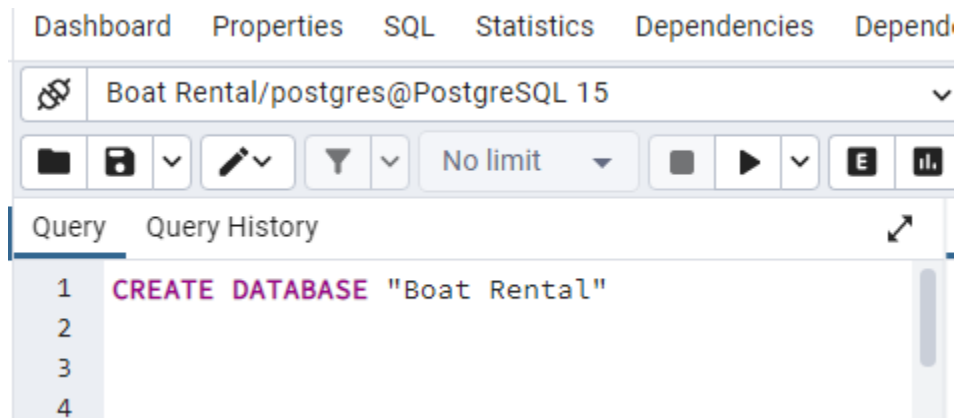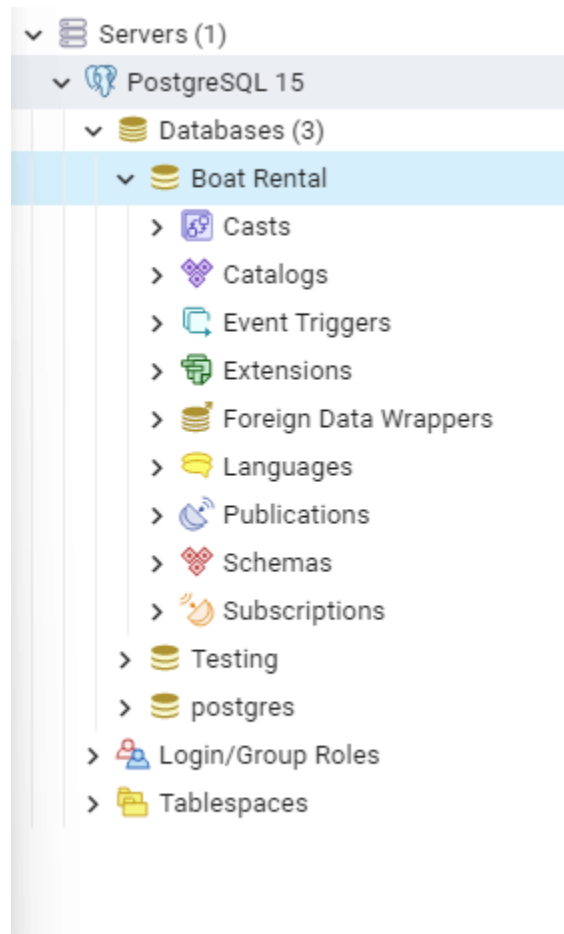# Tugas Manajemen Basis Data

Sandyatama Fransisna Nugraha (5025211196)

1. Create database 'Boat Rental' and its tables based on the Scheme

Query :

Result :

2. Insert the data based on the Scheme

Query :

```
5  CREATE TABLE Sailor(
6      sid INTEGER PRIMARY KEY NOT NULL,
7      sname VARCHAR (10) NOT NULL,
8      rating INTEGER NOT NULL,
9      age DECIMAL(4,1) NOT NULL
10 );
11
12 CREATE TABLE Boats(
13     bid INTEGER PRIMARY KEY NOT NULL,
14     bname VARCHAR(10) NOT NULL,
15     color VARCHAR(10) NOT NULL
16 );
17
18 CREATE TABLE Reserves(
19     sid INTEGER NOT NULL,
20     bid INTEGER NOT NULL,
21     day DATE NOT NULL,
22     CONSTRAINT fk_sid
23         FOREIGN KEY(sid) REFERENCES Sailor(sid),
24         FOREIGN KEY(bid) REFERENCES Boats(bid)
25 );
```

```
INSERT INTO Sailor 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 INTO Boats VALUES
(101,'Interlake','blue'),
(102,'Interlake','red'),
(103,'Clipper','green'),
(104,'Marine','red');
```

```
INSERT INTO Reserves 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,'1998-11-12'),
(64,101,'1998-09-05'),
(64,102,'1998-09-08'),
(74,103,'1998-09-08');
```

Result :

Schemas (1)
- public
  - Aggregates
  - Collations
  - Domains
  - FTS Configurations
  - FTS Dictionaries
  - FTS Parsers
  - FTS Templates
  - Foreign Tables
  - Functions
  - Materialized Views
  - Operators
  - Procedures
  - Sequences
  - Tables (3)
    - boats
    - reserves
    - sailor
  - Trigger Functions
  - Types
  - Views

Data Output | Messages | Notifications

	sid [PK] integer	sname character varying (10)	rating integer	age numeric (4,1)
1	22	Dustin	7	45.0
2	29	Brutus	1	33.0
3	31	Lubber	8	55.5
4	32	Andy	8	25.5
5	58	Rusty	10	35.0
6	64	Horatio	7	35.0
7	71	Zorba	10	16.0
8	74	Horatio	9	35.0
9	85	Art	3	25.5
10	95	Bob	3	63.5

Data Output | Messages | Notifications

	bid [PK] integer	bname character varying (10)	color character varying (10)
1	101	Interlake	blue
2	102	Interlake	red
3	103	Clipper	green
4	104	Marine	red

Data Output | Messages | Notifications

	sid integer	bid integer	day date
1	22	101	1998-10-10
2	22	102	1998-10-10
3	22	103	1998-10-08
4	22	104	1998-10-07
5	31	102	1998-11-10
6	31	103	1998-11-06
7	31	104	1998-11-12
8	64	101	1998-09-05
9	64	102	1998-09-08
10	74	103	1998-09-08

3. Select the name and sid of Sailor who has a 35 years old

Query :

```
Query   Query History

1   SELECT sname,sid
2   FROM Sailor
3   WHERE age = 35
```

Result :

	sname character varying (10)	sid [PK] integer
1	Rusty	58
2	Horatio	64
3	Horatio	74

4. Select the name of Sailor who has rating more than 5

Query :

```
Query   Query History

1   SELECT sname
2   FROM Sailor
3   WHERE rating > 5
```

Result :

Data Output   Messages   Notifications

	sname character varying (10) 🔒
1	Dustin
2	Lubber
3	Andy
4	Rusty
5	Horatio
6	Zorba
7	Horatio

5. Select the sid, bid and day from table Reserves in October

Query :

Query   Query History

```
1  SELECT sid,bid,day
2  FROM Reserves
3  WHERE EXTRACT(MONTH FROM day) = '10';
```

Result :

Data Output   Messages   Notifications

	sid integer 🔒	bid integer 🔒	day date 🔒
1	22	101	1998-10-10
2	22	102	1998-10-10
3	22	103	1998-10-08
4	22	104	1998-10-07

6. Select the name of Sailor who borrowed Red and Green Boats

Query :

```
1   SELECT sname
2   FROM Sailor
3   Where sid IN (
4       Select s.sid
5       FROM Sailor s, Boats b, Reserves r
6       WHERE r.sid = s.sid AND r.bid = b.bid AND b.color = 'red'
7       INTERSECT
8       Select s.sid
9       FROM Sailor s, Boats b, Reserves r
10      WHERE r.sid = s.sid AND r.bid = b.bid AND b.color = 'green'
11  );
```

Result :

Data Output   Messages   Not

sname character varying (10)
Dustin
Lubber

7. Select the name of Sailor who borrowed Red or Green Boats

Query :

```
1   SELECT sname
2   FROM Sailor
3   Where sid IN (
4       Select s.sid
5       FROM Sailor s, Boats b, Reserves r
6       WHERE r.sid = s.sid AND r.bid = b.bid AND b.color = 'red'
7       UNION
8       Select s.sid
9       FROM Sailor s, Boats b, Reserves r
10      WHERE r.sid = s.sid AND r.bid = b.bid AND b.color = 'green'
11  );
12
```

Result :

Data Output   Messages   Notifi

	sname character varying (10)
1	Dustin
2	Lubber
3	Horatio
4	Horatio

8. Select the name of Sailor who borrowed Red but not borrowed Green Boat

Query :

```
 1   SELECT sname
 2   FROM Sailor
 3   Where sid IN (
 4        Select s.sid
 5        FROM Sailor s, Boats b, Reserves r
 6        WHERE r.sid = s.sid AND r.bid = b.bid AND b.color = 'red'
 7        EXCEPT
 8        Select s.sid
 9        FROM Sailor s, Boats b, Reserves r
10        WHERE r.sid = s.sid AND r.bid = b.bid AND b.color = 'green'
11   );
12
```

Result :

	sname character varying (10) 🔒
1	Horatio