



UTM

UNIVERSITI TEKNOLOGI MALAYSIA

DATABASE
SECD2523 (SECTION 1)
SEMESTER 1- 2023/2024

LAB SQL-3
DML2

LECTURER : DR. HASLINA HASHIM

NAME	MATRIC NO.
AMALIA YASMIN BINTI ABDUL AZIZ	A22EC0138

Part 1 (DFo_6_6_1_Project)

Section 6 Lesson 6 Exercise 1 : Retrieving Data Using SELECT

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. customer

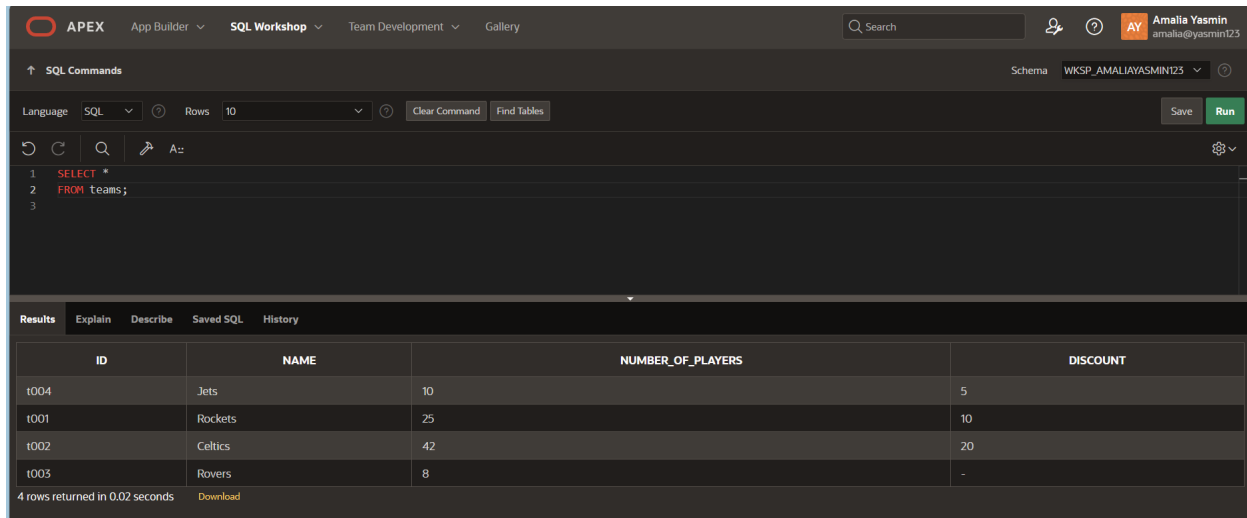
```
SELECT *  
FROM customers;
```

The screenshot displays the APEX SQL Workshop interface. At the top, the navigation bar includes 'APEX', 'App Builder', 'SQL Workshop', 'Team Development', and 'Gallery'. A search bar and user profile 'Amalia Yasmin' are also visible. The main area is titled 'SQL Commands' and shows a query: `SELECT *
FROM customers;`. Below the query editor, the 'Results' tab is active, displaying a table with 6 rows and 9 columns. The columns are: CTR_NUMBER, EMAIL, FIRST_NAME, LAST_NAME, PHONE_NUMBER, CURRENT_BALANCE, SRE_ID, TEM_ID, and LOYALTY_CARD_NUMBER. The data rows show customer information such as Brian Rogers, Robert Thornberry, Jennifer Jones, John Doe, Andrew Murcia, and Maria Galant. At the bottom left, it states '6 rows returned in 0.02 seconds' with a 'Download' link.

CTR_NUMBER	EMAIL	FIRST_NAME	LAST_NAME	PHONE_NUMBER	CURRENT_BALANCE	SRE_ID	TEM_ID	LOYALTY_CARD_NUMBER
c02001	brianrog@hootech.com	Brian	Rogers	01654564898	50	-	-	lc4587
c00001	bob.thornberry@heatmail.com	Robert	Thornberry	01234567898	150	sr01	t001	-
c00012	jones@freemail.com	Jennifer	Jones	01505214598	0	-	-	lc1015
c00101	unknown@here.com	John	Doe	03216547808	9875	sr01	t002	-
c00103	MurciaA@globaltech.com	Andrew	Murcia	07715246890	85	-	-	lc2341
c01986	margal87@delphiview.com	Maria	Galant	01442736589	125.65	sr03	t003	-

2. teams

```
SELECT *  
FROM teams;
```

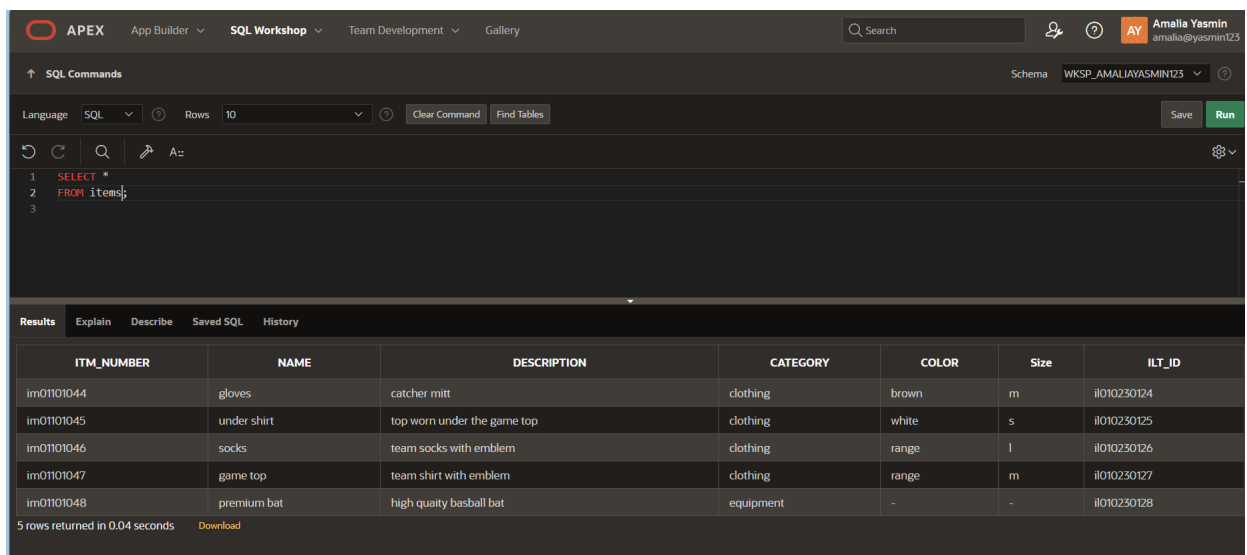


The screenshot shows the APEX SQL Workshop interface. The top navigation bar includes 'APEX', 'App Builder', 'SQL Workshop', 'Team Development', and 'Gallery'. A search bar and user profile 'Amalia Yasmin' are on the right. The 'SQL Commands' panel shows the query: `SELECT *
FROM teams;`. The 'Results' tab is active, displaying a table with 4 rows. The table has columns: ID, NAME, NUMBER_OF_PLAYERS, and DISCOUNT. The data rows are: (t004, Jets, 10, 5), (t001, Rockets, 25, 10), (t002, Celtics, 42, 20), and (t003, Rovers, 8, -). A status bar at the bottom indicates '4 rows returned in 0.02 seconds' and provides a 'Download' link.

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

3. items

```
SELECT *  
FROM items;
```



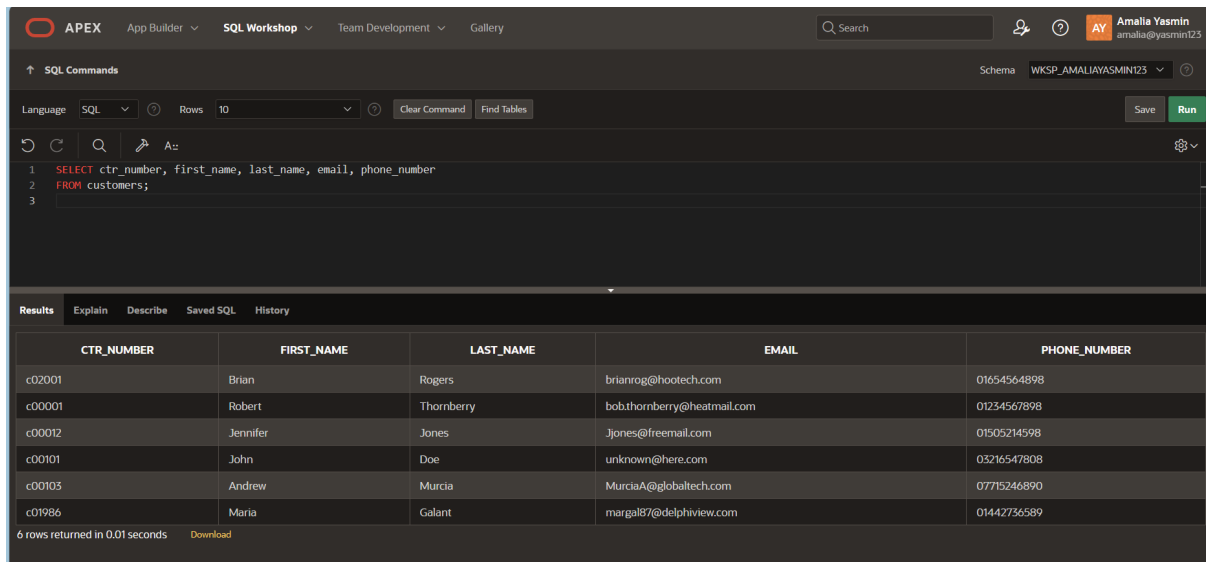
The screenshot shows the APEX SQL Workshop interface. The top navigation bar includes 'APEX', 'App Builder', 'SQL Workshop', 'Team Development', and 'Gallery'. A search bar and user profile 'Amalia Yasmin' are on the right. The 'SQL Commands' panel shows the query: `SELECT *
FROM items;`. The 'Results' tab is active, displaying a table with 5 rows. The table has columns: ITM_NUMBER, NAME, DESCRIPTION, CATEGORY, COLOR, Size, and ILT_ID. The data rows are: (im01i01044, gloves, catcher mitt, clothing, brown, m, il010230124), (im01i01045, under shirt, top worn under the game top, clothing, white, s, il010230125), (im01i01046, socks, team socks with emblem, clothing, range, l, il010230126), (im01i01047, game top, team shirt with emblem, clothing, range, m, il010230127), and (im01i01048, premium bat, high quality baseball bat, equipment, -, -, il010230128). A status bar at the bottom indicates '5 rows returned in 0.04 seconds' and provides a 'Download' link.

ITM_NUMBER	NAME	DESCRIPTION	CATEGORY	COLOR	Size	ILT_ID
im01i01044	gloves	catcher mitt	clothing	brown	m	il010230124
im01i01045	under shirt	top worn under the game top	clothing	white	s	il010230125
im01i01046	socks	team socks with emblem	clothing	range	l	il010230126
im01i01047	game top	team shirt with emblem	clothing	range	m	il010230127
im01i01048	premium bat	high quality baseball bat	equipment	-	-	il010230128

Part 2 : Selecting Specific Columns

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

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

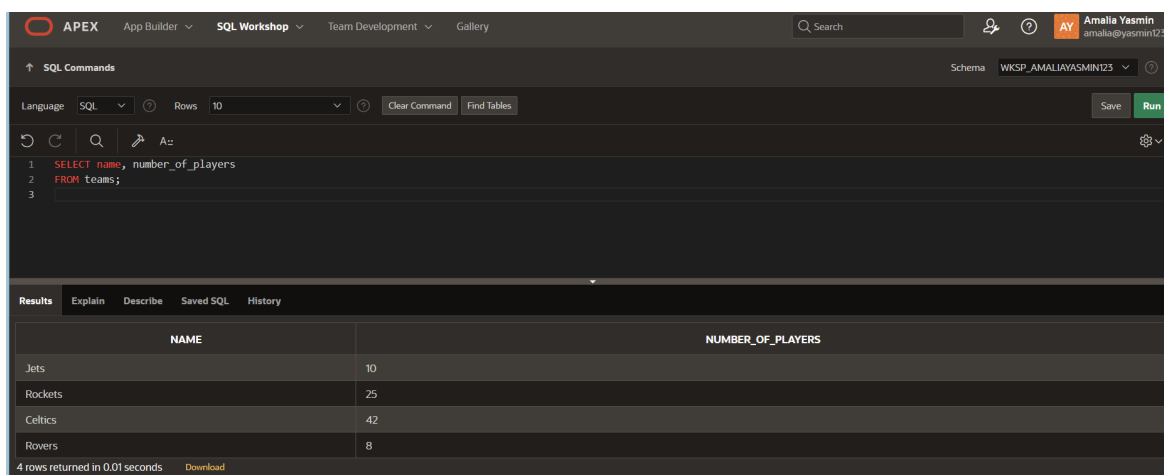


The screenshot shows the APEX SQL Workshop interface. The SQL command entered is: `SELECT ctr_number, first_name, last_name, email, phone_number FROM customers;`. The results are displayed in a table with 6 rows. The status bar indicates "6 rows returned in 0.01 seconds".

CTR_NUMBER	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER
c02001	Brian	Rogers	brianrog@hooitech.com	01654564898
c00001	Robert	Thornberry	bobthornberry@heatmail.com	01234567898
c00012	Jennifer	Jones	jjones@freemail.com	01505214598
c00101	John	Doe	unknown@ihere.com	03216547808
c00103	Andrew	Murcia	MurciaA@globaltech.com	07715246890
c01986	Maria	Galant	margal87@delphiview.com	01442736589

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

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



The screenshot shows the APEX SQL Workshop interface. The SQL command entered is: `SELECT name, number_of_players FROM teams;`. The results are displayed in a table with 4 rows. The status bar indicates "4 rows returned in 0.01 seconds".

NAME	NUMBER_OF_PLAYERS
Jets	10
Rockets	25
Celtics	42
Rovers	8

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

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

The screenshot shows the APEX SQL Workshop interface. At the top, there's a navigation bar with 'APEX', 'App Builder', 'SQL Workshop', 'Team Development', and 'Gallery'. A search bar and user information 'Amalie Yasmin' are on the right. Below this, the 'SQL Commands' section is active, showing a query editor with the following SQL code:

```
1 SELECT name, description, category  
2 FROM items;  
3
```

Below the editor, the 'Results' tab is selected, displaying a table with 5 rows. The table has three columns: NAME, DESCRIPTION, and CATEGORY. The data is as follows:

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 quaity baseball bat	equipment

At the bottom of the results section, it says '5 rows returned in 0.02 seconds' and provides a 'Download' link.

Part 2 (Dfo_6_6_2_Project)

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;
```

APEX

App Builder

SQL Workshop

Team Development

Gallery

Search

Amalia Yasmin
amalia@yasmin123

SQL Commands

Schema WKSP_AMALIAYASMIN123

Language SQL Rows 10 Clear Command Find Tables Save Run

↺

↻

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🔗

A-Z

1 SELECT first_name, last_name, current_balance, current_balance/12

2 FROM customers;

3 |

Results

Explain Describe Saved SQL History

FIRST_NAME	LAST_NAME	CURRENT_BALANCE	CURRENT_BALANCE/12
Brian	Rogers	50	4.1666666666666666666666666666667
Robert	Thornberry	150	12.5
Jennifer	Jones	0	0
John	Doe	9875	82.29166666666666666666666666667
Andrew	Murcia	85	7.0833333333333333333333333333333
Maria	Gallant	125.65	10.4708333333333333333333333333333

6 rows returned in 0.01 seconds

Download

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;
```


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 APEX SQL Workshop interface. The top navigation bar includes 'APEX', 'App Builder', 'SQL Workshop', 'Team Development', and 'Gallery'. A search bar and user profile 'Amalia Yasmin' are on the right. The 'SQL Commands' tab is active, showing a query editor with the following SQL code:

```
1 SELECT 'The ' || name || ' team has ' || number_of_players || ' players and receives a discount of ' || discount || ' percent.' AS "Team Information"  
2 FROM teams;  
3  
4
```

Below the editor, the 'Results' tab is selected, displaying the output of the query. The results are shown in a table with the column header 'Team Information'.

Team Information
The Jets team has 10 players and receives a discount of 5 percent.
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.

At the bottom, it indicates '4 rows returned in 0.00 seconds' and provides a 'Download' link.

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

It contains a null value.

Part 3 (DFo_6_7_1_Project)

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

1. 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 APEX SQL Workshop interface. The top navigation bar includes 'APEX', 'App Builder', 'SQL Workshop', 'Team Development', and 'Gallery'. A search bar and user profile 'Amalia Yasmin' are on the right. The 'SQL Commands' tab is active, displaying the query: `SELECT *
FROM customers
WHERE ctr_number = 'c01986';`. The 'Results' tab shows a single row of data for customer 'c01986' (Maria Galant) with a current balance of 125.65. The interface is dark-themed.

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 [Download](#)

2. 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", current_balance  
AS "Balance"  
FROM customers  
WHERE current_balance > 100;
```

APEX App Builder SQL Workshop Team Development Gallery

Search

Amalia Yasmin amalia@yasmin123

SQL Commands Schema WKSP_AMALIAYASMIN123

Language SQL Rows 10 Clear Command Find Tables Save Run

```
1 SELECT first_name AS "First Name", last_name AS "Last Name", current_balance AS "Balance"
2 FROM customers
3 WHERE current_balance >100;
4
```

Results Explain Describe Saved SQL History

First Name	Last Name	Balance
Robert	Thornberry	150
John	Doe	987.5
Maria	Galant	125.65

3 rows returned in 0.01 seconds Download

3. Display the order id, date and time of all orders that were placed before the 28th of May 2019. Use an appropriate alias for your column headings.

```
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 App Builder SQL Workshop Team Development Gallery

Search

Amalia Yasmin amalia@yasmin123

SQL Commands Schema WKSP_AMALIAYASMIN123

Language SQL Rows 10 Clear Command Find Tables Save Run

```
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
```

Results Explain Describe Saved SQL History

Order ID	Order Date	Order Time
or0101250	04/11/2017	08:52:50
or0101350	05/24/2017	10:30:35

2 rows returned in 0.01 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 in Stock"  
FROM inventory_list  
WHERE cost BETWEEN 3 AND 15;
```

The screenshot shows the APEX SQL Workshop interface. The SQL Commands tab is active, displaying the following query:

```
1 SELECT id AS "Inventory ID", cost AS "Cost", units AS "Number of Units in Stock"  
2 FROM inventory_list  
3 WHERE cost BETWEEN 3 AND 15;  
4
```

The Results tab is selected, showing a table with 2 rows returned in 0.02 seconds. The table has three columns: Inventory ID, Cost, and Number of Units in Stock.

Inventory ID	Cost	Number of Units in Stock
il010230125	7.99	250
il010230126	5.24	87

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 in Stock"  
FROM inventory_list  
WHERE units IN (50, 100, 150, 200, 250);
```

The screenshot shows the APEX SQL Workshop interface. The SQL Commands tab is active, displaying the following query:

```
1 SELECT id AS "Inventory ID", cost AS "Cost", units AS "Number of Units in Stock"  
2 FROM inventory_list  
3 WHERE units IN (50, 100, 150, 200, 250);  
4
```

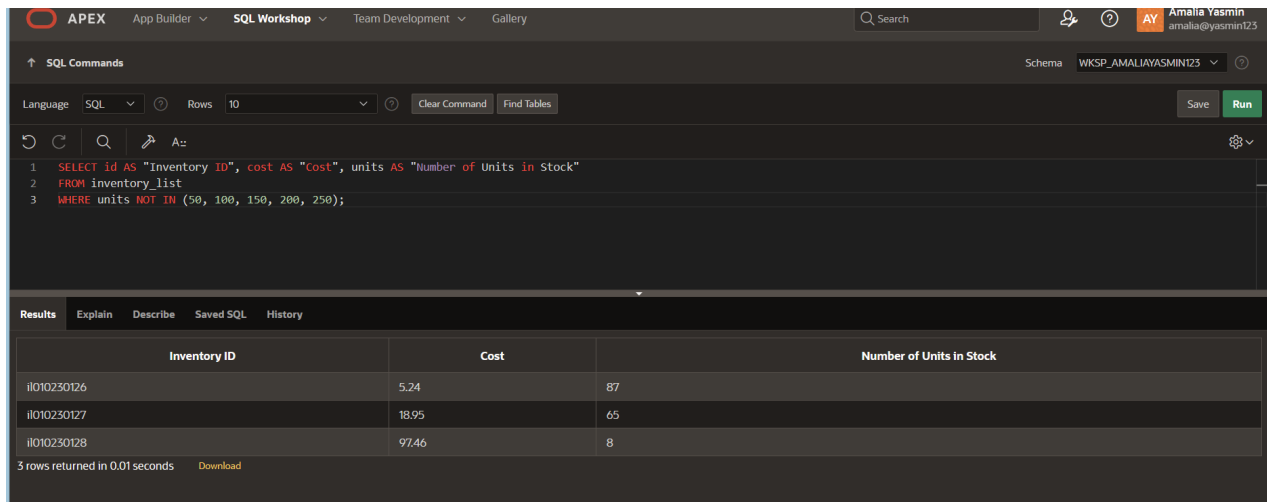
The Results tab is selected, showing a table with 2 rows returned in 0.01 seconds. The table has three columns: Inventory ID, Cost, and Number of Units in Stock.

Inventory ID	Cost	Number of Units in Stock
il010230124	2.5	100
il010230125	7.99	250

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 in Stock"  
FROM inventory_list  
WHERE units NOT IN (50, 100, 150, 200, 250);
```



The screenshot shows the APEX SQL Workshop interface. The SQL command area contains the following query:

```
1 SELECT id AS "Inventory ID", cost AS "Cost", units AS "Number of Units in Stock"  
2 FROM inventory_list  
3 WHERE units NOT IN (50, 100, 150, 200, 250);
```

The Results tab is selected, displaying a table with 3 rows. The table has three columns: Inventory ID, Cost, and Number of Units in Stock.

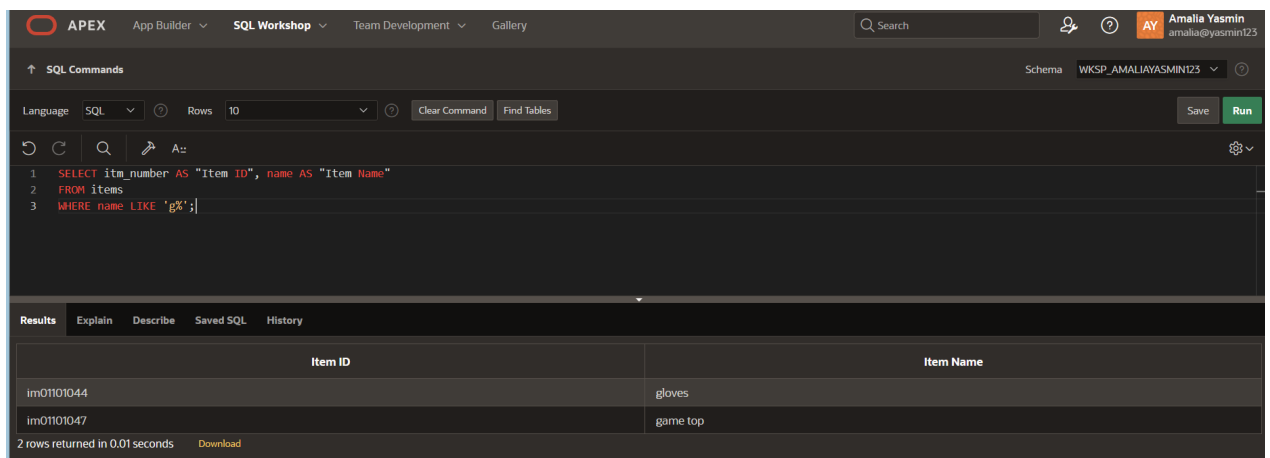
Inventory ID	Cost	Number of Units in Stock
il010230126	5.24	87
il010230127	18.95	65
il010230128	97.46	8

3 rows returned in 0.01 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 itm_number AS "Item ID", name AS "Item Name"  
FROM items  
WHERE name LIKE 'g%';
```



The screenshot shows the APEX SQL Workshop interface. The SQL command area contains the following query:

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

The Results tab is selected, displaying a table with 2 rows. The table has two columns: Item ID and Item Name.

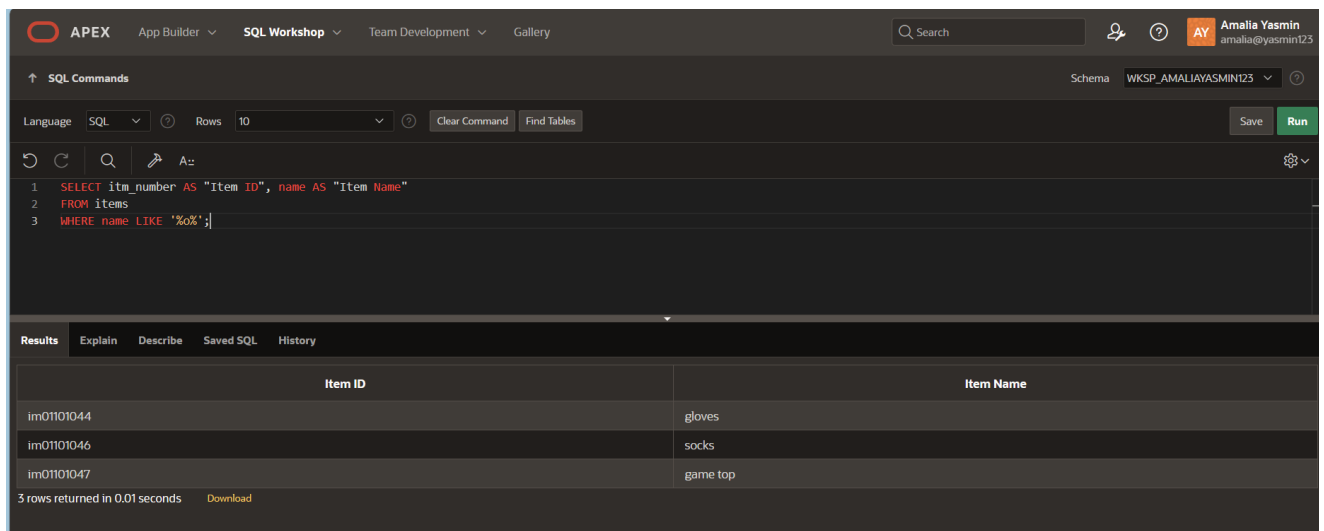
Item ID	Item Name
im01101044	gloves
im01101047	game top

2 rows returned in 0.01 seconds. Download

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

1. Display the 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 itm_number AS "Item ID", name AS "Item Name"  
FROM items  
WHERE name LIKE '%o%';
```



The screenshot shows the APEX SQL Workshop interface. The top navigation bar includes 'APEX', 'App Builder', 'SQL Workshop', 'Team Development', and 'Gallery'. A search bar and user profile 'Amalia Yasmin' are on the right. The 'SQL Commands' tab is active, showing a query editor with the following SQL code:

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

Below the editor, the 'Results' tab is selected, displaying a table with the following data:

Item ID	Item Name
im01101044	gloves
im01101046	socks
im01101047	game top

At the bottom, it states '3 rows returned in 0.01 seconds' with a 'Download' link.

Part 4 (DFo_6_7_2_Project)

Section 6 Lesson 7 Exercise 3: 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.

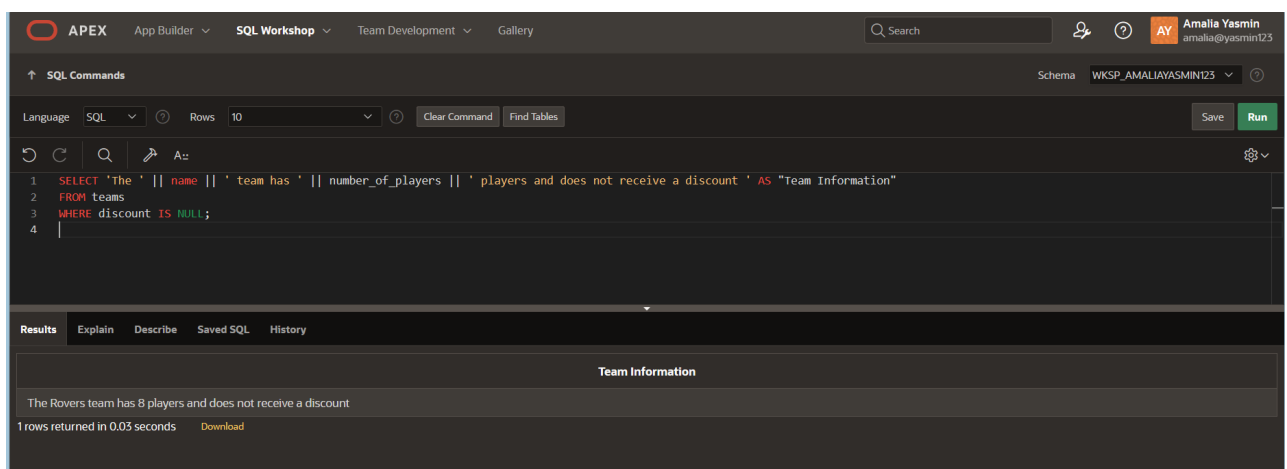
Part 1: Using the NULL Conditions

1. Write a query that will display information for teams that dont 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;
```



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 ' || discount || ' percent.' AS "Team Information"  
FROM teams  
WHERE discount IS NOT NULL;
```

The screenshot shows the APEX SQL Workshop interface. The SQL command area contains the following query:

```

1 SELECT 'The ' || name || ' team has ' || number_of_players || ' players and receives a discount of ' || discount || ' percent.' AS "Team Information"
2 FROM teams
3 WHERE discount IS NOT NULL;
4
5

```

The Results tab shows the output of the query:

Team Information
The Jets team has 10 players and receives a discount of 5 percent.
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.

3 rows returned in 0.00 seconds

Part 2: Logical Operators: AND

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

```

The screenshot shows the APEX SQL Workshop interface. The SQL command area 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' AND address_line_2 = 'Starford';
4
5

```

The Results tab shows the output of the query:

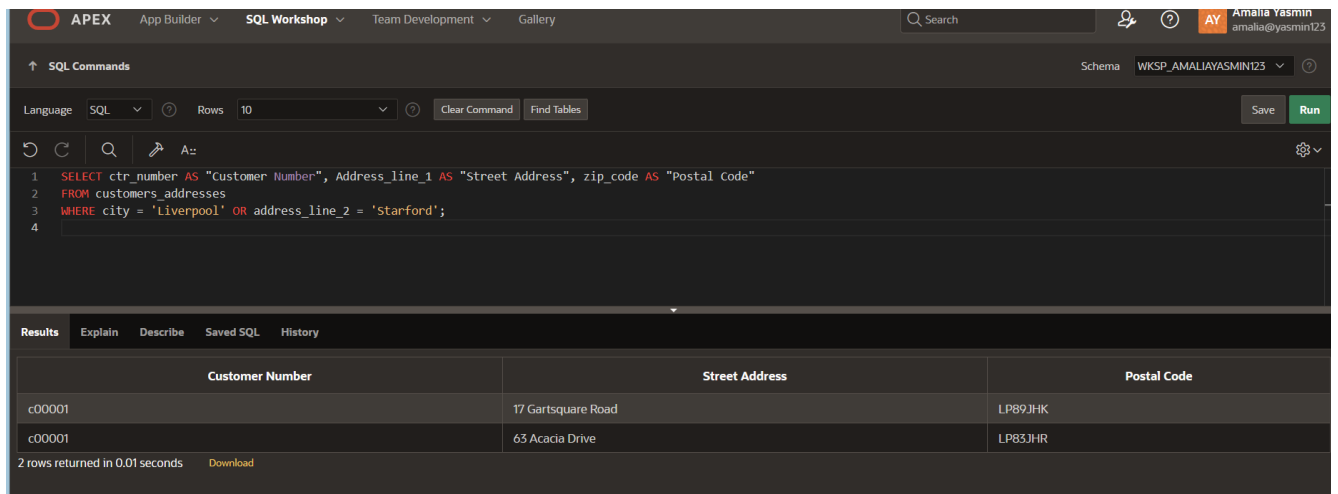
Customer Number	Street Address	Postal Code
c00001	17 Gartsquare Road	LP89JHK

1 rows returned in 0.02 seconds

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 APEX SQL Workshop interface. The SQL Commands tab is active, displaying 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';  
4
```

The Results tab is also active, showing the output of the query:

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

2 rows returned in 0.01 seconds

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');
```


APEX

App Builder

SQL Workshop

Team Development

Gallery

Search

Amalia Yasmin

amalia@yasmin123

SQL Commands

Schema WKSP_AMALIAYASMIN123

Language SQL

Rows 10

Clear Command

Find Tables

Save

Run

A:

1

2

3

4

5

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')

);

Results

Explain

Describe

Saved SQL

History

2 rows returned in 0.01 seconds

Download

Part 5 (DFo_6_8_1_Project)

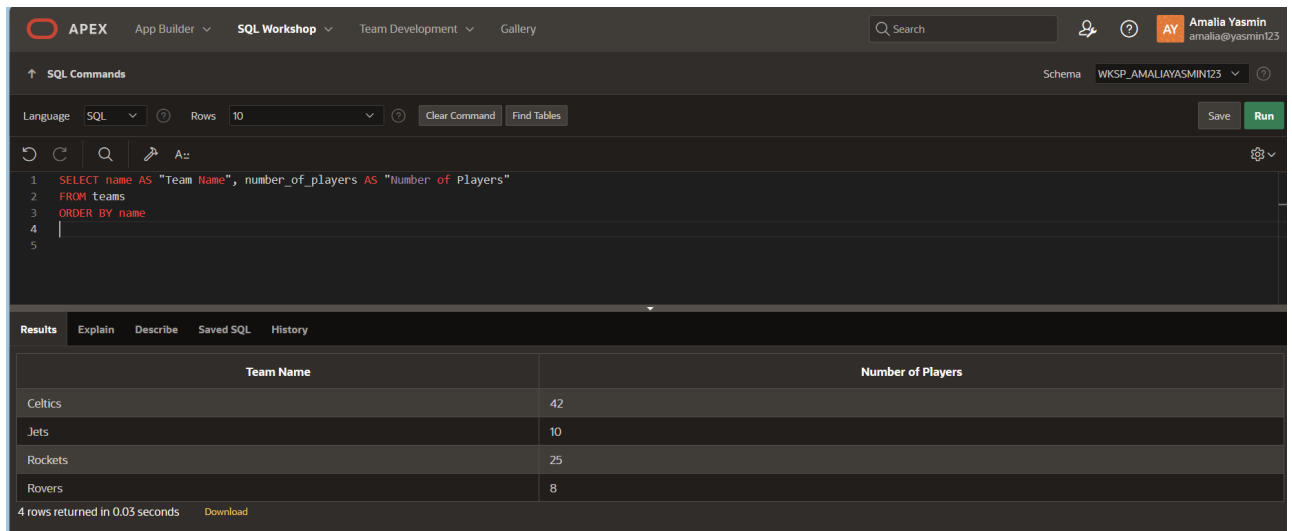
Section 6 Lesson 8 Exercise 1 : Sorting Data Using ORDER BY

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.

1. 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 APEX SQL Workshop interface. The SQL command area contains the following query:

```
1 SELECT name AS "Team Name", number_of_players AS "Number of Players"  
2 FROM teams  
3 ORDER BY name  
4  
5
```

The Results tab is active, displaying a table with the following data:

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

4 rows returned in 0.03 seconds. Download

2. 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;
```

APEX App Builder SQL Workshop Team Development Gallery

Search

Amalia Yasmin amalia@yasmin123

SQL Commands

Schema WKSP_AMALIAYASMIN123

Language SQL Rows 10 Clear Command Find Tables Save Run

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

Results Explain Describe Saved SQL History

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

4 rows returned in 0.02 seconds Download

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 "Number of Players"
FROM teams
ORDER BY "Team Name" DESC;
```

APEX App Builder SQL Workshop Team Development Gallery

Search

Amalia Yasmin amalia@yasmin123

SQL Commands

Schema WKSP_AMALIAYASMIN123

Language SQL Rows 10 Clear Command Find Tables Save Run

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

Results Explain Describe Saved SQL History

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

4 rows returned in 0.01 seconds Download

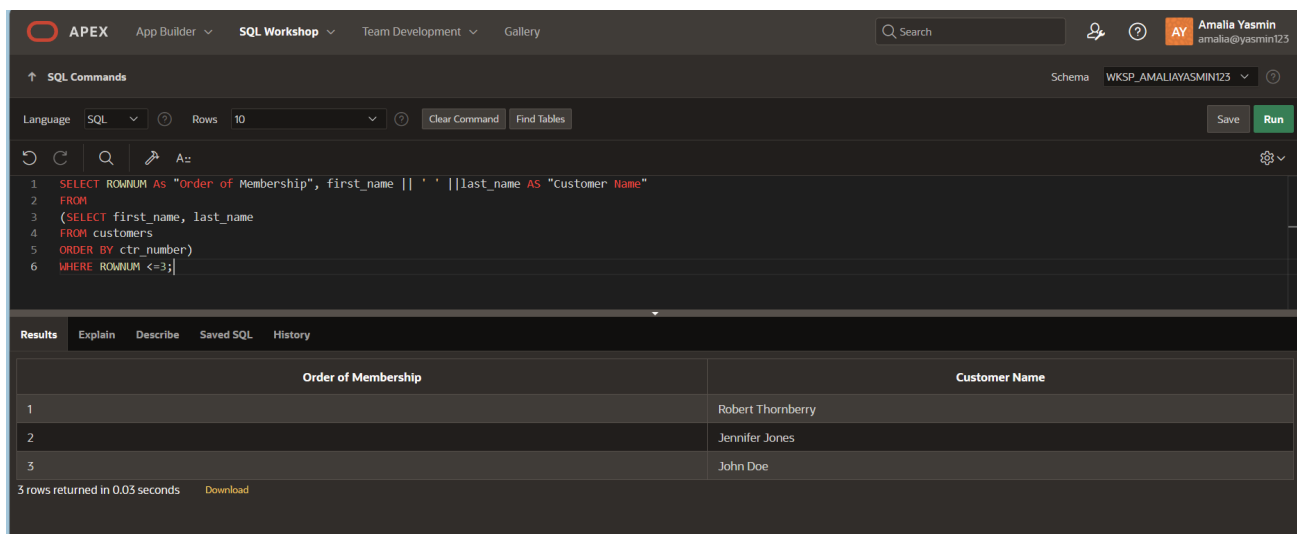
Part 6 (DFo_6_8_2_Project)

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 "Order of Membership", 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 APEX SQL Workshop interface. The SQL command is entered in the editor and executed. The results are displayed in a table with two columns: "Order of Membership" and "Customer Name". The results show the first three customers: Robert Thornberry, Jennifer Jones, and John Doe.

Order of Membership	Customer Name
1	Robert Thornberry
2	Jennifer Jones
3	John Doe

3 rows returned in 0.03 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 || ' ' || last_name AS "Sales Representative Details"
FROM sales_representatives
WHERE COMMISSION_RATE = :COMMISSION_RATE
ORDER BY last_name;
```

The screenshot shows the 'Bind Variable' dialog in the APEX SQL Workshop. The 'Bind Variable' column contains ':COMMISSION_RATE' and the 'Value' column contains '10'. A green 'Submit' button is located at the top right of the dialog. The background shows the SQL Workshop interface with a search bar and user information 'Amalia Yasmin'.

Enter Commision rate in the column value and submit.

The screenshot shows the 'SQL Commands' window in the APEX SQL Workshop. The SQL query is displayed in the editor:

```
1 SELECT first_name || ' ' || last_name AS "Sales Representative Details"
2 FROM sales_representatives
3 WHERE COMMISSION_RATE = :COMMISSION_RATE
4 ORDER BY last_name;
```

Below the editor, the 'Results' tab is selected, showing the query results. The results are displayed in a table with the title 'Sales Representative Details'. The first row shows 'Charles Raymond'. The status bar indicates '1 rows returned in 0.02 seconds' and a 'Download' button is available.

The sales representative with commission rate value entered just now will be displayed.