

CPSC 304 Tutorial 7 - Advanced SQL

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1. List the last name and first name of every owner not located in Bowton.

```
SELECT FirstName, LastName FROM Owner_q7w9a WHERE City!="Bowton";
```

```
+-----+-----+
| FirstName | LastName |
+-----+-----+
| Bill      | Anderson |
| Sandy and Bill | Elend   |
| Daniel    | Feenstra |
| Maria     | Juarez   |
| Peter     | Norton   |
| Becky and Dave | Smeltz  |
| Ashton    | Trent    |
+-----+-----+
7 rows in set (0.00 sec)
```

2. List the slip number for every slip in marina 1 whose annual rental fee is less than \$3,000.

```
SELECT SlipID FROM MarinaSlip_q7w9a WHERE RentalFee < 3000;
```

```
+-----+
| SlipID |
+-----+
| 4      |
| 5      |
| 6      |
| 7      |
| 8      |
| 9      |
+-----+
6 rows in set (0.00 sec)
```

3. Labor is billed at the rate of \$60 per hour. List the slip ID, category number, estimated hours, and estimated labor cost for every service request. To obtain the estimated labor cost, multiply the estimated hours by 60. Use the column name EstimatedCost for the estimated labor cost.

```
SELECT SlipID, CategoryNum, EstHours, EstHours*60 AS EstLaborCost FROM ServiceRequest_q7w9a;
```

```
+-----+-----+-----+-----+
| SlipID | CategoryNum | EstHours | EstLaborCost |
+-----+-----+-----+-----+
| 1      | 3          | 4.00    | 240.00       |
| 5      | 4          | 2.00    | 120.00       |
| 4      | 1          | 1.00    | 60.00        |
| 1      | 2          | 2.00    | 120.00       |
| 3      | 5          | 4.00    | 240.00       |
| 11     | 4          | 3.00    | 180.00       |
| 6      | 2          | 2.00    | 120.00       |
| 6      | 2          | 4.00    | 240.00       |
| 7      | 6          | 8.00    | 480.00       |
| 2      | 8          | 7.00    | 420.00       |
| 2      | 3          | 1.00    | 60.00        |
| 4      | 8          | 2.00    | 120.00       |
| 8      | 2          | 5.00    | 300.00       |
```

7	5	6.00	360.00
11	7	8.00	480.00

15 rows in set (0.00 sec)

4. List the marina number and slip number for all slips containing a boat with the type Sprite 4000, Sprite 3000, or Ray 4025.

```
SELECT MarinaNum, SlipNum, BoatType
FROM MarinaSlip_q7w9a
WHERE BoatType IN ('Sprite 4000', 'Sprite 3000', 'Ray 4025');
```

MarinaNum	SlipNum	BoatType
1	A1	Sprite 4000
1	A2	Ray 4025
1	A3	Sprite 4000
1	B2	Sprite 3000
2	6	Ray 4025

5 rows in set (0.00 sec)

5. Retrieve the number of SlipId, average rentalfee, lowest rentalfee, and highest rentalfee for the Dolphin 25.

```
SELECT count(SlipID), avg(rentalfee), max(rentalfee)
FROM MarinaSlip_q7w9a
WHERE BoatType='Dolphin 25';
```

count(SlipID)	AVG(rentalfee)	max(rentalfee)
2	1900.000000	2000.00

1 row in set (0.03 sec)

6. Retrieve the record of owners whose city name contains the phrase 'Bay'.

```
SELECT * FROM Owner_q7w9a WHERE city LIKE '%Bay%';
```

OwnerNum	LastName	FirstName	Address	City	State	Zip
AN75	Anderson	Bill	18 Wilcox	Glander Bay	FL	31044
SM72	Smeltz	Becky and Dave	922 Garland	Glander Bay	FL	31044
TR72	Trent	Ashton	922 Crest	Bay Shores	FL	30992

3 rows in set (0.00 sec)

7. Display the MarinaNum, and the total amount of rentalfee(of all BoatType) whose total rentalfee amount (of all BoatType) rented is greater than \$5000.

```
SELECT MarinaNum, sum(rentalfee) AS fees FROM MarinaSlip_q7w9a GROUP BY MarinaNum HAVING fees > 5000;
```

MarinaNum	fees
1	16200.00

```
| 2          | 16500.00 |
+-----+-----+
2 rows in set (0.00 sec)
```

8. List the marina number, slip number, and boat name for all boats. Sort the results by boat name within the marina number.

```
SELECT MarinaNum, SlipID, BoatName FROM MarinaSlip_q7w9a ORDER BY MarinaNum, BoatName;
```

```
+-----+-----+-----+
| MarinaNum | SlipID | BoatName |
+-----+-----+-----+
| 1         |      1 | Anderson II |
| 1         |      5 | Anderson III |
| 1         |      3 | Escape      |
| 1         |      4 | Gypsy       |
| 1         |      2 | Our Toy     |
| 2         |     10 | Axxon II    |
| 2         |      6 | Bravo       |
| 2         |      7 | Chinook     |
| 2         |     11 | Karvel      |
| 2         |      8 | Listy       |
| 2         |      9 | Mermaid     |
+-----+-----+-----+
11 rows in set (0.00 sec)
```

9. For every service request for routine engine maintenance, list the slip ID, marina number, slip number, estimated hours, spent hours, owner number, and owners last name.

```
SELECT MarinaSlip_q7w9a.SlipID, MarinaNum, SlipNum, EstHours, SpentHours, Owner_q7w9a.OwnerNum, LastName
FROM ServiceRequest_q7w9a
INNER JOIN MarinaSlip_q7w9a
ON ServiceRequest_q7w9a.SlipID = MarinaSlip_q7w9a.SlipID
INNER JOIN Owner_q7w9a
ON Owner_q7w9a.OwnerNum = MarinaSlip_q7w9a.OwnerNum;
```

```
+-----+-----+-----+-----+-----+-----+-----+
| SlipID | MarinaNum | SlipNum | EstHours | SpentHours | OwnerNum | LastName |
+-----+-----+-----+-----+-----+-----+-----+
| 1      | 1         | A1      | 4.00     | 2.00      | AN75     | Anderson |
| 5      | 1         | B2      | 2.00     | 0.00      | AN75     | Anderson |
| 4      | 1         | B1      | 1.00     | 0.00      | JU92     | Juarez   |
| 1      | 1         | A1      | 2.00     | 0.00      | AN75     | Anderson |
| 3      | 1         | A3      | 4.00     | 2.00      | KE22     | Kelly    |
| 11     | 2         | 6       | 3.00     | 0.00      | TR72     | Trent    |
| 6      | 2         | 1       | 2.00     | 0.00      | AD57     | Adney    |
| 6      | 2         | 1       | 4.00     | 1.00      | AD57     | Adney    |
| 7      | 2         | 2       | 8.00     | 0.00      | FE82     | Feenstra |
| 2      | 1         | A2      | 7.00     | 0.00      | EL25     | Elend    |
| 2      | 1         | A2      | 1.00     | 1.00      | EL25     | Elend    |
| 4      | 1         | B1      | 2.00     | 0.00      | JU92     | Juarez   |
| 8      | 2         | 3       | 5.00     | 2.00      | SM72     | Smeltz   |
| 7      | 2         | 2       | 6.00     | 0.00      | FE82     | Feenstra |
| 11     | 2         | 6       | 8.00     | 3.00      | TR72     | Trent    |
+-----+-----+-----+-----+-----+-----+-----+
15 rows in set (0.00 sec)
```

10. Display the BoatName and BoatType having cheapest rentalfees.

```
SELECT BoatName, BoatType FROM MarinaSlip_q7w9a WHERE RentalFee = (SELECT min(RentalFee) FROM MarinaSlip_q7w9a);
```

```
+-----+-----+
| BoatName | BoatType |
+-----+-----+
| Bravo    | Dolphin 25 |
| Chinook  | Dolphin 22 |
+-----+-----+
2 rows in set (0.00 sec)
```

11.Create a view for owners who rented twice (any boat)

```
CREATE VIEW rents2 AS SELECT OwnerNum, count(*) AS count FROM MarinaSlip_q7w9a GROUP BY OwnerNum HAVING count=2;
```

Query OK, 0 rows affected (0.01 sec)

12. Create a view for owners who spent more than 4000 on boat renting.

```
CREATE VIEW rent4000 AS SELECT OwnerNum, sum(RentalFee) AS rent FROM MarinaSlip_q7w9a GROUP BY OwnerNum HAVING rent > 4000;
```

Query OK, 0 rows affected (0.01 sec)

13.Retrieve the OwnerNum, Boat name, and Rental Fee for each owner that has rented twice or who spent more than 4000 on boat renting.

```
SELECT OwnerNum, BoatName, RentalFee FROM MarinaSlip_q7w9a
INNER JOIN (
    SELECT OwnerNum AS OwnerNum2 FROM rents2
    UNION
    SELECT OwnerNum AS OwnerNum2 FROM rent4000) owners
ON OwnerNum = OwnerNum2;
```

```
+-----+-----+-----+
| OwnerNum | BoatName      | RentalFee |
+-----+-----+-----+
| AN75     | Anderson II   | 3800.00   |
| AN75     | Anderson III  | 2600.00   |
| NO27     | Axxon II      | 4200.00   |
| TR72     | Karvel        | 4200.00   |
+-----+-----+-----+
4 rows in set (0.00 sec)
```

14.Add to the MarinaSlip table a new character field named FeePaid that is one character in length. On all records, change the value for the FeePaid field to Y.

```
ALTER TABLE MarinaSlip_q7w9a ADD COLUMN FeePaid VARCHAR(1) DEFAULT 'Y';
```

Query OK, 0 rows affected (0.06 sec)

Records: 0 Duplicates: 0 Warnings: 0

MariaDB [t7]> SELECT * FROM MarinaSlip_q7w9a;

```
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| SlipID | MarinaNum | SlipNum | Length | RentalFee | BoatName      | BoatType      | OwnerNum | FeePaid |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 1      | 1         | A1      | 40     | 3800.00   | Anderson II   | Sprite 4000    | AN75     | Y       |
| 2      | 1         | A2      | 40     | 3800.00   | Our Toy       | Ray 4025       | EL25     | Y       |
| 3      | 1         | A3      | 40     | 3600.00   | Escape        | Sprite 4000    | KE22     | Y       |
| 4      | 1         | B1      | 30     | 2400.00   | Gypsy         | Dolphin 28     | JU92     | Y       |
```

	5		1		B2		30		2600.00		Anderson III		Sprite 3000		AN75		Y	
	6		2		1		25		1800.00		Bravo		Dolphin 25		AD57		Y	
	7		2		2		25		1800.00		Chinook		Dolphin 22		FE82		Y	
	8		2		3		25		2000.00		Listy		Dolphin 25		SM72		Y	
	9		2		4		30		2500.00		Mermaid		Dolphin 28		BL72		Y	
	10		2		5		40		4200.00		Axxon II		Dolphin 40		NO27		Y	
	11		2		6		40		4200.00		Karvel		Ray 4025		TR72		Y	

+-----+-----+-----+-----+-----+-----+-----+-----+

11 rows in set (0.00 sec)