical Operators , Comparison Operator and Special Operator

1. Find the names and ages of sailors whose name begins and ends with B and has at least three characters.

-- Select the names and ages of sailors whose name begins and ends with B and has at least three characters

SELECT sname, age

FROM Sailor

WHERE sname LIKE 'B%B' AND LENGTH(sname) >= 3;

1. Find the names and ages of sailors whose name begins with A or L.

-- Select the names and ages of sailors whose name begins with A or L

SELECT sname, age

FROM Sailor