

## Lab 3

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Course Name : Database

Course Code : SECD2523

Section : 06

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## Database Design Project

### Oracle Baseball League Store Database

#### **Project Scenario:**

You are a small consulting company specializing in database development. You have just been awarded the contract to develop a data model for a database application system for a small retail store called Oracle Baseball League (OBL).

The Oracle Baseball League store serves the entire surrounding community selling baseball kit. The OBL has two types of customer, there are individuals who purchase items like balls, cleats, gloves, shirts, screen printed t-shirts, and shorts. Additionally customers can represent a team when they purchase uniforms and equipment on behalf of the team.

Teams and individual customers are free to purchase any item from the inventory list, but teams get a discount on the list price depending on the number of players. When a customer places an order we record the order items for that order in our database.

OBL has a team of three sales representatives that officially only call on teams but have been known to handle individual customer complaints.

## Section 6 Lesson 6 Exercise 1: Retrieving Data Using SELECT

### Write and Execute SELECT statements (S6L6 Objective 2)

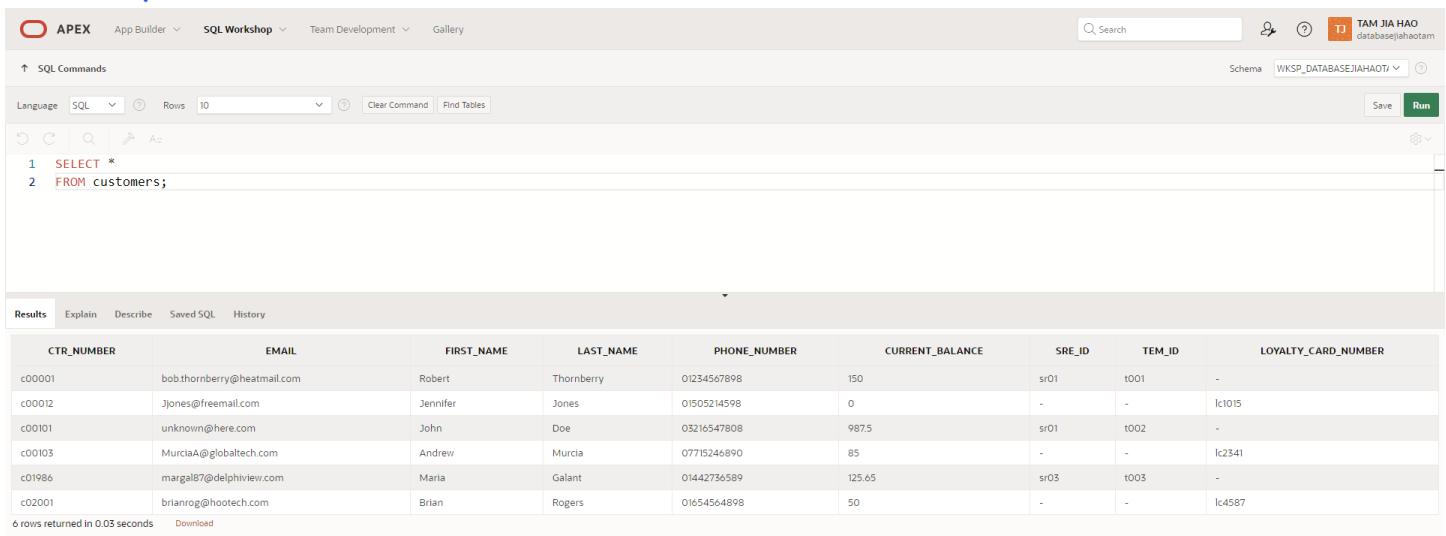
In this exercise you will retrieve data that is stored in the database system by using a SELECT statement.

#### Part 1: Retrieving all columns from a table.

Using the SELECT \* statement show all data stored in the following tables:

1. customers.

*SELECT \**  
*FROM customers;*



The screenshot shows the Oracle SQL Workshop interface. The SQL command window contains the following code:

```
1 SELECT *
2 FROM customers;
```

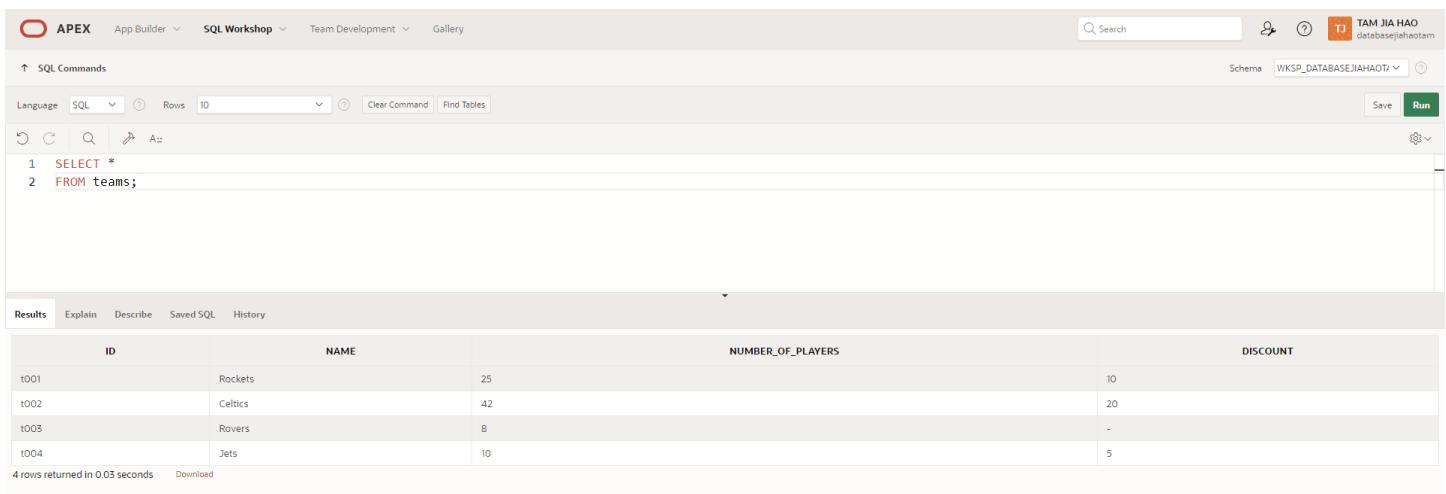
The results window displays the data from the customers table:

CTR_NUMBER	EMAIL	FIRST_NAME	LAST_NAME	PHONE_NUMBER	CURRENT_BALANCE	SRE_ID	TEM_ID	LOYALTY_CARD_NUMBER
c00001	bob.thornberry@heatmail.com	Robert	Thornberry	01234567898	150	sr01	t001	-
c00012	Jjones@freemail.com	Jennifer	Jones	01505214598	0	-	-	lc1015
c00101	unknown@here.com	John	Doe	03216547808	987.5	sr01	t002	-
c00103	MurciaA@globaltech.com	Andrew	Murcia	07715246890	85	-	-	lc2341
c01986	margal87@delphiview.com	Maria	Galant	01442736589	125.65	sr03	t003	-
c02001	brianrog@hootech.com	Brian	Rogers	01654564898	50	-	-	lc4587

6 rows returned in 0.03 seconds [Download](#)

2. teams.

*SELECT \**  
*FROM teams;*



The screenshot shows the Oracle SQL Workshop interface. The SQL command window contains the following code:

```
1 SELECT *
2 FROM teams;
```

The results window displays the data from the teams table:

ID	NAME	NUMBER_OF_PLAYERS	DISCOUNT
t001	Rockets	25	10
t002	Celtics	42	20
t003	Rovers	8	-
t004	Jets	10	5

4 rows returned in 0.03 seconds [Download](#)

### 3. items

**SELECT \***  
**FROM items;**

The screenshot shows the Oracle SQL Workshop interface. The SQL command entered is:

```
1 SELECT *
2 FROM items;
```

The results table displays the following data:

ITEM_NUMBER	NAME	DESCRIPTION	CATEGORY	COLOR	SIZE	ILT_ID
im0101044	gloves	catcher mitt	clothing	brown	m	il010230124
im0101045	under shirt	top worn under the game top	clothing	white	s	il010230125
im0101046	socks	team socks with emblem	clothing	range	l	il010230126
im0101047	game top	team shirt with emblem	clothing	range	m	il010230127
im0101048	premium bat	high quality baseball bat	equipment	-	-	il010230128

5 rows returned in 0.03 seconds    Download

### Part 2: Selecting Specific Columns

- Display the customer number, first name, last name, email and phone number of the customers.

**SELECT ctr\_number, first\_name, last\_name, email, phone\_number**  
**FROM customers;**

The screenshot shows the Oracle SQL Workshop interface. The SQL command entered is:

```
1 SELECT ctr_number, first_name, last_name, email, phone_number
2 FROM customers;
```

The results table displays the following data:

CTR_NUMBER	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER
c00001	Robert	Thornberry	bob.thornberry@heatmail.com	01234567898
c00012	Jennifer	Jones	Jjones@fremail.com	01505214598
c00101	John	Doe	unknown@here.com	03216547808
c00103	Andrew	Murcia	MurciaA@globaltech.com	07715246890
c01986	Maria	Galant	margal87@delphiview.com	01442736589
c02001	Brian	Rogers	brianrog@hootech.com	01654564898

6 rows returned in 0.03 seconds    Download

2. Display the name and number of players for each team.

*SELECT name, num\_of\_players  
FROM teams;*

The screenshot shows the Oracle SQL Workshop interface. At the top, there are tabs for 'APEX', 'App Builder', 'SQL Workshop' (which is selected), 'Team Development', and 'Gallery'. On the right side, there's a search bar, a help icon, and a user profile for 'TAM JIA HAO databasejiahaoam'. Below the tabs, there are buttons for 'Language' (set to 'SQL'), 'Rows' (set to 10), 'Clear Command', 'Find Tables', 'Save', and 'Run'. The main area contains the SQL code:

```
1 SELECT name, number_of_players
2 FROM teams;
```

Below the code, the 'Results' tab is selected, showing a table with two columns: 'NAME' and 'NUMBER\_OF\_PLAYERS'. The data returned is:

NAME	NUMBER_OF_PLAYERS
Rockets	25
Celtics	42
Rovers	8
Jets	10

At the bottom left, it says '4 rows returned in 0.00 seconds' and there's a 'Download' link.

3. Display the name, description and category for every item in the table.

*SELECT name, description, category  
FROM items;*

The screenshot shows the Oracle SQL Workshop interface. The top navigation bar includes APEX, App Builder, SQL Workshop, Team Development, and Gallery. The SQL Workshop tab is selected. The main area contains the following SQL command:

```
1 SELECT name, description, category
2 FROM items;
```

The results section displays the output of the query:

NAME	DESCRIPTION	CATEGORY
gloves	catcher mitt	clothing
under shirt	top worn under the game top	clothing
socks	team socks with emblem	clothing
game top	team shirt with emblem	clothing
premium bat	high quality baseball bat	equipment

Below the table, it says "5 rows returned in 0.02 seconds" and there is a "Download" link.

## Database Design Project

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Teams and individual customers are free to purchase any item from the inventory list, but teams get a discount on the list price depending on the number of players. When a customer places an order we record the order items for that order in our database.

OBL has a team of three sales representatives that officially only call on teams but have been known to handle individual customer complaints.

## Section 6 Lesson 6 Exercise 2: Retrieving Data Using SELECT

## **Write and Execute SELECT statements (S6L6 Objective 2)**

In this exercise you will retrieve data that is stored in the database system by using a **SELECT** statement.

## Part 1: Using Arithmetic Operators

1. Every customer has been told they can pay off their current balance over a 12 month period. Display the customer's first name, last name, current balance and monthly payment.

```
SELECT first_name, last_name, current_balance, current_balance/12  
FROM customers;
```

2. Obl is considering giving a gift card to all its customers of 5.00 that can be used to reduce their current balance.

Write a query that will show the customers first name, last name, customer number, current balance and the value of their balance minus the gift value.

*SELECT first\_name, last\_name, ctr\_number, current\_balance, current\_balance - 5  
FROM customers;*

The screenshot shows the Oracle SQL Workshop interface. At the top, there are tabs for APEX, App Builder, SQL Workshop (selected), Team Development, and Gallery. Below the tabs is a search bar and a connection icon for 'TAM JIA HAO database sejahnatam'. The main area has tabs for SQL Commands, SQL (selected), Rows (10), Clear Command, Find Tables, Save, and Run. The SQL command entered is:

```
1 SELECT first_name, last_name, ctr_number, current_balance, current_balance - 5
2 FROM customers;
```

The Results tab is selected, displaying the query results in a grid format:

FIRST_NAME	LAST_NAME	CTR_NUMBER	CURRENT_BALANCE	CURRENT_BALANCE-5
Robert	Thornberry	c00001	150	145
Jennifer	Jones	c00012	0	-5
John	Doe	c00101	987.5	982.5
Andrew	Murcia	c00103	85	80
Maria	Galant	c01986	125.65	120.65
Brian	Rogers	c02001	50	45

At the bottom left, it says '6 rows returned in 0.01 seconds' and 'Download'.

3. What would be the problem with implementing this scheme?

*Deducting a fixed amount may lead to negative balances if a customer's amount balance is less than the gift card value. It's important to handle such situations by preventing negative balances.*

## Part 2 : Using Column Aliases

1. You previously wrote a query that display the customer's first name, last name, current balance and monthly payment. Rewrite the query to use First Name, Last Name, Balance and Monthly Repayments as the column aliases. The aliases are to be shown exactly as described (case sensitive).

aliases. The aliases are to be shown exactly as described (case sensitive).

```
SELECT first_name AS "First Name", last_name AS "Last Name", current_balance AS "Balance",
       current_balance/12 AS "Monthly Repayments"
  FROM customers;
```

### Part 3: Using Literal Character Strings

1. Write a query that will display the team information in the following format:

The Rockets team has 25 players and receives a discount of 10 percent.

Use **Team Information** as the column alias.

SELECT 'The '||name||' team has '||number\_of\_players||' players and receives a discount of '||discount||' percent.' AS "Team Information"  
FROM teams;

The screenshot shows the Oracle SQL Workshop interface. The top navigation bar includes APEX, App Builder, SQL Workshop, Team Development, and Gallery. On the right, there's a search bar, a refresh icon, and a user icon for TAM JIA HAO. Below the navigation is a toolbar with Language (SQL), Rows (10), Clear Command, Find Tables, Save, and Run buttons. The main area contains the SQL command:

```
1 SELECT 'The '||name||' team has '||number_of_players||' players and receives a discount of '||discount||' percent.' AS "Team Information"
2 FROM teams;
```

Under the Results tab, the output is displayed in a table titled "Team Information". The results show four rows of team information:

Team Information
The Rockets team has 25 players and receives a discount of 10 percent.
The Celtics team has 42 players and receives a discount of 20 percent.
The Rovers team has 8 players and receives a discount of percent.
The Jets team has 10 players and receives a discount of 5 percent.

At the bottom left, it says "4 rows returned in 0.00 seconds" and there's a "Download" link.

2. Why does the last team not show a discount?

It is because the discount value is a NULL and it contains the zero value, which means doesn't equal to zero.

## Database Design Project

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#### **Section 6 Lesson 7 Exercise 1: Restricting Data Using WHERE**

##### **Limit rows using WHERE (S6L7 Objective 1)**

In this exercise you will refine the data that is returned in your query by adding a WHERE clause to your SELECT statement.

## Part 1: Using the WHERE Clause.

- Using the unique customer number in the where clause display all columns for Maria Galant.

```
SELECT *
FROM customers
WHERE ctr_number = 'c01986';
```

The screenshot shows the Oracle SQL Workshop interface. The top navigation bar includes APEX, App Builder, SQL Workshop (selected), Team Development, and Gallery. On the right, there's a search bar, a user icon, and a connection status for TAM JIA HAO. The main area has tabs for SQL Commands, Results, Explain, Describe, Saved SQL, and History. The SQL Commands tab contains the handwritten SQL query. The Results tab displays the output:

CTR_NUMBER	EMAIL	FIRST_NAME	LAST_NAME	PHONE_NUMBER	CURRENT_BALANCE	SRE_ID	TEM_ID	LOYALTY_CARD_NUMBER
c01986	margal87@delphiview.com	Maria	Galant	01442736589	125.65	sr03	t003	-

1 rows returned in 0.01 seconds. A Download button is available.

- Display the first name, last name and customer number for all customers who have a current balance of greater than 100. Use an appropriate alias for your column headings.

```
SELECT first_name AS "First Name", last_name AS "Last Name", ctr_number AS "Customer Number",
current_balance AS "Balance"
FROM customers
WHERE current_balance > 100;
```

The screenshot shows the Oracle SQL Workshop interface with the same navigation and connection details as the previous screenshot. The SQL Commands tab contains the handwritten query. The Results tab displays the output:

First Name	Last Name	Customer Number	Balance
Robert	Thornberry	c00001	150
John	Doe	c00101	987.5
Maria	Galant	c01986	125.65

3 rows returned in 0.03 seconds. A Download button is available.

3. Display the order id, date and time of all orders that were placed before the 28<sup>th</sup> of May 2017. Use an appropriate alias for your column headings.

2017

*SELECT id AS "Order ID", odr\_date AS "Order Date", TO\_CHAR(odr\_time, 'HH24:MI:SS') AS "Order Time"  
 FROM orders  
 WHERE odr\_date < '05/28/2017';*

APEX SQL Workshop interface. The SQL Commands tab shows the following code:

```

1 SELECT id AS "Order ID", odr_date AS "Order Date", TO_CHAR(odr_time, 'HH24:MI:SS') AS "Order Time"
2 FROM orders
3 WHERE odr_date < '05/28/2017';
4

```

The Results tab displays the output:

Order ID	Order Date	Order Time
or0101250	04/17/2017	08:32:30
or0101350	05/24/2017	10:30:35

2 rows returned in 0.00 seconds [Download](#)

## Part 2: Range Conditions: BETWEEN Operator

1. Display the inventory id, cost and number of units using appropriate aliases for all items that have a trade cost of between 3.00 and 15.00.

*SELECT id AS "Inventory ID", cost AS "Cost", units AS "Number of units"  
 FROM inventory\_list  
 WHERE cost BETWEEN 3.00 AND 15.00;*

APEX SQL Workshop interface. The SQL Commands tab shows the following code:

```

1 SELECT id AS "Inventory ID", cost AS "Cost", units AS "Number of units"
2 FROM inventory_list
3 WHERE cost BETWEEN 3.00 AND 15.00;

```

The Results tab displays the output:

Inventory ID	Cost	Number of units
il010230125	7.99	250
il010230126	5.24	87

2 rows returned in 0.03 seconds [Download](#)

### Part 3: Membership Conditions: IN Operator

1. Display the inventory id, cost and number of units using appropriate aliases for all items that have 50, 100, 150 or 200 units in stock.

*SELECT id AS "Inventory ID", cost AS "Cost", units AS "Number of units"  
FROM inventory\_list  
WHERE units IN (50,100,150,200)*

The screenshot shows the Oracle SQL Workshop interface. The SQL command entered is:

```
1 SELECT id AS "Inventory ID", cost AS "Cost", units AS "Number of units"
2 FROM inventory_list
3 WHERE units IN (50,100,150,200)
```

The results table displays the following data:

Inventory ID	Cost	Number of units
il010230124	2.5	100

1 rows returned in 0.01 seconds [Download](#)

### Part 4: Membership Conditions: NOT IN Operator

1. Display the inventory id, cost and number of units using appropriate aliases for all items that do not have 50, 100, 150 or 200 units in stock.

*SELECT id AS "Inventory ID", cost AS "Cost", units AS "Number of units"  
FROM inventory\_list  
WHERE units NOT IN (50,100,150,200)*

The screenshot shows the Oracle SQL Workshop interface. The SQL command entered is:

```
1 SELECT id AS "Inventory ID", cost AS "Cost", units AS "Number of units"
2 FROM inventory_list
3 WHERE units NOT IN (50,100,150,200)
```

The results table displays the following data:

Inventory ID	Cost	Number of units
il010230125	7.99	250
il010230126	5.24	87
il010230127	18.95	65
il010230128	97.46	8

4 rows returned in 0.03 seconds [Download](#)

## Part 5: Pattern Matching: LIKE Operator

1. Display item number and name of all items that have a name that begins with g. Use an appropriate alias for your column headings.

*SELECT item\_number AS "Item Number", name AS "Item Name"  
FROM items  
WHERE name LIKE 'g%';*

The screenshot shows the Oracle SQL Workshop interface. The SQL command window contains the following code:

```
1 SELECT item_number AS "Item Number", name AS "Item Name"
2 FROM items
3 WHERE name LIKE 'g%';
```

The results section displays the following data:

Item Number	Item Name
im01101044	gloves
im01101047	game top

Below the table, it says "2 rows returned in 0.00 seconds".

## Part 6 : Pattern Matching: Combining Wildcard Characters with the LIKE Operator

1. Display item number and name of all items that have a name that contain a lowercase o. Use an appropriate alias for your column headings.

*SELECT item\_number AS "Item Number", name AS "Item Name"  
FROM items  
WHERE name LIKE '%o%';*

The screenshot shows the Oracle SQL Workshop interface. The SQL command window contains the following code:

```
1 SELECT item_number AS "Item Number", name AS "Item Name"
2 FROM items
3 WHERE name LIKE '%o%';
```

The results section displays the following data:

Item Number	Item Name
im01101044	gloves
im01101046	socks
im01101047	game top

Below the table, it says "3 rows returned in 0.01 seconds".



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OBL has a team of three sales representatives that officially only call on teams but have been known to handle individual customer complaints.

## Section 6 Lesson 7 Exercise 2: Restricting Data Using WHERE

### Limit rows using WHERE (S6L7 Objective 1)

In this exercise you will refine the data that is returned in your query by adding a WHERE clause to your SELECT statement.

#### Part 1: Using the NULL Conditions

1. Write a query that will display information for teams that don't receive a discount in the following format:

The Rovers team has 25 players and does not receive a discount.

Use **Team Information** as the column alias.

SELECT 'The '|| name || ' team has '|| number\_of\_players|| ' players and does not receive a discount.' AS "Team Information"  
FROM teams  
WHERE discount IS NULL;

The screenshot shows the Oracle SQL Workshop interface. The top navigation bar includes APEX, App Builder, SQL Workshop (selected), Team Development, and Gallery. On the right, there's a search bar, a user icon for TAM JIA HAO, and a schema dropdown set to WKSP\_DATABASEJIHAOTAM. The main workspace is titled 'SQL Commands' and contains the following code:

```
1 SELECT 'The ' || name || ' team has ' || number_of_players || ' players and does not receive a discount.' AS "Team Information"
2 FROM teams
3 WHERE discount IS NULL;
```

Below the code, the 'Results' tab is selected, showing the output:

Team Information

The Rovers team has 25 players and does not receive a discount.

1 rows returned in 0.03 seconds    Download

2. Write a query that will display information for only teams that receive a discount in the following format:

The Rockets team has 25 players and receives a discount of 10 percent.

Use Team Information as the column alias.

*SELECT 'The || name || ' team has || number\_of\_players|| ' players and receives a discount of 10 percent.' AS "Team Information"  
FROM teams  
WHERE discount IS NOT NULL;*

```
1 SELECT 'The || name || ' team has || number_of_players|| ' players and receives a discount of 10 percent.' AS "Team Information"
2 FROM teams
3 WHERE discount IS NOT NULL;
```

The results table shows the output of the query:

Team Information
The Rockets team has 25 players and receives a discount of 10 percent.
The Celtics team has 42 players and receives a discount of 10 percent.
The Jets team has 10 players and receives a discount of 10 percent.

3 rows returned in 0.01 seconds [Download](#)

## Part 2: Logical Operators: AND

1. Write a query that will display the customer number, address line 1 and postal code for customers that live in the

starford area of Liverpool. Use Customer Number, Street Address and Postal Code as the column aliases.

*SELECT ctr\_number AS "Customer Number", Address\_line\_1 AS "Street Address", zip\_code AS "Postal Code"  
FROM customers\_addresses  
WHERE city = 'Liverpool' AND address\_line\_2 = 'Starford';*

```
1 SELECT ctr_number AS "Customer Number", Address_line_1 AS "Street Address", zip_code AS "Postal Code"
2 FROM customers_addresses
3 WHERE city = 'Liverpool' AND address_line_2 = 'Starford';
```

The results table shows the output of the query:

Customer Number	Street Address	Postal Code
c00001	17 Gartsquare Road	LP89JHK

1 rows returned in 0.04 seconds [Download](#)

### Part 3: Logical Operators: OR

1. Write a query that will display the customer number, address line 1 and postal code for customers that live in either starford or Liverpool in general. Use Customer Number, Street Address and Postal Code as the column aliases.

*SELECT ctr\_number AS "Customer Number", Address\_line\_1 AS "Street Address", zip\_code AS "Postal Code"  
FROM customers\_addresses  
WHERE city = 'Liverpool' OR address\_line\_2 = 'Starford';*

The screenshot shows the Oracle SQL Workshop interface. The SQL command window contains the following query:

```
1 SELECT ctr_number AS "Customer Number", Address_line_1 AS "Street Address", zip_code AS "Postal Code"
2 FROM customers_addresses
3 WHERE city = 'Liverpool' OR address_line_2 = 'Starford';
```

The results section displays two rows of data:

Customer Number	Street Address	Postal Code
c00001	17 Gartsquare Road	LP89JHK
c00001	63 Acacia Drive	LP83JHR

2 rows returned in 0.01 seconds [Download](#)

### Part 4: Logical Operators: NOT Equal To

1. Write a query that will display the customer number, address line 1 and postal code for customers that do not live in Liverpool. Use Customer Number, Street Address and Postal Code as the column aliases.

*SELECT ctr\_number AS "Customer Number", Address\_line\_1 AS "Street Address", zip\_code AS "Postal Code"  
FROM customers\_addresses  
WHERE city NOT IN ('Liverpool')*

The screenshot shows the Oracle SQL Workshop interface. The SQL command window contains the following query:

```
1 SELECT ctr_number AS "Customer Number", Address_line_1 AS "Street Address", zip_code AS "Postal Code"
2 FROM customers_addresses
3 WHERE city NOT IN ('Liverpool');
```

The results section displays two rows of data:

Customer Number	Street Address	Postal Code
c00101	54 Ropewill Crescent	ST45AGV
c01986	36 Watercress Lane	JP23YTH

2 rows returned in 0.01 seconds [Download](#)

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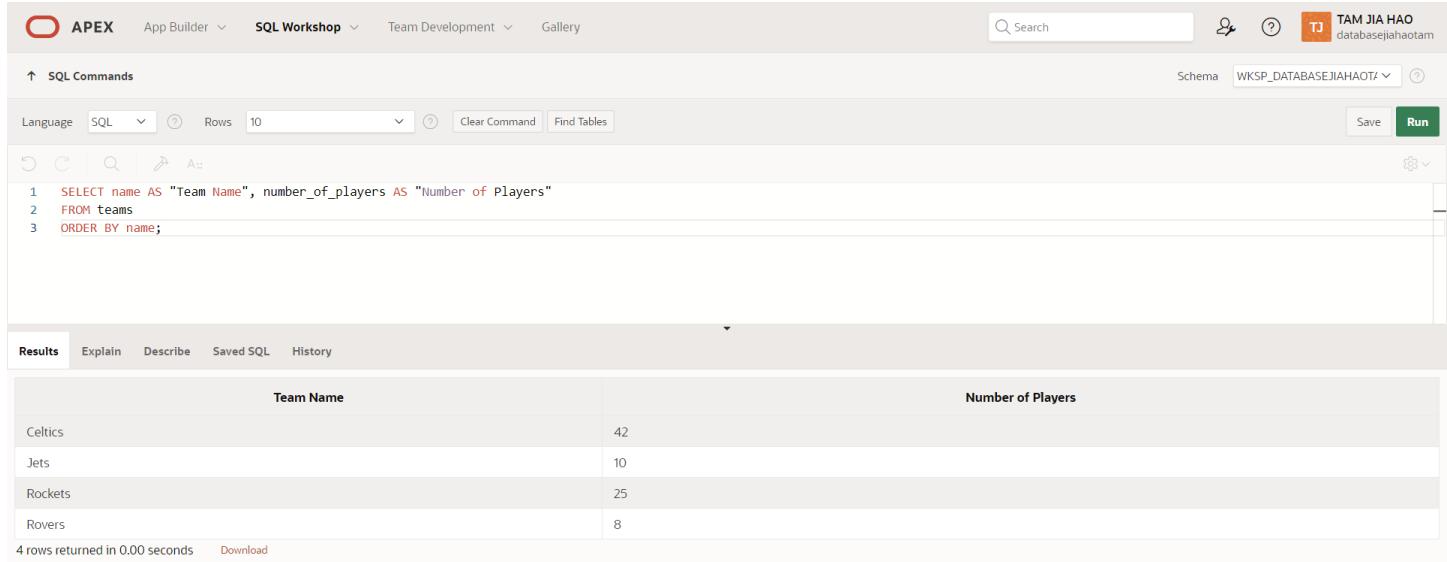
#### Section 6 Lesson 8 Exercise 1: Sorting Data Using ORDER BY

##### Use the ORDER BY Clause to Sort SQL Results (S6L8 Objective 1)

In this exercise you will sort the order of the data that is returned in your query by adding an ORDER BY clause to the end of your SELECT statement.

- Display the team name and number of players alphabetically in order of team name. Use an appropriate alias for your column headings.

*SELECT name AS "Team Name", number\_of\_players AS "Number of Players"  
 FROM teams  
 ORDER BY name;*



The screenshot shows the Oracle SQL Workshop interface. The SQL command entered is:

```
1 SELECT name AS "Team Name", number_of_players AS "Number of Players"
2 FROM teams
3 ORDER BY name;
```

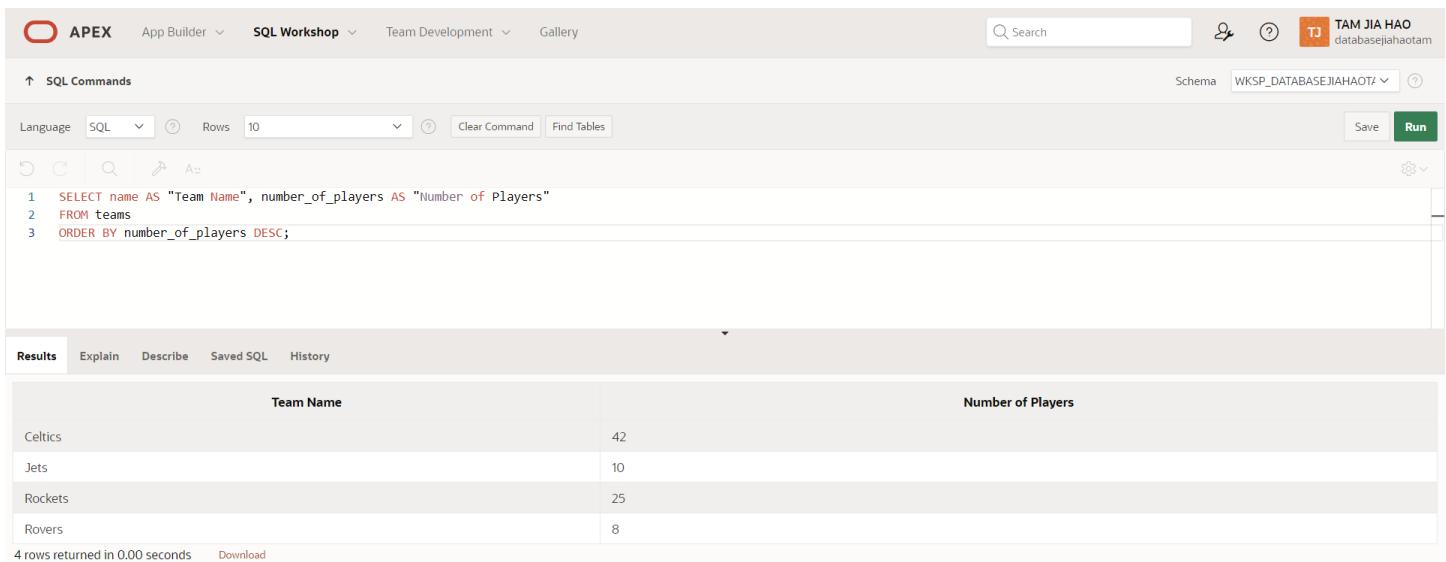
The results table displays the following data:

Team Name	Number of Players
Celtics	42
Jets	10
Rockets	25
Rovers	8

4 rows returned in 0.00 seconds

- Display the team name and number of players in descending order of number of players. Use an appropriate alias for your column headings.

*SELECT name AS "Team Name", number\_of\_players AS "Number of Players"  
 FROM teams  
 ORDER BY number\_of\_players DESC;*



The screenshot shows the Oracle SQL Workshop interface. The SQL command entered is:

```
1 SELECT name AS "Team Name", number_of_players AS "Number of Players"
2 FROM teams
3 ORDER BY number_of_players DESC;
```

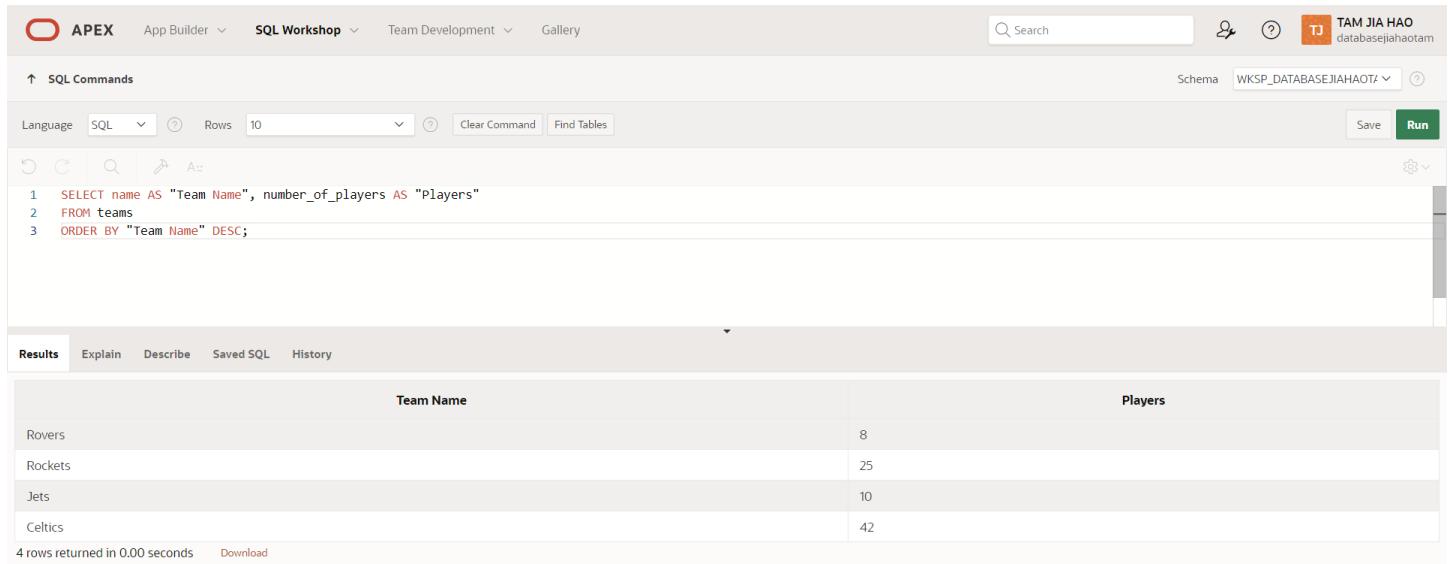
The results table displays the following data:

Team Name	Number of Players
Celtics	42
Jets	10
Rockets	25
Rovers	8

4 rows returned in 0.00 seconds

3. Display the team name and number of players alphabetically in order of team name. Use Team Name for the name alias and Players for the number of players. Sort the output in descending order of name using the alias in the ORDER BY clause.

*SELECT name AS "Team Name", number\_of\_players AS "Players"  
 FROM teams  
 ORDER BY "Team Name" DESC;*



The screenshot shows the Oracle SQL Workshop interface. The top navigation bar includes APEX, App Builder, SQL Workshop (selected), Team Development, and Gallery. The right side shows a user profile for TAM JIA HAO and the schema WKSP\_DATABASEJIAHAOTAM. The main area has tabs for SQL Commands, Explain, Describe, Saved SQL, and History. The SQL Commands tab contains the following SQL code:

```

1 SELECT name AS "Team Name", number_of_players AS "Players"
2 FROM teams
3 ORDER BY "Team Name" DESC;
  
```

The Results tab displays the query results in a table:

Team Name	Players
Rovers	8
Rockets	25
Jets	10
Celtics	42

Below the table, it says "4 rows returned in 0.00 seconds" and there is a "Download" link.

## Database Design Project

### Oracle Baseball League Store Database

#### **Project Scenario:**

You are a small consulting company specializing in database development. You have just been awarded the contract to develop a data model for a database application system for a small retail store called Oracle Baseball League (OBL).

The Oracle Baseball League store serves the entire surrounding community selling baseball kit. The OBL has two types of customer, there are individuals who purchase items like balls, cleats, gloves, shirts, screen printed t-shirts, and shorts. Additionally customers can represent a team when they purchase uniforms and equipment on behalf of the team.

Teams and individual customers are free to purchase any item from the inventory list, but teams get a discount on the list price depending on the number of players. When a customer places an order we record the order items for that order in our database.

OBL has a team of three sales representatives that officially only call on teams but have been known to handle individual customer complaints.

#### **Section 6 Lesson 8 Exercise 2: Sorting Data Using ORDER BY**

##### **Part 1 : TOP-N-ANALYSIS (S6L8 Objective 3)**

1. The customers are numbered sequentially with each new customer being assigned a higher customer number. Use TOP-N-ANALYSIS to only show the First and last name of the first three customers. Show the customers first and last name in the same column using Customer Name as the column alias.

```
SELECT ROWNUM AS "Customer Number",
       first_name|| ' ' || last_name AS "Customer Name"
  FROM (
    SELECT first_name, last_name
      FROM customers
     ORDER BY ctr_number)
 WHERE ROWNUM <=3;
```

The screenshot shows the Oracle SQL Workshop interface. The SQL command entered is:

```
1 SELECT ROWNUM AS "Customer Number",
2       first_name|| ' ' || last_name AS "Customer Name"
3  FROM (
4    SELECT first_name, last_name
5      FROM customers
6     ORDER BY ctr_number)
7 WHERE ROWNUM <=3;
8
```

The results section displays the output:

Customer Number	Customer Name
1	Robert Thornberry
2	Jennifer Jones
3	John Doe

3 rows returned in 0.00 seconds [Download](#)

## Part 2 : Using a Substitution Variable (S6L8 Objective 4)

1. Use a substitution variable that will allow you to enter the commission rate for the sales representatives. The first and last names should be displayed to screen for any sales representatives that earn that commission rate and the output should be ordered by their last name. Use an appropriate alias for your column headings.

```
SELECT first_name AS "First Name", last_name AS "Last Name", commission_rate AS "Commission Rate"
FROM sales_representatives
WHERE commission_rate = :commission_rate
ORDER BY last_name;
```

The screenshot shows the Oracle APEX SQL Workshop interface. On the left, the SQL Commands tab displays the following SQL code:

```
1 SELECT first_name AS "First Name", last_name AS "Last Name", commission_rate AS "Commission Rate"
2 FROM sales_representatives
3 WHERE commission_rate = :commission_rate
4 ORDER BY last_name;
```

On the right, a modal dialog titled "Enter Bind Variables - Google Chrome" is open, showing a table with one row:

Bind Variable	Value
:COMMISSION_RATE	<input type="text"/>

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