EXPERIMENT 8

SAILOR BOAT DATABASE (DDL, DML, DQL, Subquery, Joins, Set operations)

Aim:

- Create sailors, boats, and reserves.(foreign key).
- Insert 5 values each table.
- Display all records.
- Find the names and ages of all sailors.
- Find all sailors with ratings above 8.
- Find sailors name with rating above 7 & age above 25.
- Display all the names & colors of the boats.
- Find all the boats with Red colors.
- Find the names of sailors' who have reserved boat number 103.
- Find the sids of sailors who have reserved blue boat
- Find the names of sailors' who have reserved Red boat.
- Find the colours of boats reserved by some name(provide any name in table).
- Find the names of the sailors who have reserved at least one boat.
- Find the names of the sailors who have reserved two different boats.
- Find the names of sailors who have reserved a Red or a Green boat.(union)
- Find the names of sailors who have reserved both a Red and a Green boat.
- Find the names of sailors who have reserved boat 103.(nested query)
- Find the names of sailors who have reserved red boat.(ng)
- Find the names of sailors who have not reserved red boat.(ng)
- Find the names of sailors who have reserved boat number 103.(exists)
- Find sailors whose rating is better than some sailors called name.
- Find sailors whose rating is better than every sailor' called name.
- Find the sailors with highest rating.
- Find the average age of all sailors.
- Find the average age of sailors with a rating of 10.
- Count the number of sailors.
- Count the number of different sailor ratings.
- Find the name and age of the oldest sailor.
- Find the names of the sailors who are older than the oldest sailor with a rating of 10.
- Find the age of youngest sailor for each rating level.
- Find the age of the youngest sailor who is eligible to vote (i.e., is at least 18 years old) for each rating level with at least two such sailors.
- For each red boat, find the number of reservations for this boat.
- Find all sailors name according to names.
- Find all sailors details according to rating.
- Find all sailors details according to rating (highest first) if ratings are same then according to age(youngest first).

SCHEMA:

```
create table sailors(sid integer, sname varchar(20), rating integer, age integer, primary key(sid));
desc sailors;
create table boats(bid integer,beame varchar(20),color varchar(20),primary key(bid));
create table reverse(sid integer,bid integer,days warchar(20), foreign key(sid) references sailors(sid), foreign key(bid) references boats(bid));
insert into sailors values(22, 'Oustin',7,45);
imert into sailors values(29, Bratus 1,33);
insert into sailors values(%1, 'Labter', 8,55.5);
insert into sailors values(31, 'Andy',8,25.5);
insert into sailors values(58, lasty', 18,35);
insert into sailors values(64, Noratio',7,35);
insert into sailors values(71, "loribo",10,16);
insert into sailors values(74, "moratio",9,35);
insert into sailors values(85, Art ,3,25.5);
insert into sailors values(95, 808',3,63.5);
select *from sailors;
insert into bosts values(181, "Interlake", 'blue');
insert into boats values(182, 'Interlake', 'red');
insert into boats values(183, 'Clipper', 'green');
insert into boats values(184, "Marine", 'red');
```

```
insert into boats values(104, 'Marine', 'red');
   select *from boats;
   insert into reverse values(22,103,'10/8/98');
   insert into reverse values(22,184,'10/7/98');

    insert into reverse values(31,102, '11/10/98');

    insert into reverse values(31,183,'11/6/98');

    insert into reverse values(31,104, '11/12/98');

   insert into reverse values(64,181,'9/5/98');
   insert into reverse values(64,102,'9/8/98');
   insert into reverse values(74,103,'9/8/98');
   select *from reverse;
  SELECT sname, age FROM sailors;
   SELECT sid FROM sailors WHERE rating>=8;
   SELECT sid FROM sailors WHERE rating>=7 and age >= 25;
 SELECT bname, color FROM boats;
  SELECT S.*
    FROM sailors S, reverse R
    WHERE S.sid = R.sid AND R.bid = 103;
  SELECT R.sid
```

```
    SELECT sid FROM sailors WHERE rating>=8;

    SELECT sid FROM sailors WHERE rating>=7 and age >= 25;

   SELECT bname, color FROM boats;
. SELECT S.*
    FROM sailors S, reverse R
    WHERE S.sid = R.sid AND R.bid = 103;

    SELECT R.sid

    FROM Boat B, Reserves R
    WHERE B.bid = R.bid AND B.color = 'Pink';
   SELECT S.sname
    FROM sailors S, reverse R, boats B
    WHERE S.sid = R.sid AND R.bid = B.bid AND
    B.color = 'red';

    SELECT B.color

    FROM sailors S, reverse R, boats B
    WHERE S.sid = R.sid AND R.bid = B.bid AND
    S.sname = 'Lubber';

    SELECT S.sname

    FROM sailors S, reverse R
    SELECT S.sname
    FROM sailors S, reverse R
    WHERE S.sid = R.sid;
● ⊖ (SELECT S.sid
    FROM sailors S, boats B, reverse R
    WHERE S.sid=R.sid AND R.bid=B.bid
   AND B.color='red')
    UNION
 ⊖ (SELECT S.sid
    FROM sailors S, boats B, reverse R
    WHERE S.sid=R.sid AND R.bid=B.bid
   AND B.color='green');

    SELECT S.sid

   FROM sailors S, boats B, reverse R
    WHERE S.sid=R.sid AND R.bid=B.bid
    AND (B.color='red' OR B.color='green');
  SELECT S.sid
   FROM sailors S, boats B1, reverse R1,
```

```
. SELECT S.sid
   FROM sailors S, boats B1, reverse R1,
   boats B2, reverse R2
   WHERE S.sid=R1.sid AND R1.bid=B1.bid
   AND S.sid=R2.sid AND R2.bid=B2.bid
   AND (B1.color='red' AND B2.color='green');

    SELECT S.sname

   FROM sailors S, reverse R
   WHERE S.sid=R.sid AND R.bid=103;

    SELECT S.sname

   FROM sailors S
 ⊖ WHERE s.sid IN (
   SELECT S.sid
   FROM sailors S, reverse R, boats B
   WHERE S.sid=R.sid AND R.bid=B.bid
   AND B.color='red');
SELECT S. sname
    FROM sailors S
 O WHERE s.sid IN (
    SELECT S.sid
    FROM sailors S, reverse R, boats B
   WHERE S.sid=R.sid AND R.bid=B.bid
  AND B.color='red');
SELECT S.sname
   FROM sailors S

→ WHERE S.sid NOT IN (SELECT R.sid

   FROM reverse R
  WHERE R.bid=103);
SELECT *
    FROM sailors S

⊖ WHERE S.rating > ANY (SELECT S2.rating)

    FROM Sailors S2
  WHERE S2.sname='Horatio');
```

```
• SELECT *
    FROM sailors S

→ WHERE S.rating > ALL (SELECT S2.rating)
   FROM Sailors S2
  WHERE S2.sname='Horatio');

    SELECT *

    FROM sailors S

→ WHERE S.rating >= ALL (SELECT S2.rating)

  FROM sailors S2);

    SELECT AVG (S.age)

   FROM sailors S;

    SELECT AVG (S.age)

   FROM sailors S
   WHERE S.rating = 10;
SELECT COUNT(*)
  FROM sailors S;
SELECT COUNT(DISTINCT S.rating)
   FROM sailors S;
SELECT S.sname, S.age
   FROM sailors S
   WHERE S.age =

⊕ (SELECT MAX(S2.age)

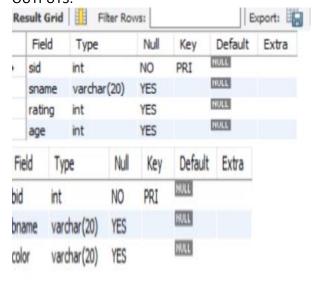
 FROM sailors S2);
SELECT S.sname
   FROM sailors S

→ WHERE S.age > ( SELECT MAX(S2.age)
   FROM sailors S2
 WHERE S2.rating = 10);

    SELECT S.rating, MIN(S.age) AS avg_age

    FROM Sailors S
    GROUP BY S.rating;
```

OUTPUTS:



	Field	Type	Null	Key	Default	Extra
٠	sid i	nt	YES	MUL	MULL	
		nt	YES	MUL	HULL	
	days v	varchar(20)	YES			
	sid	sr	name	rat	ing	age
١	22	Du	stin	7		45
	29	Bri	utus	1		33
	31	Lui	bber	8		56
	32	An	Andy Rusty Horatio			26 35 35
	58	Ru				
	64	Ho				
	71	Zo	riba	10		16
	74	Ho	ratio	9		35
	85	Ar	t	3		26
	95	BC	В	3		64
	NULL	NUL	L	HULL		NULL
R	esult 6	irid	1	▶ Fil	ter Ro	101
	bid	bn	ame	co	lor	
•	101	Inte	erlake	blu	e	
	102	Inte	erlake	rec	1	

103

104

HULL

Clipper

Marine

HULL

green red

NULL

Re	esult Gr	♦ Filter Ro		
	sid	bid	days	
۰	22	103	10/8/98	
	22	103	10/8/98	
	22	103	10/8/98	
	22	103	10/8/98	
	22	104	10/7/98	
	31	102	11/10/98	
	31	102	11/10/98	
	31	104	11/12/98	
	31	104	11/12/98	
	31	104	11/12/98	
	64	101	9/5/98	
	64	102	9/8/98	
	74	103	9/8/98	

R	esult Grid	H
	sname	age
٠	Dustin	45
	Brutus	33
	Lubber	56
	Andy	26
	Rusty	35
	Horatio	35
	Zoriba	16
	Horatio	35
	Art	26
	BOB	64

	sid
•	31
	32
	58
	71
	74
	NULL

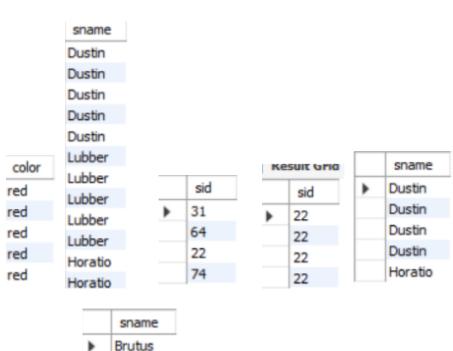
	sid	
•	22	
	31	
	32	
	58	
	64	
	74	
	HULL	

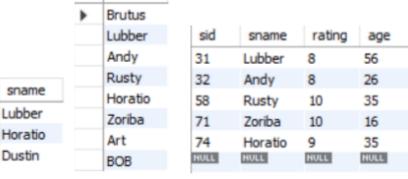
	bname	color
•	Interlake	blue
	Interlake	red
	Clipper	green
	Marine	red

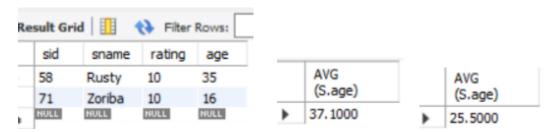
sid	sname	rating	age
22	Dustin	7	45
22	Dustin	7	45
22	Dustin	7	45
22	Dustin	7	45
74	Horatio	9	35

sid	sname	rating	age
22	Dustin	7	45
22	Dustin	7	45
22	Dustin	7	45
22	Dustin	7	45
74	Horatio	9	35

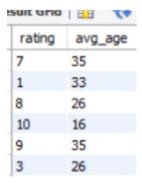
	sname
•	Lubber
	Lubber
	Horatio
	Dustin
	Lubber
	Lubber
	Lubber







							tesult Grid 🔢
							sname
	COUNT(*)		COUNT(DISTINCT				Dustin
•	10		S.rating)		sname	age	Lubber
,		•	6	١	BOB	64	BOB



Components Used:

Instance: It is the collection of information stored in a

database at a particular moment.

Entity: Object that is relevant to given system. Represented as

rectangle.

Attribute: Trait of an entity, relationship or other attribute.

Represented by oval.