Database Design Project

Oracle Baseball League Store Database

Project Scenario:

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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.

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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 6 Exercise 1: Retrieving Data Using SELECT

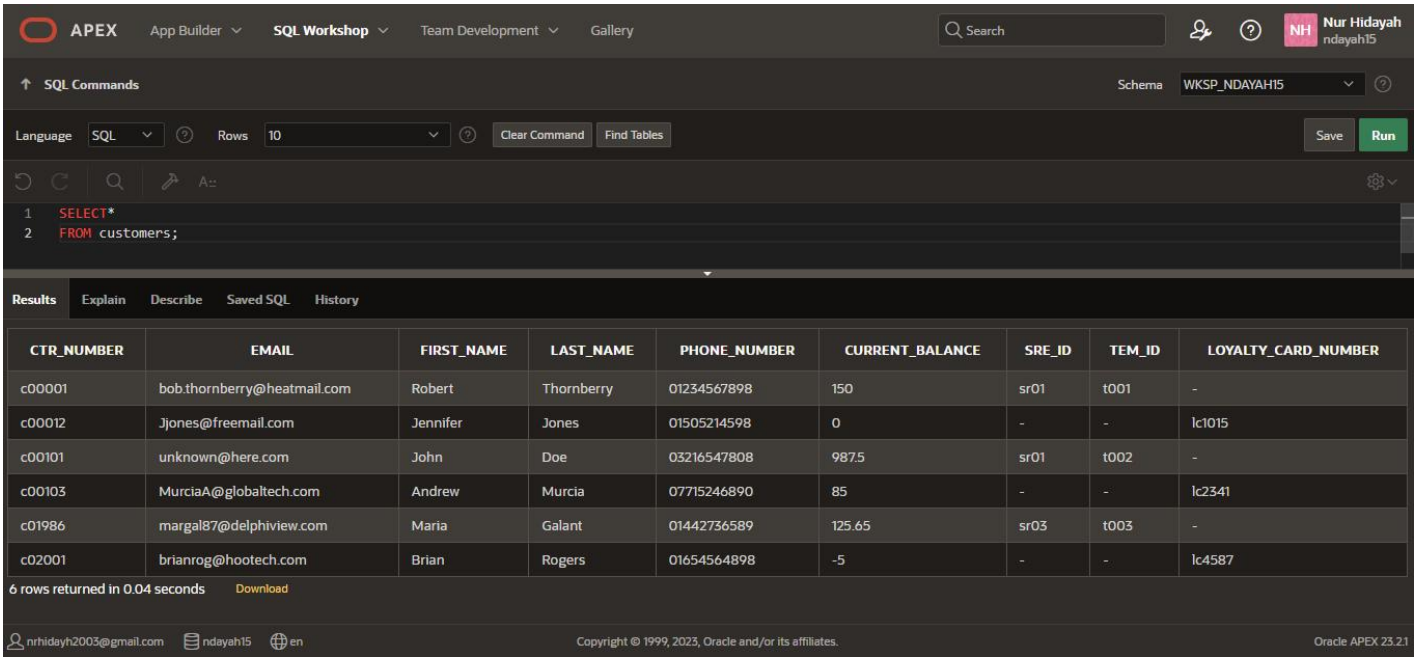
Write and Execute SELECT statements (S6L6 Objective 2)

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:

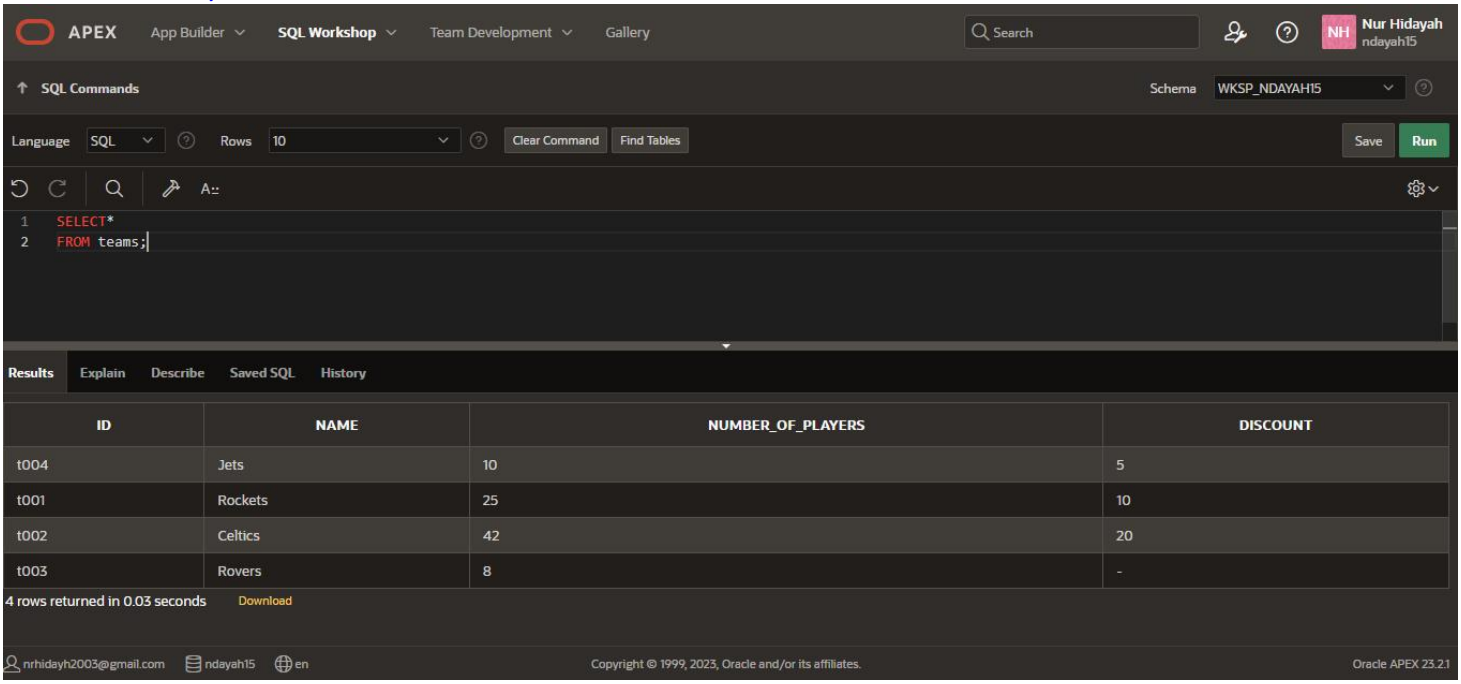
1. customers.
   SELECT*
   FROM customers;



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	-5	-	-	lc4587

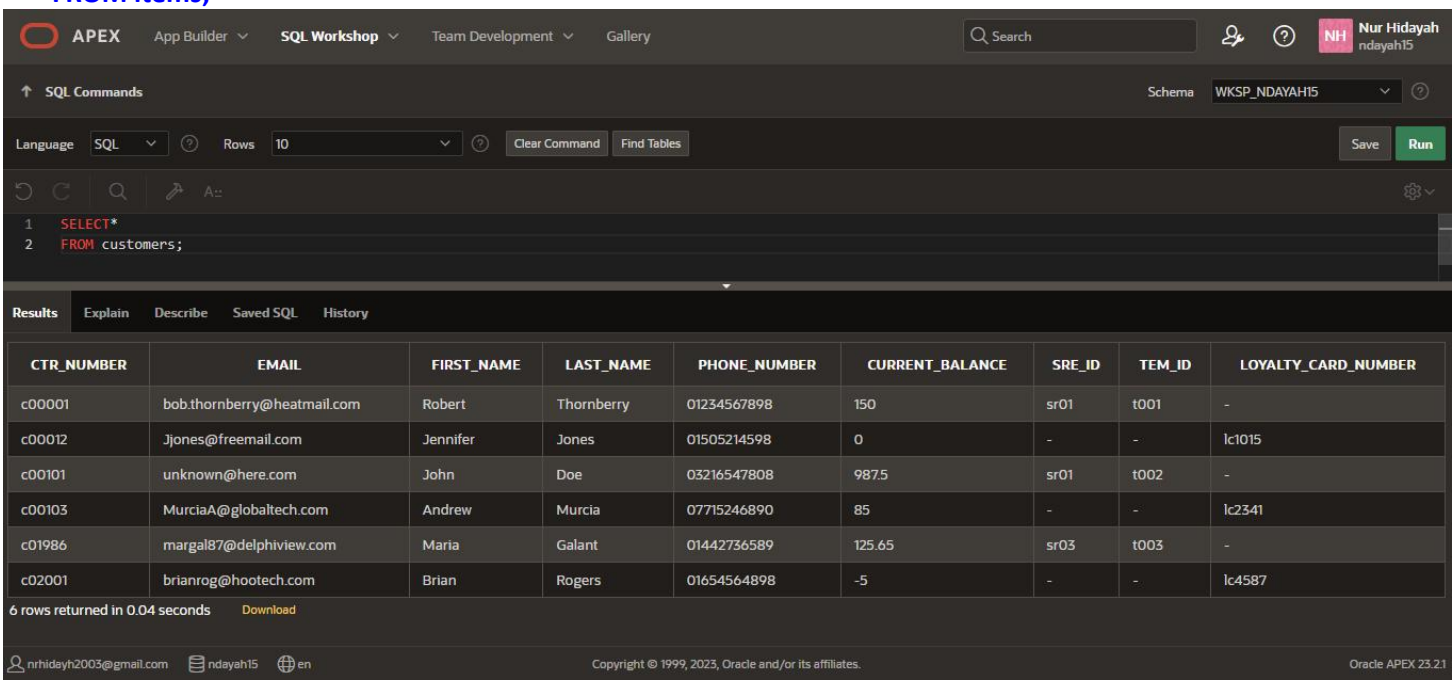
2. teams.

```
SELECT*
FROM teams;
```



3. Items

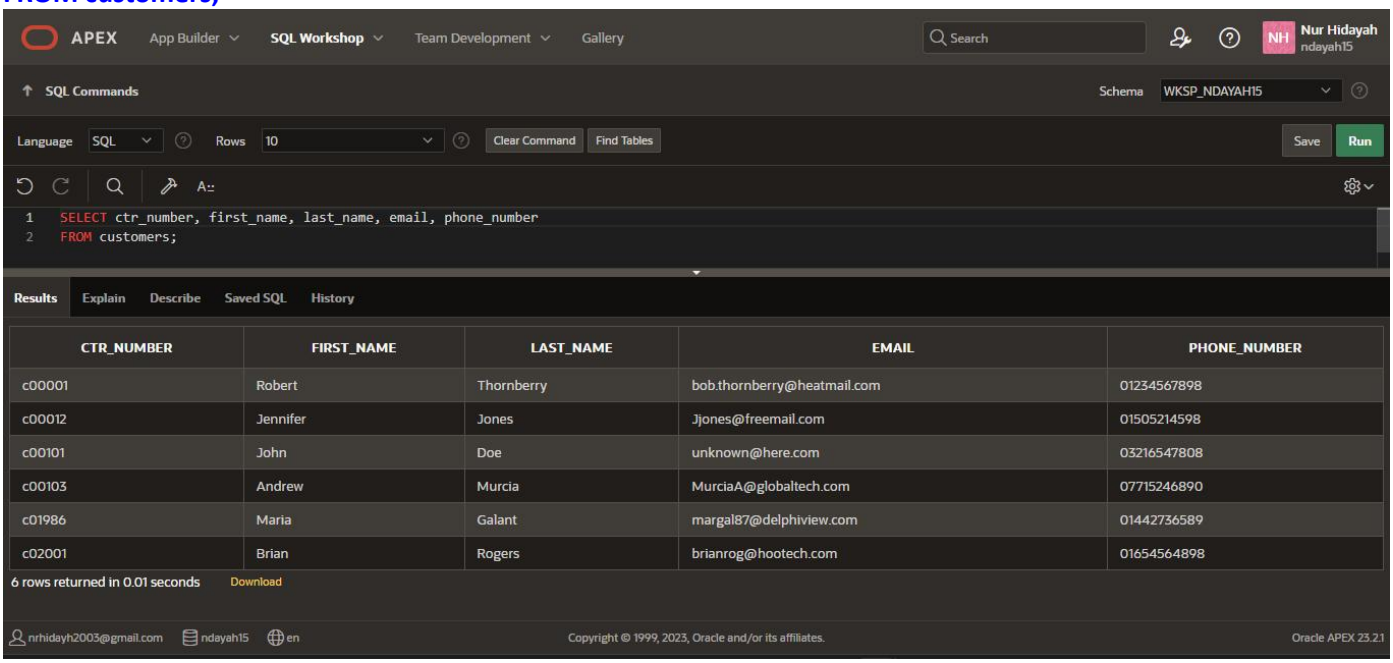
```
SELECT*
FROM items;
```



Part 2: Selecting Specific Columns

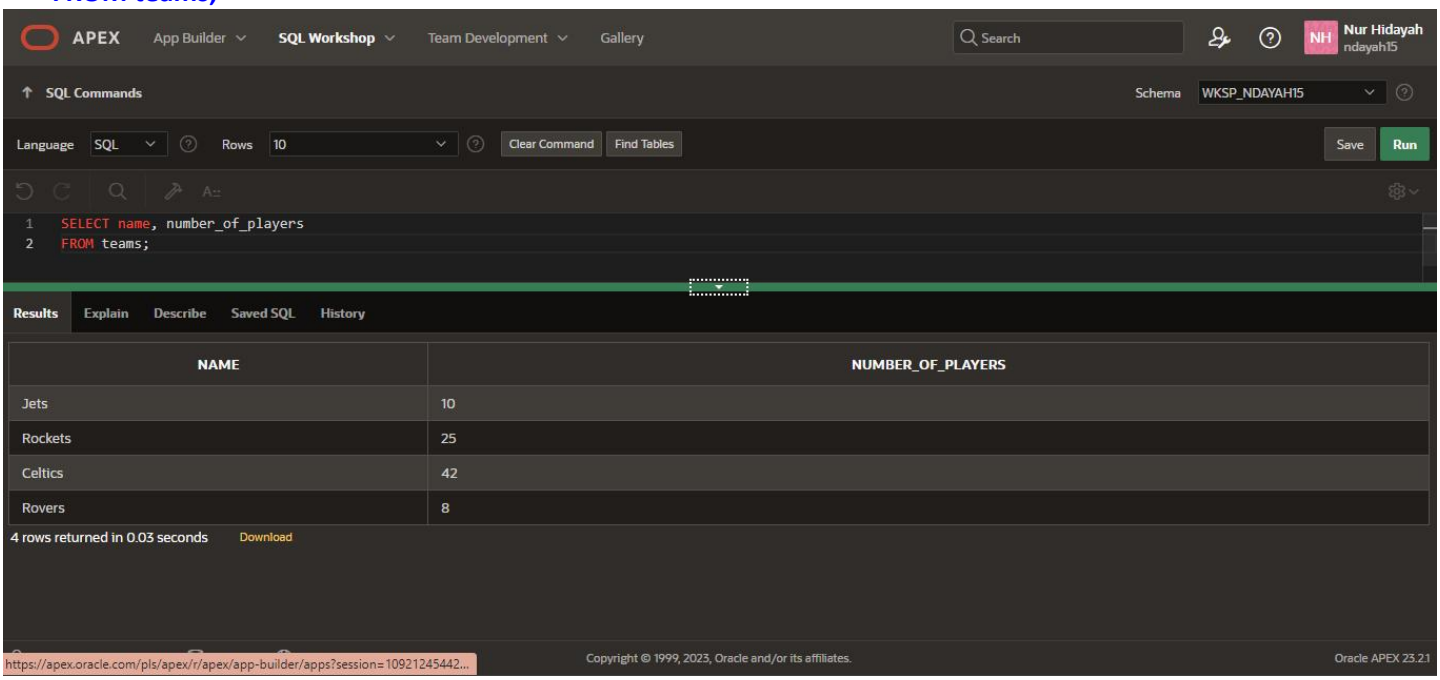
1. Display the customer number, first name, last name, email and phone number of the customers.

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



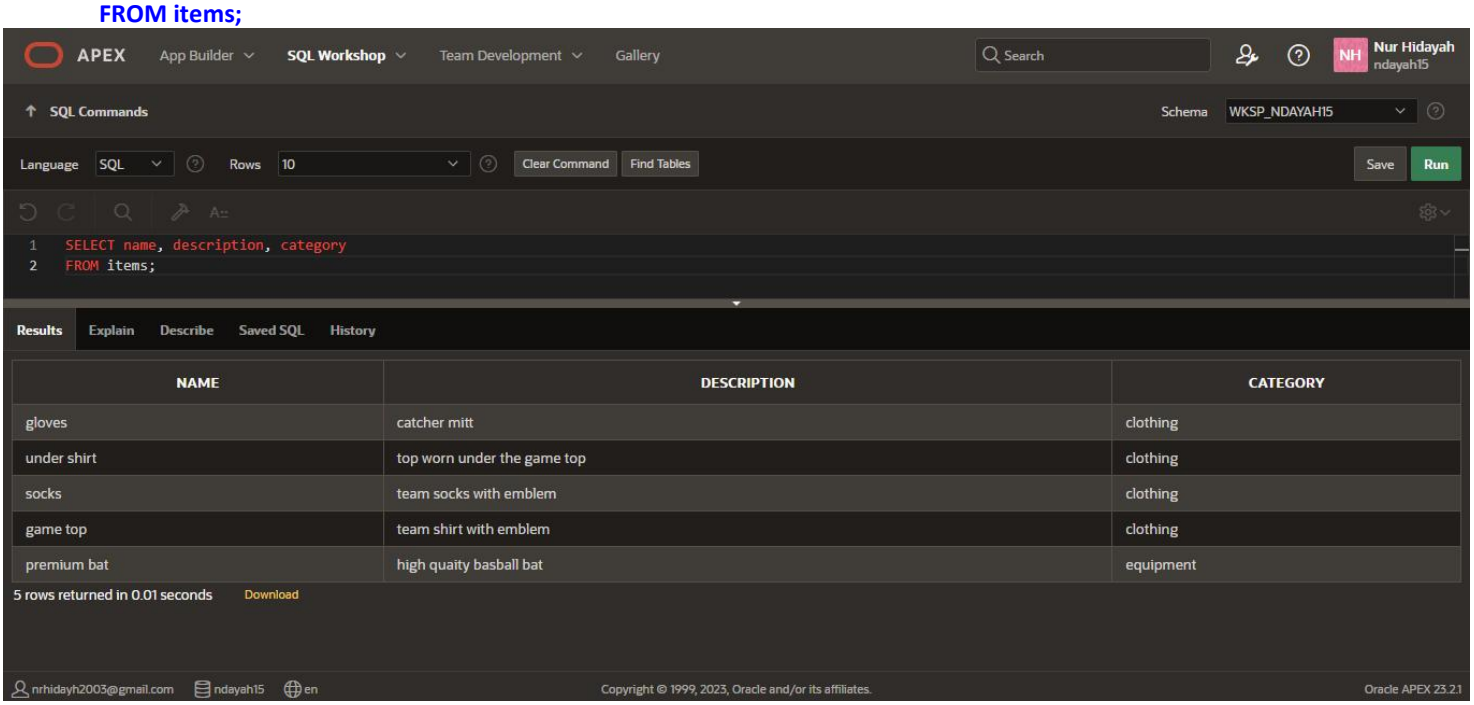
2. Display the name and number of players for each team.

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



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

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



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Section 6 Lesson 6 Exercise 2: Retrieving Data Using SELECT

Write and Execute SELECT statements (S6L6 Objective 2)

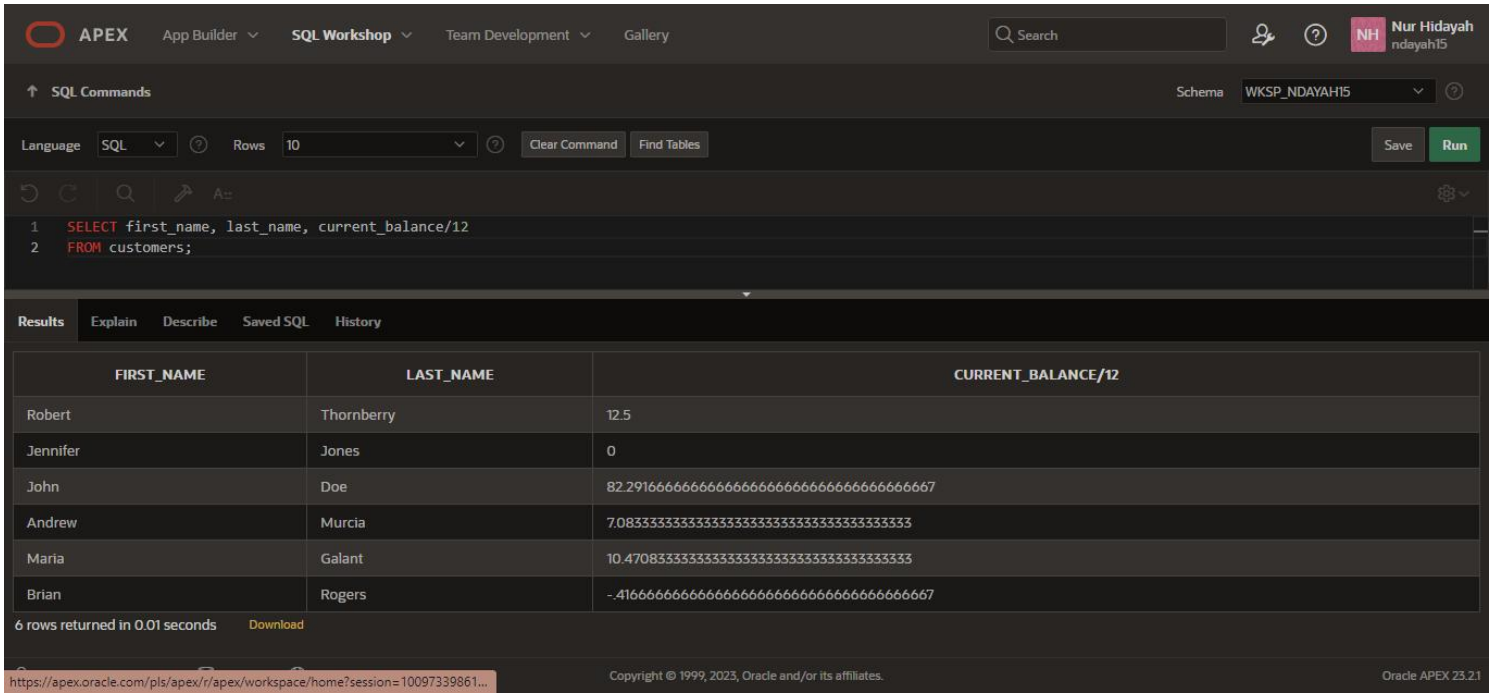
In this exercise you will retrieve data that is stored in the database system by using a SELECT statement.

Part 1: Using Arithmetic Operators

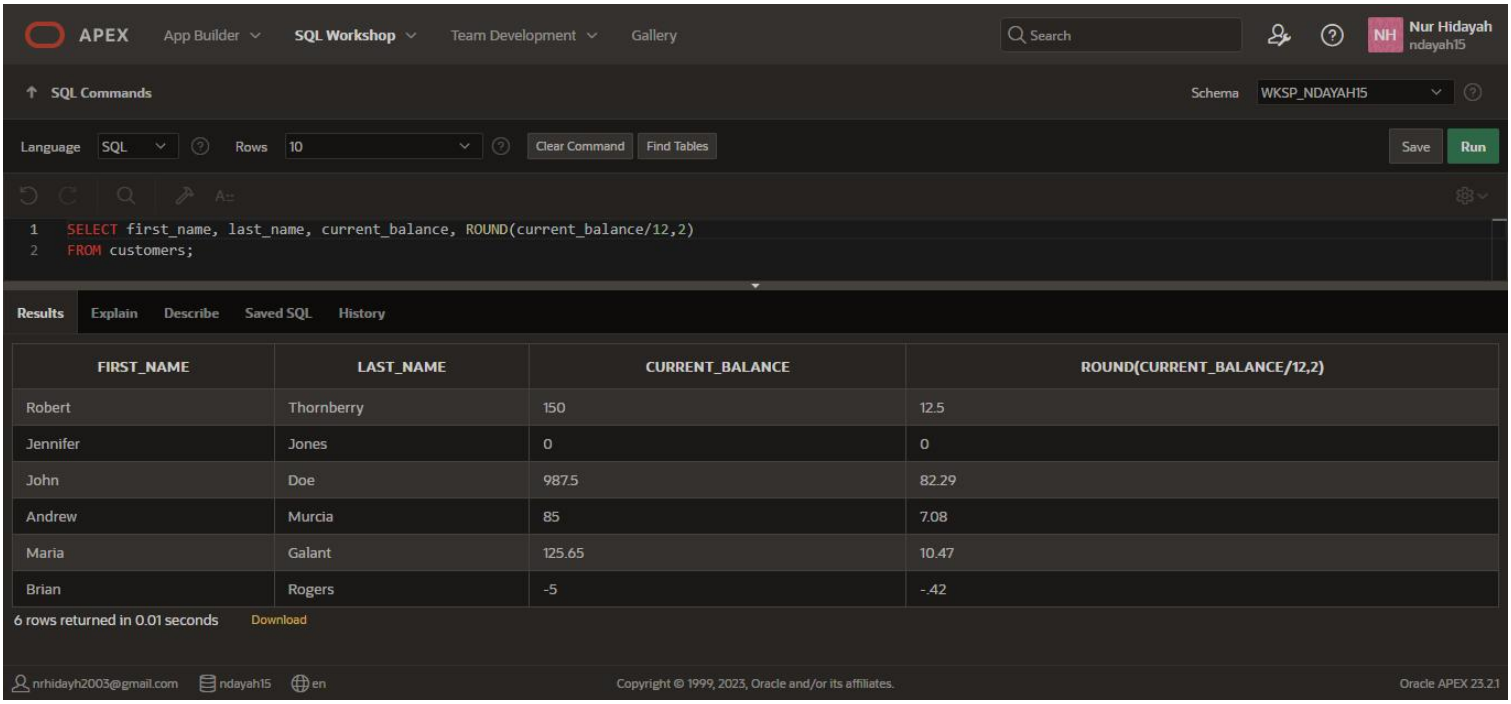
1. Every customer has been told they can pay off their current balance over a 12 month period. Display the customer's first name, last name, current balance and monthly payment.

   SELECT first_name, last_name, current_balance/12

   FROM customers;



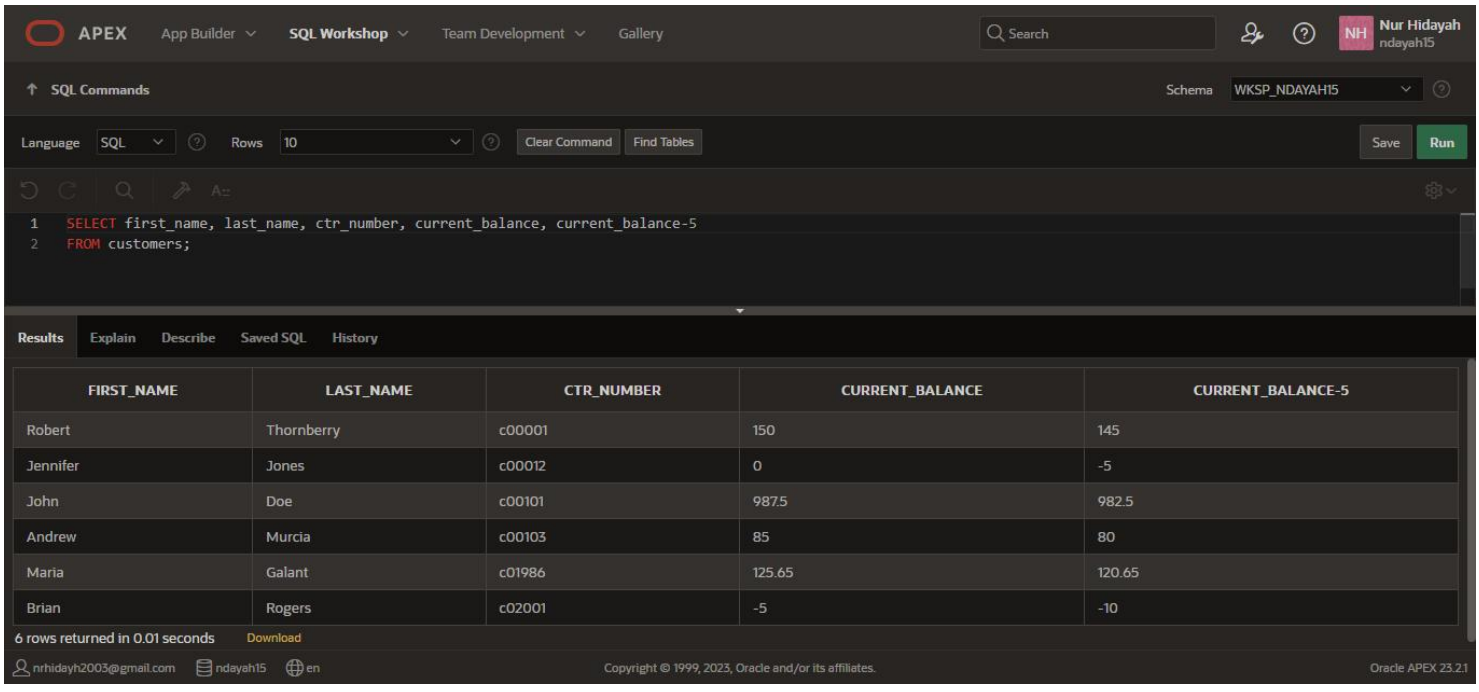
   SELECT first_name, last_name, current_balance, ROUND(current_balance/12,2)
   FROM customers;



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;

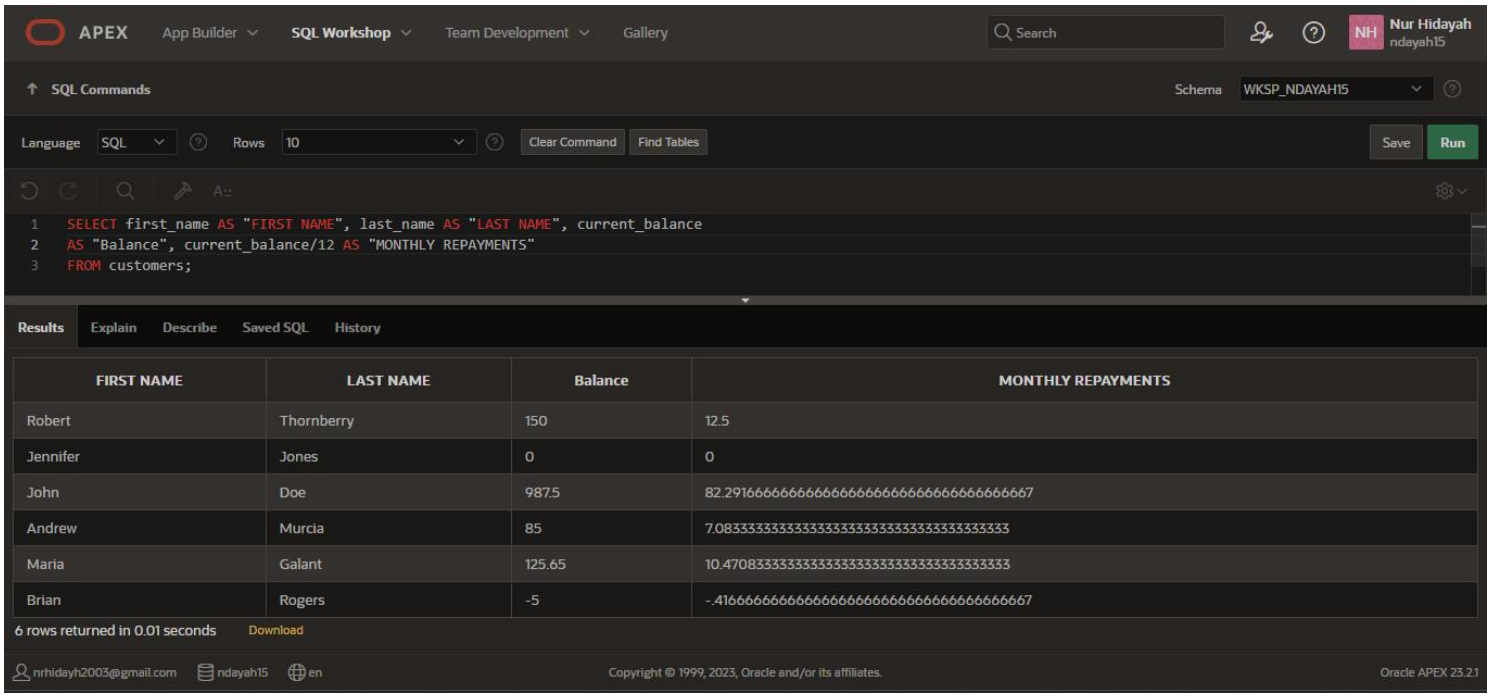


3. What would be the problem with implementing this scheme?
   A negative number would be obtained by removing 5 if the current balance is already less than 5.Perhaps we could include a tick to make sure the current balance never drops below zero.

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).

   SELECT first_name AS "FIRST NAME", last_name AS "LAST NAME", current_balance
   AS "Balance", current_balance/12 AS "MONTHLY REPAYMENTS"
   FROM customers;



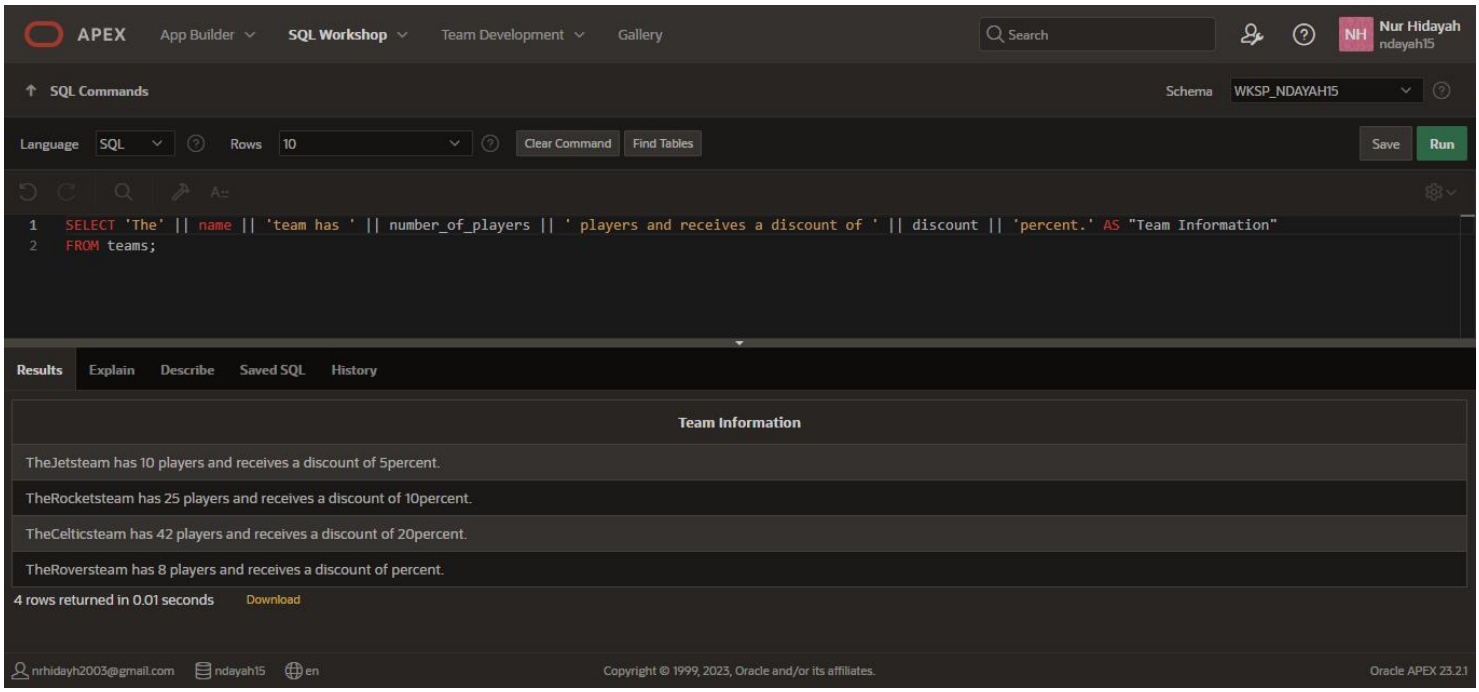
Part 3: Using Literal Character Strings

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"



2. Why does the last team not show a discount?
   The value is null and not equal to zero.

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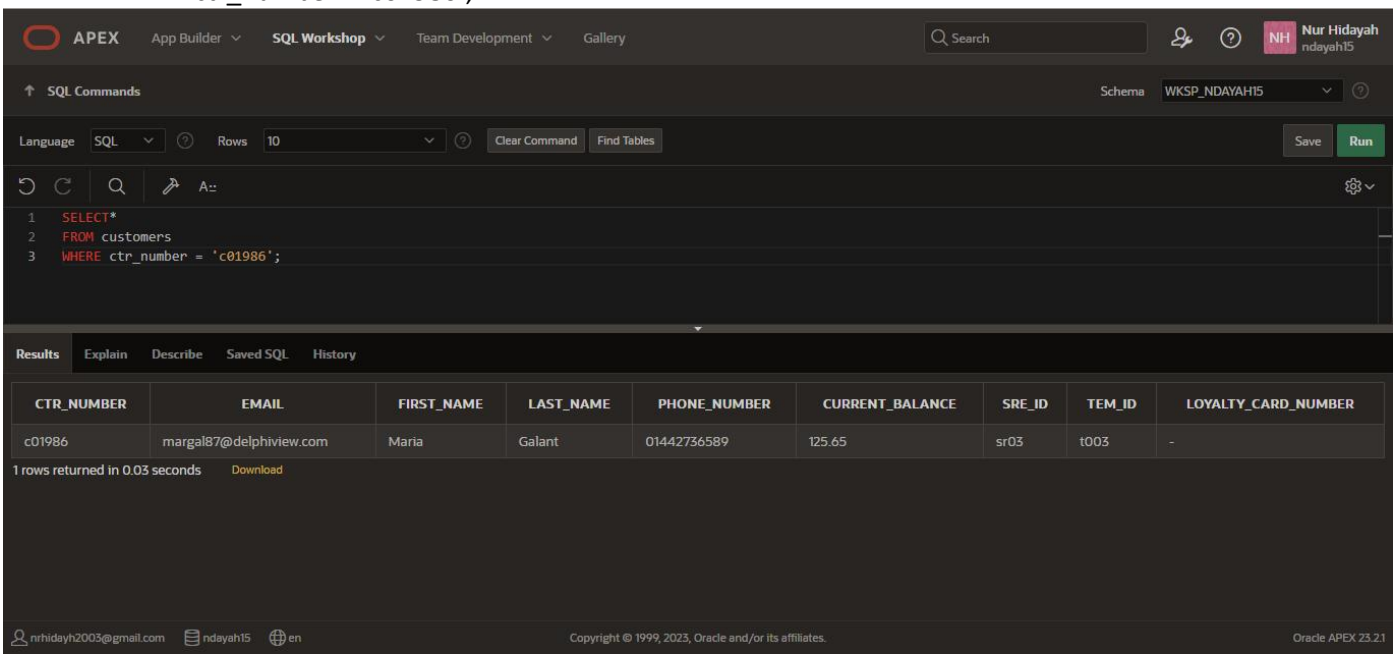
Section 6 Lesson 7 Exercise 1: Restricting Data Using WHERE

Limit rows using WHERE (S6L7 Objective 1)

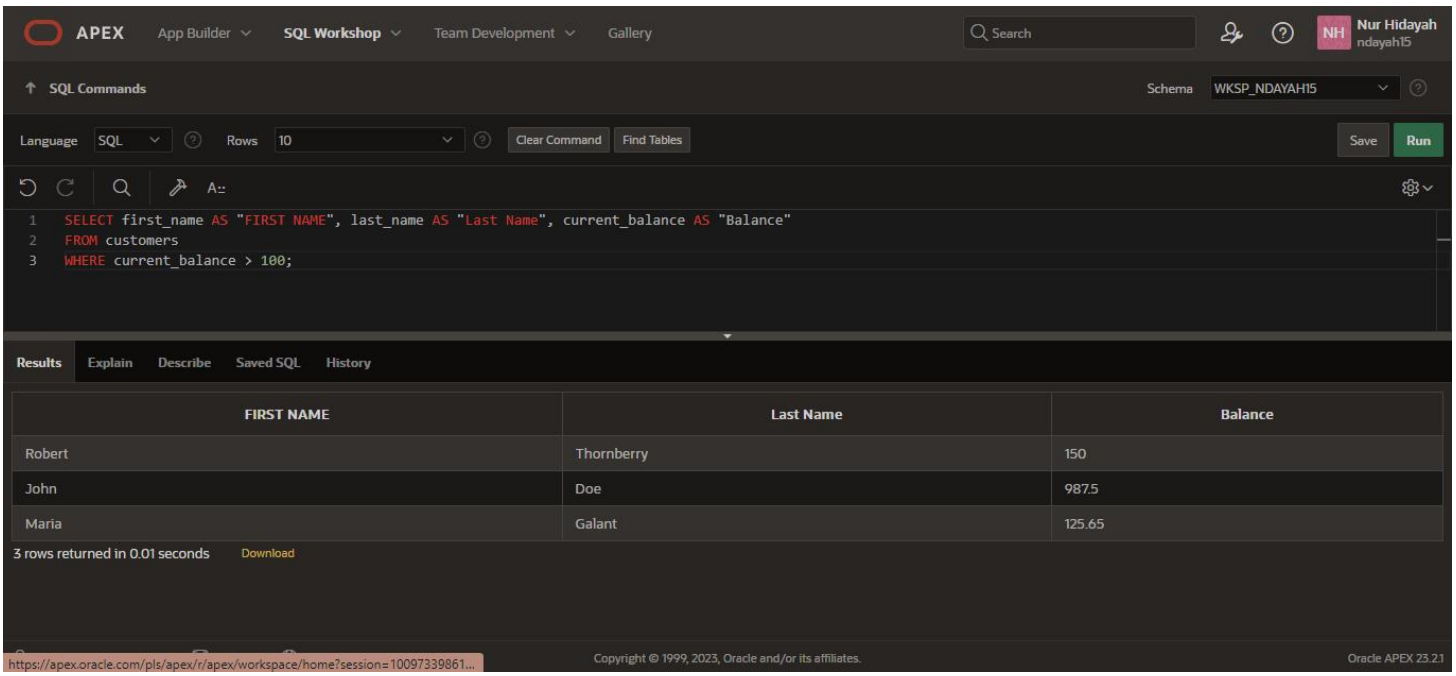
In this exercise you will refine the data that is returned in your query by adding a WHERE clause to your SELECT statement.

Part 1: Using the WHERE Clause.

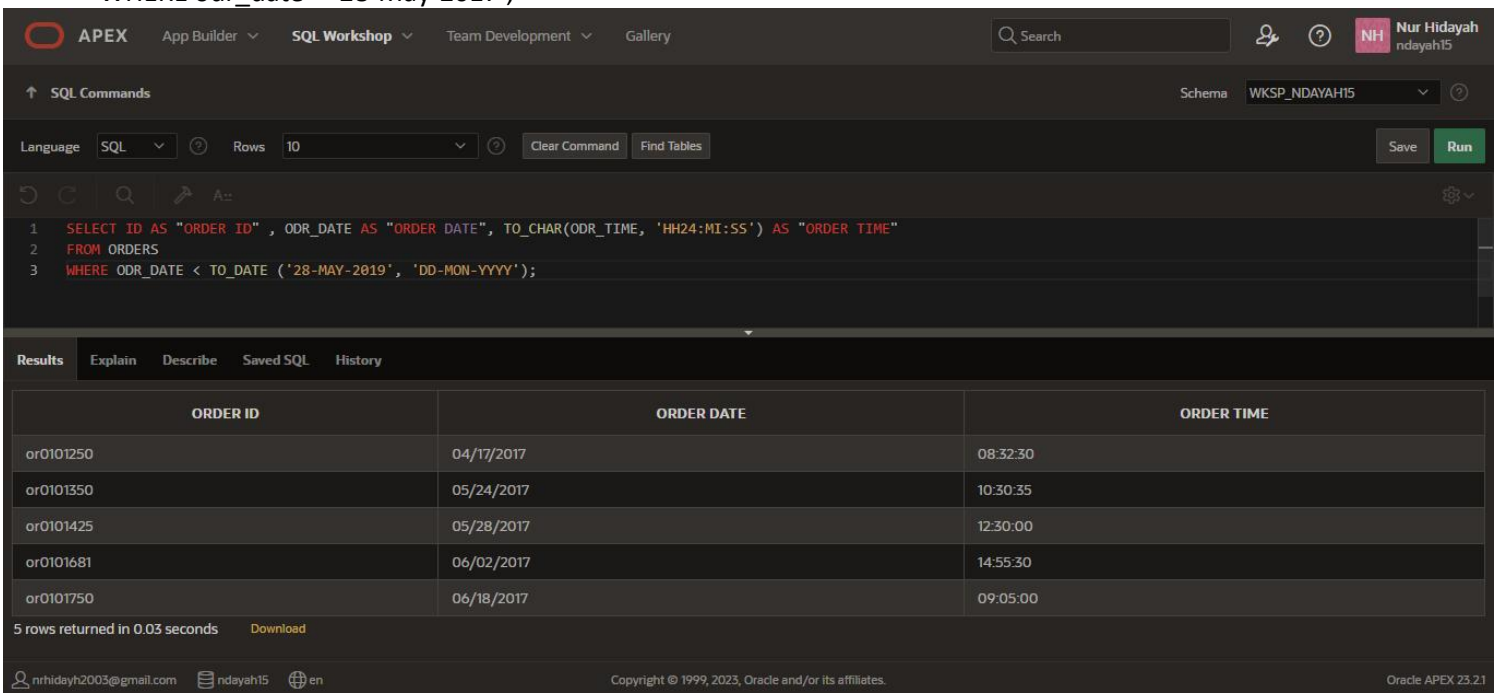
1. Using the unique customer number in the where clause display all columns for Maria Galant.
   SELECT*
   FROM customers
   WHERE ctr_number = ‘c01986’;



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;



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 < ‘28-May-2017’;



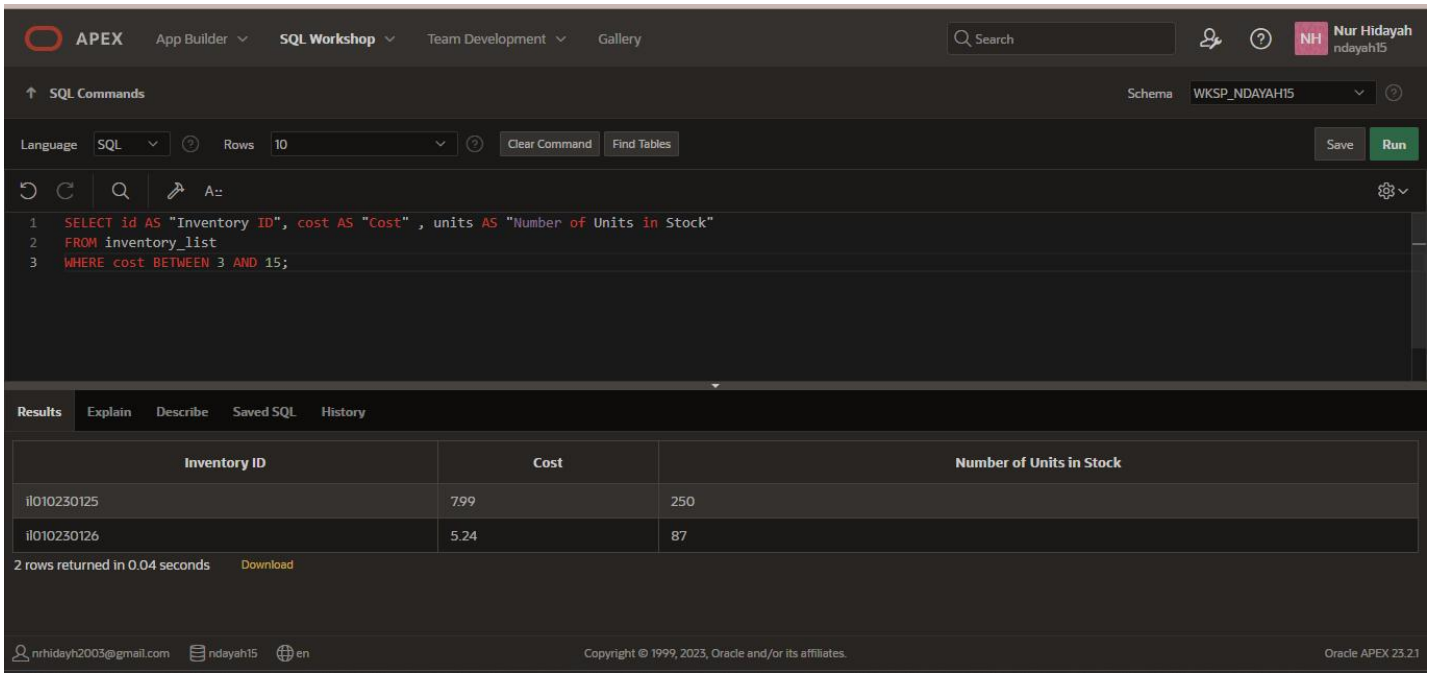
Part 2: Range Conditions: BETWEEN Operator

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”

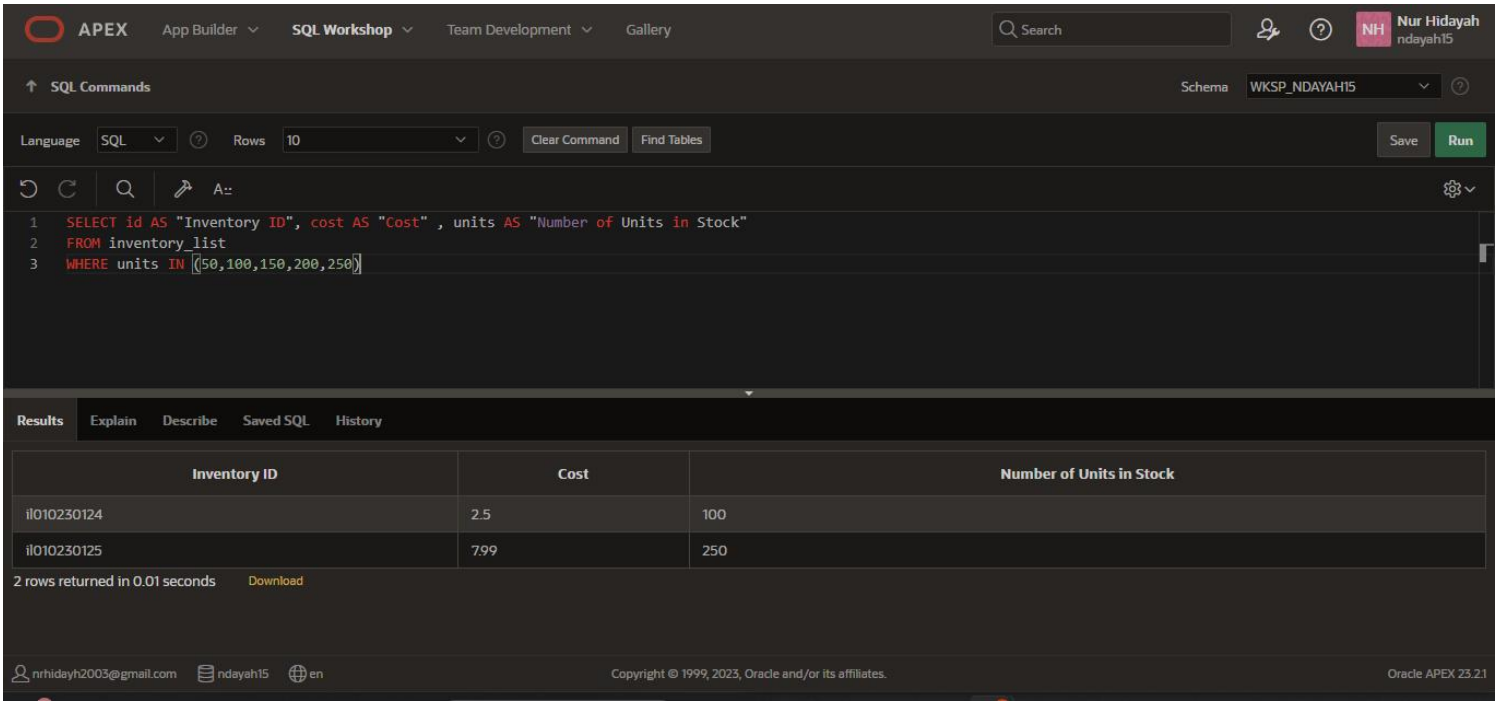
   FROM inventory_list

   WHERE cost BETWEEN 3 AND 15;



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);



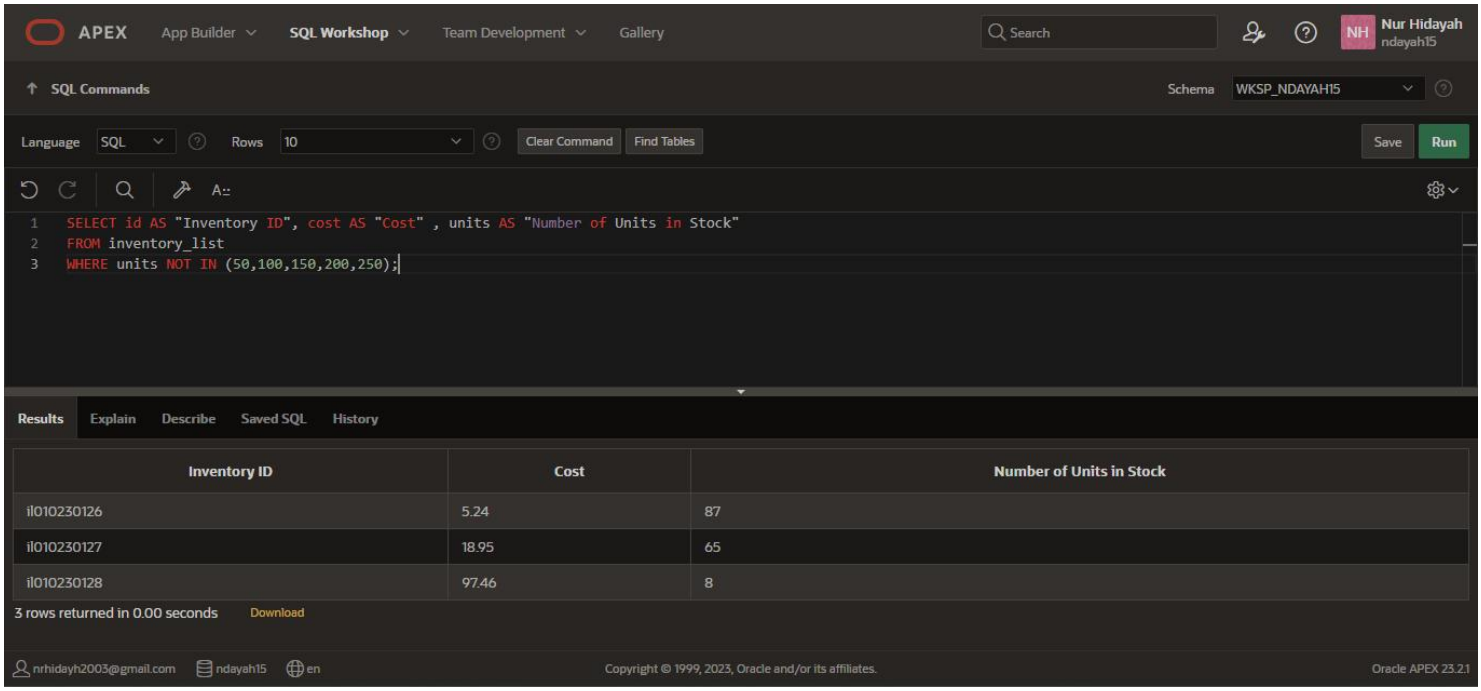
Part 4: Membership Conditions: NOT IN Operator

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);



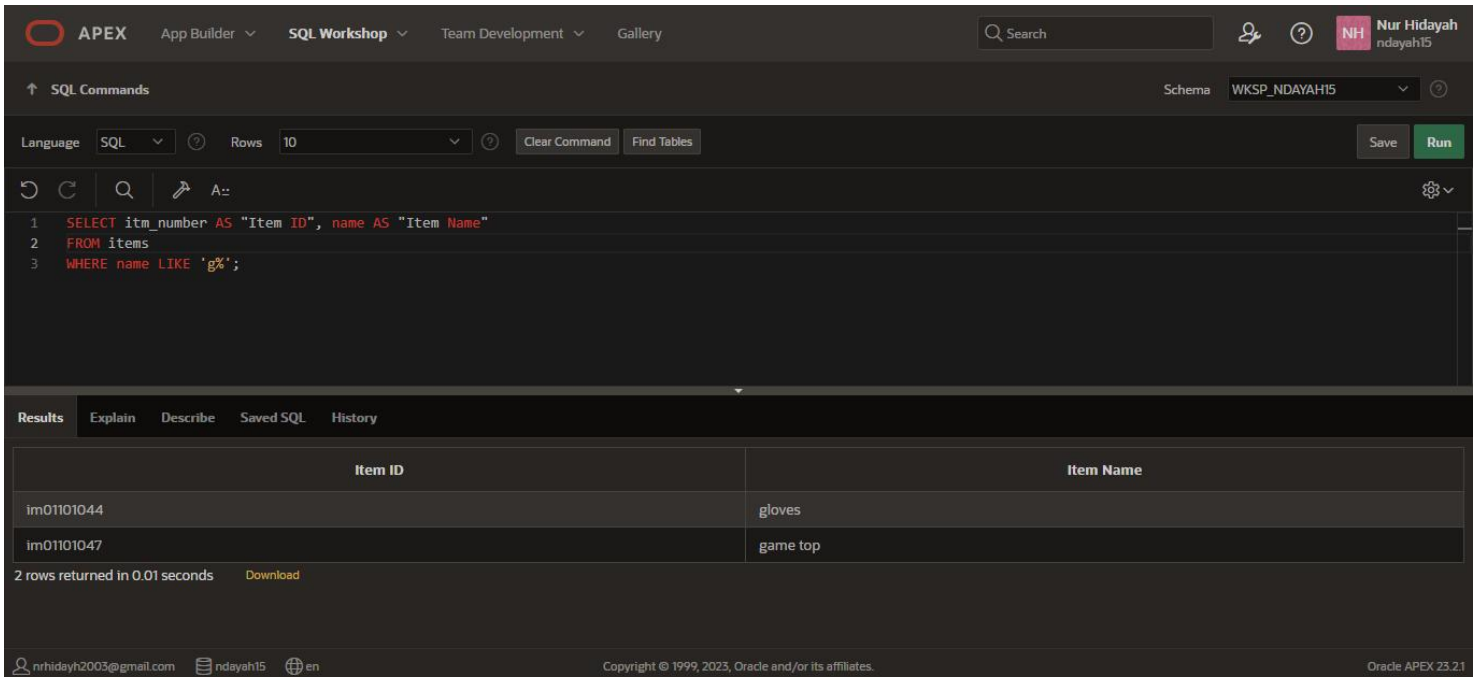
Part 5: Pattern Matching: LIKE Operator

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%’;



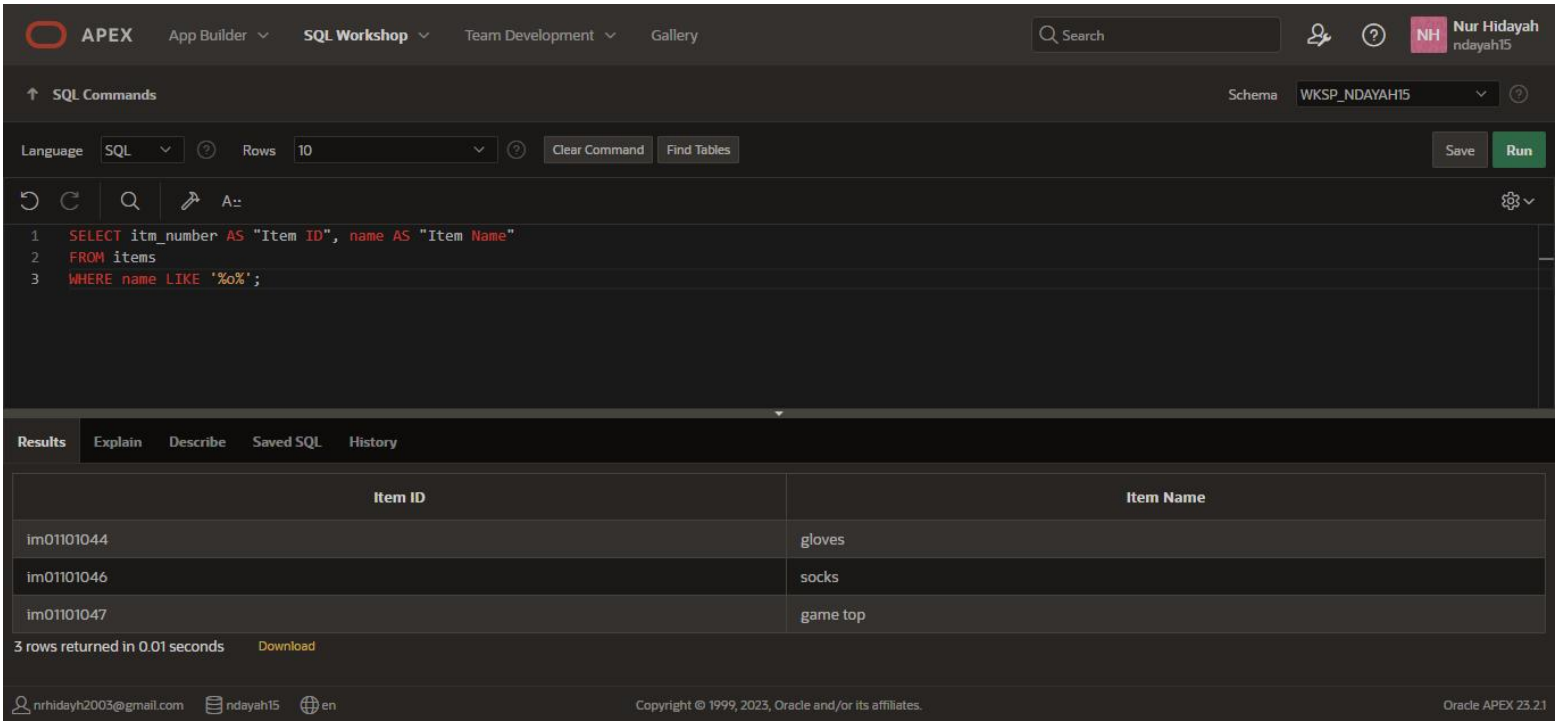
Part 6 : Pattern Matching: Combining Wildcard Characters with the LIKE Operator

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 itm_number AS “Item ID”, name AS “Item Name”

FROM items

WHERE name LIKE ‘%o%’;



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Section 6 Lesson 7 Exercise 2: Restricting Data Using WHERE

Limit rows using WHERE (S6L7 Objective 1)

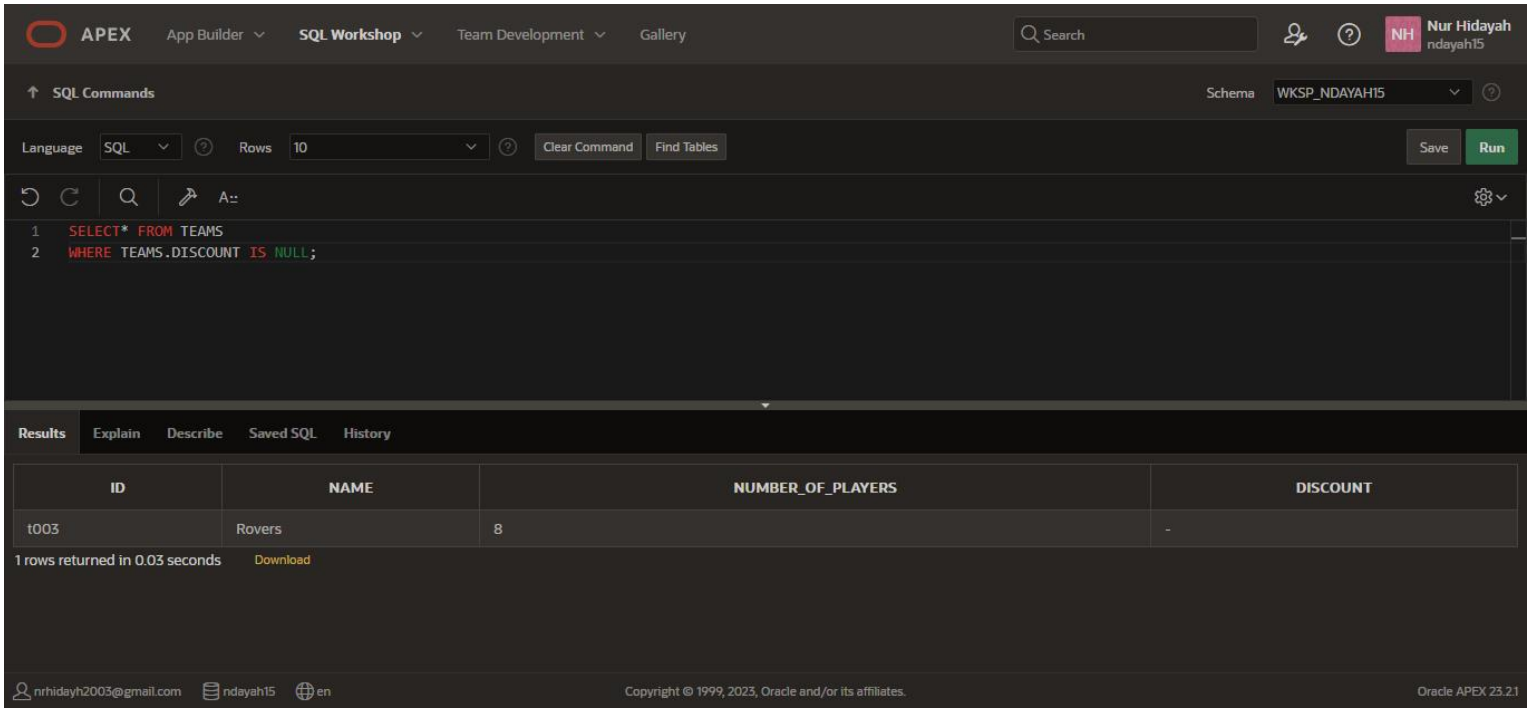
In this exercise you will refine the data that is returned in your query by adding a WHERE clause to your SELECT statement.

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.

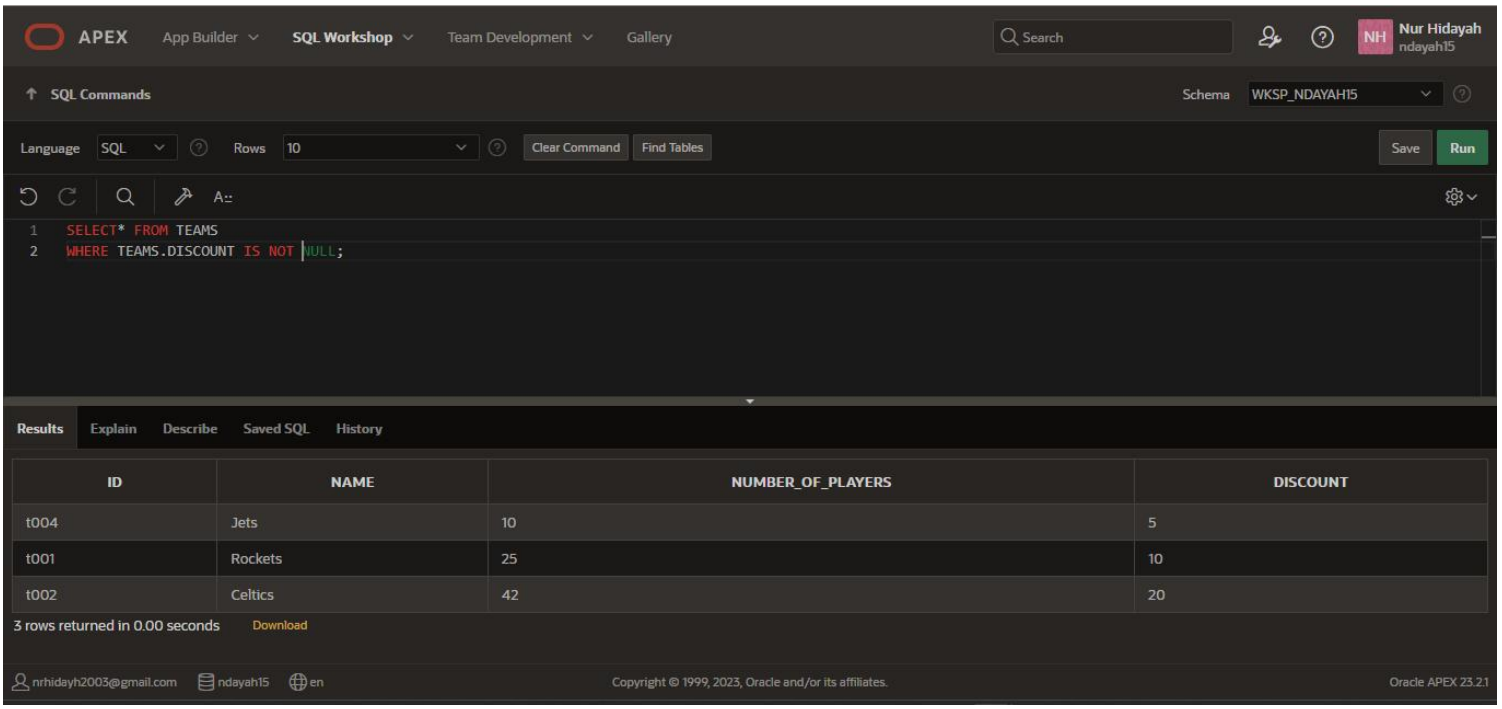
   Use **Team Information** as the column alias.



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

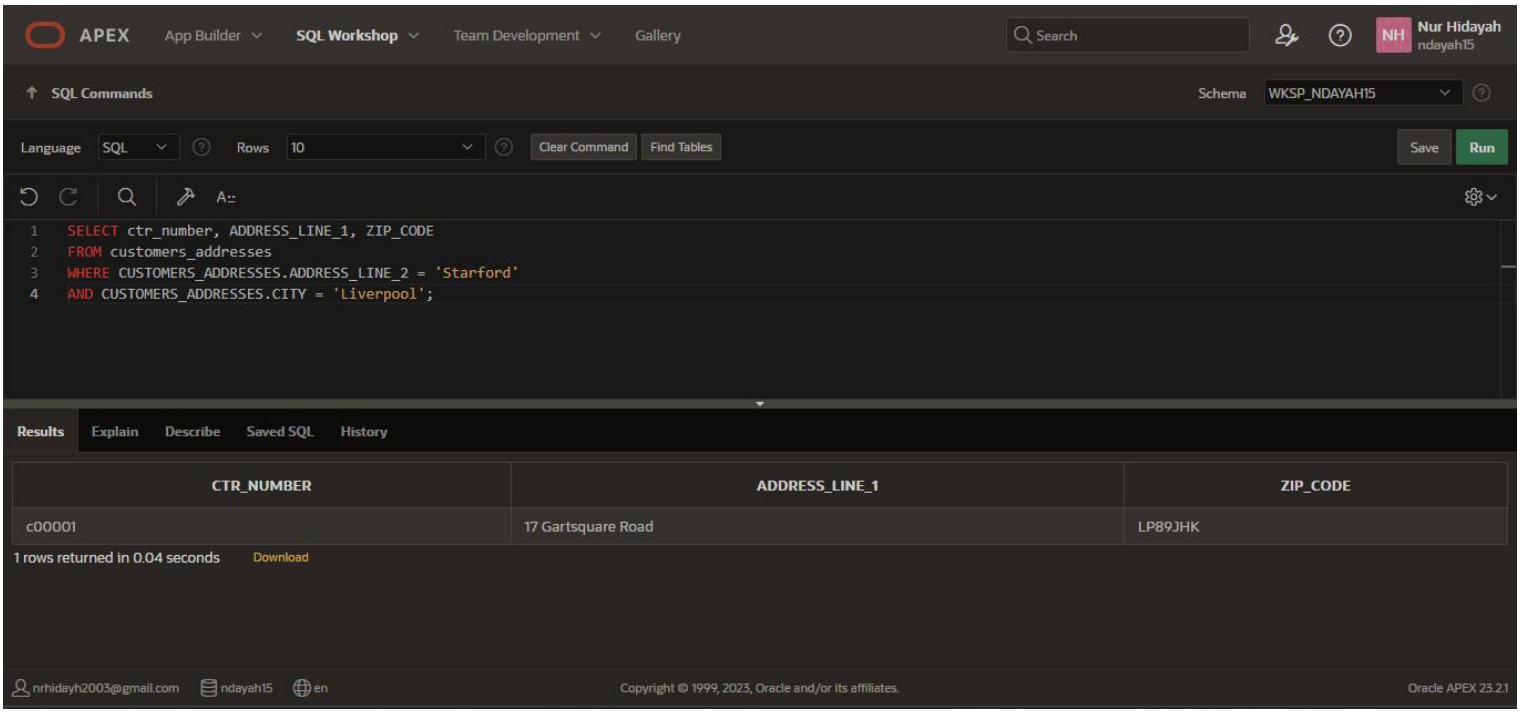
   The Rockets team has 25 players and receives a discount of 10 percent.

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



Part 2: Logical Operators: AND

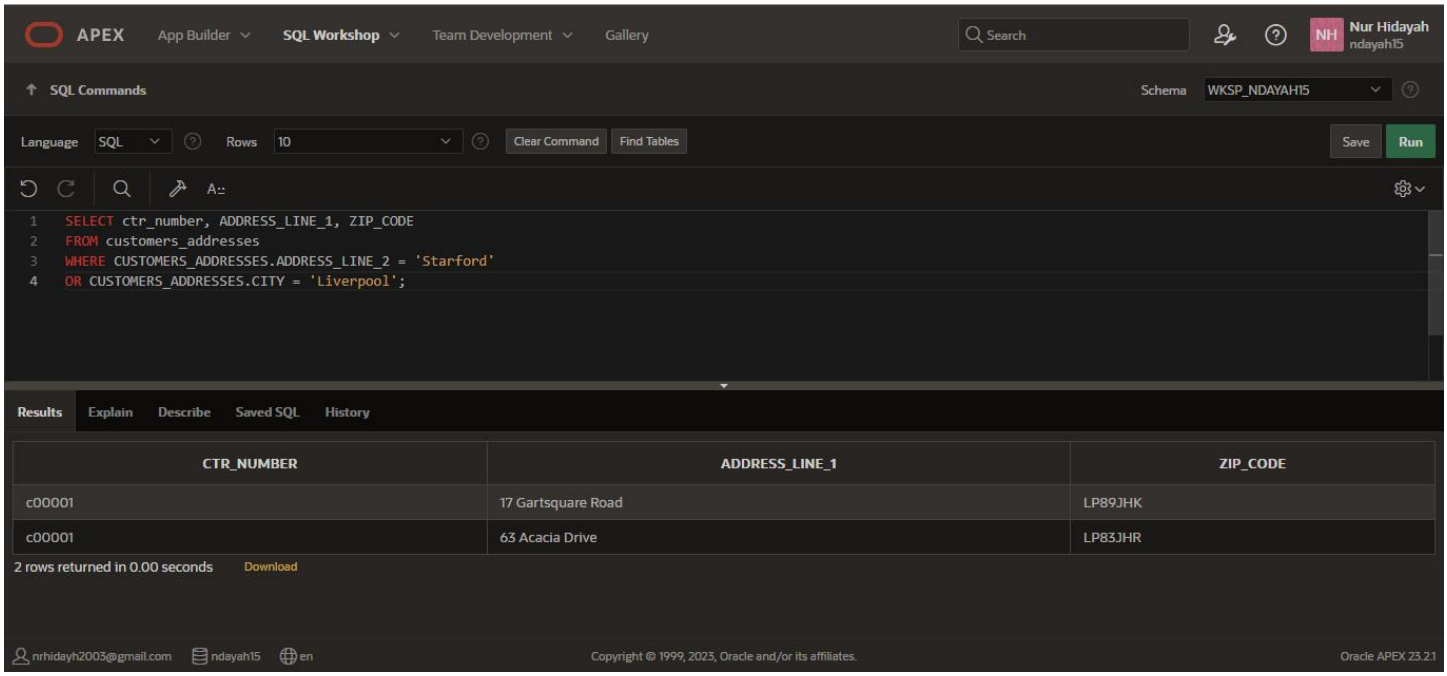
1. Write a query that will display the customer number, address line 1 and postal code for customers that live in the starford area of Liverpool. Use Customer Number, Street Address and Postal Code as the column aliases.



Part 3: Logical Operators: OR

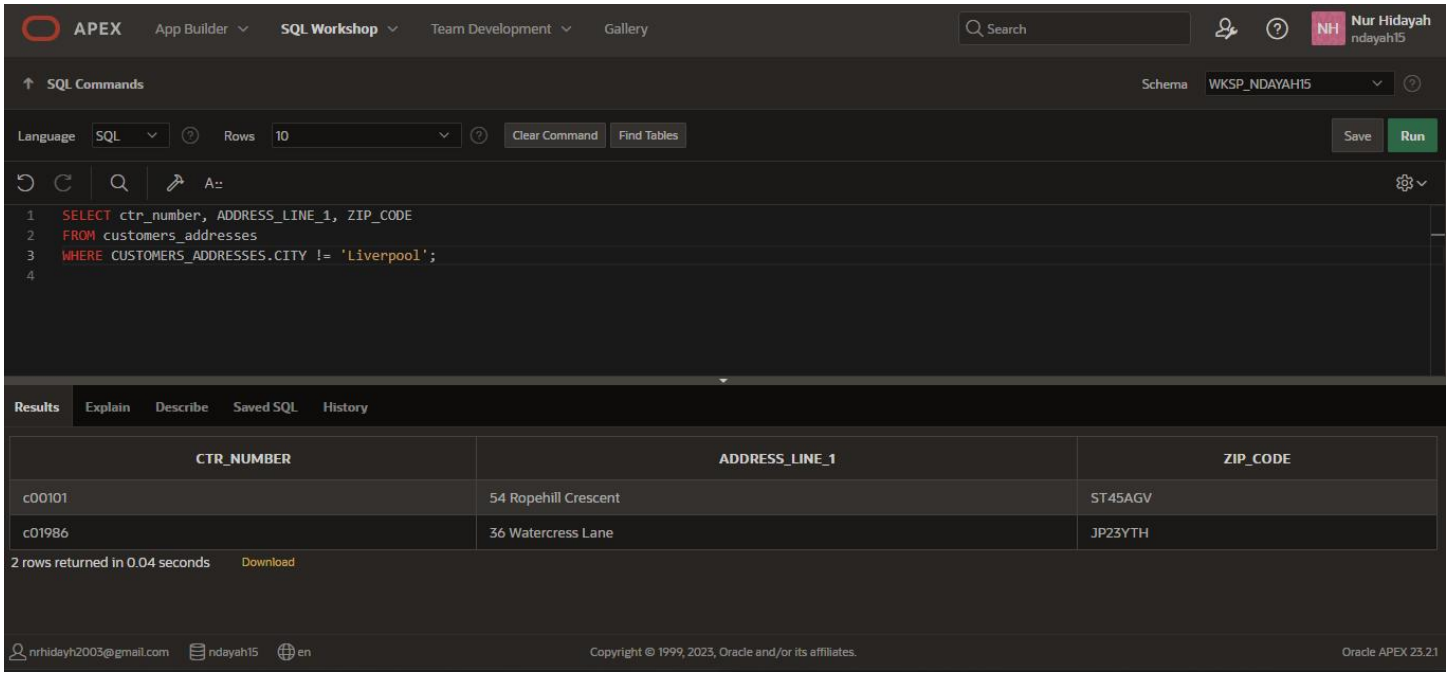
1. Write a query that will display the customer number, address line 1 and postal code for customers that live in

either starford or Liverpool in general. Use Customer Number, Street Address and Postal Code as the column aliases.



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.



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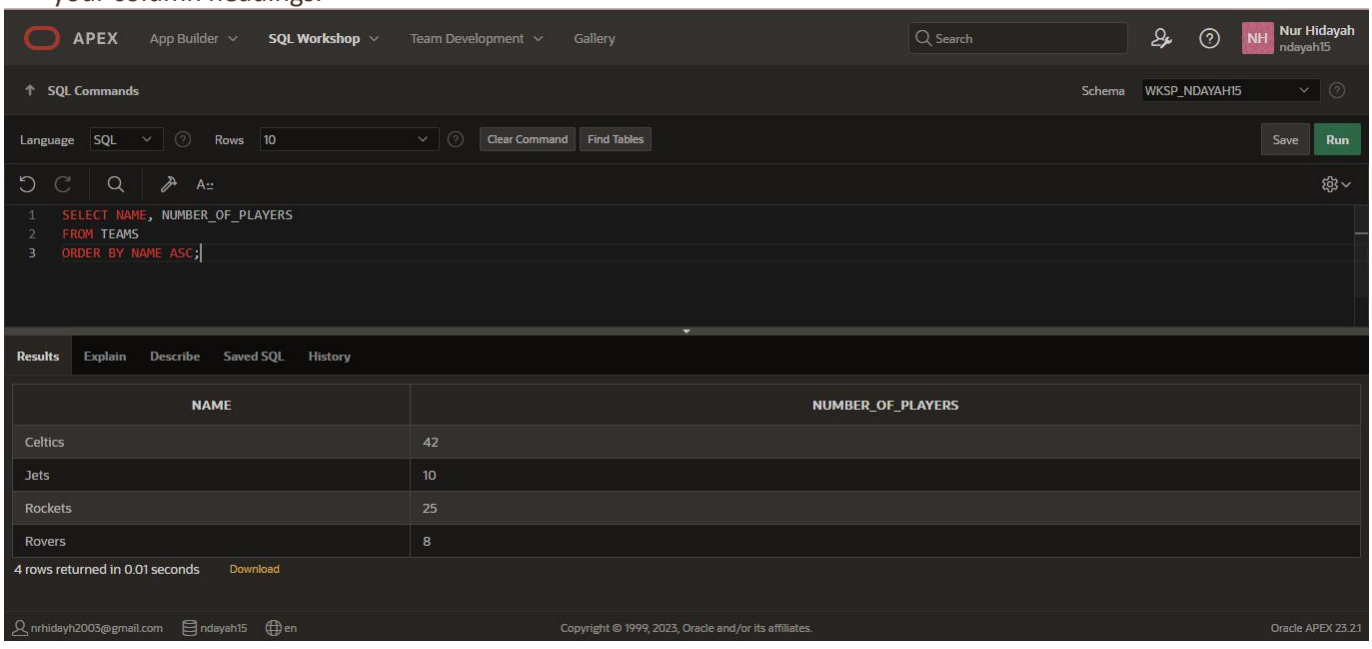
Section 6 Lesson 8 Exercise 1: Sorting Data Using ORDER BY

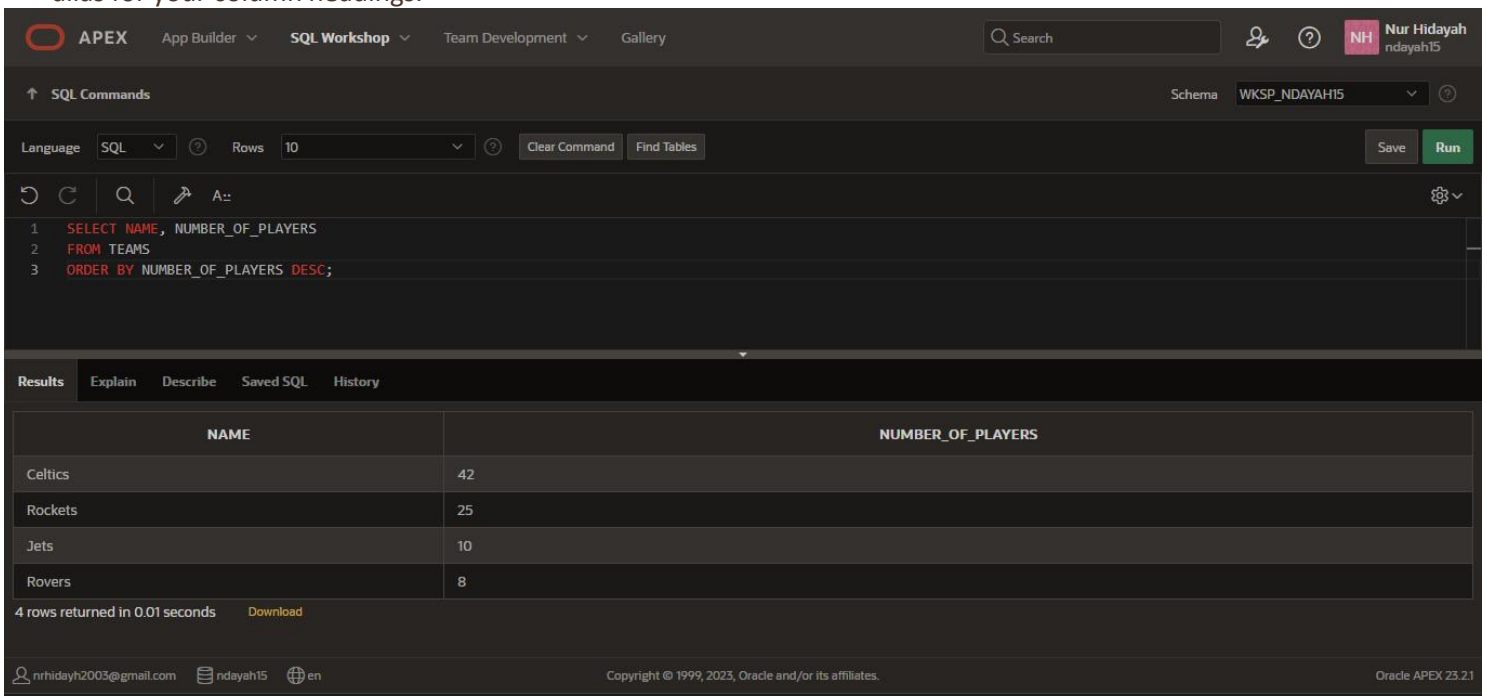
Use the ORDER BY Clause to Sort SQL Results (S6L8 Objective 1)

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.

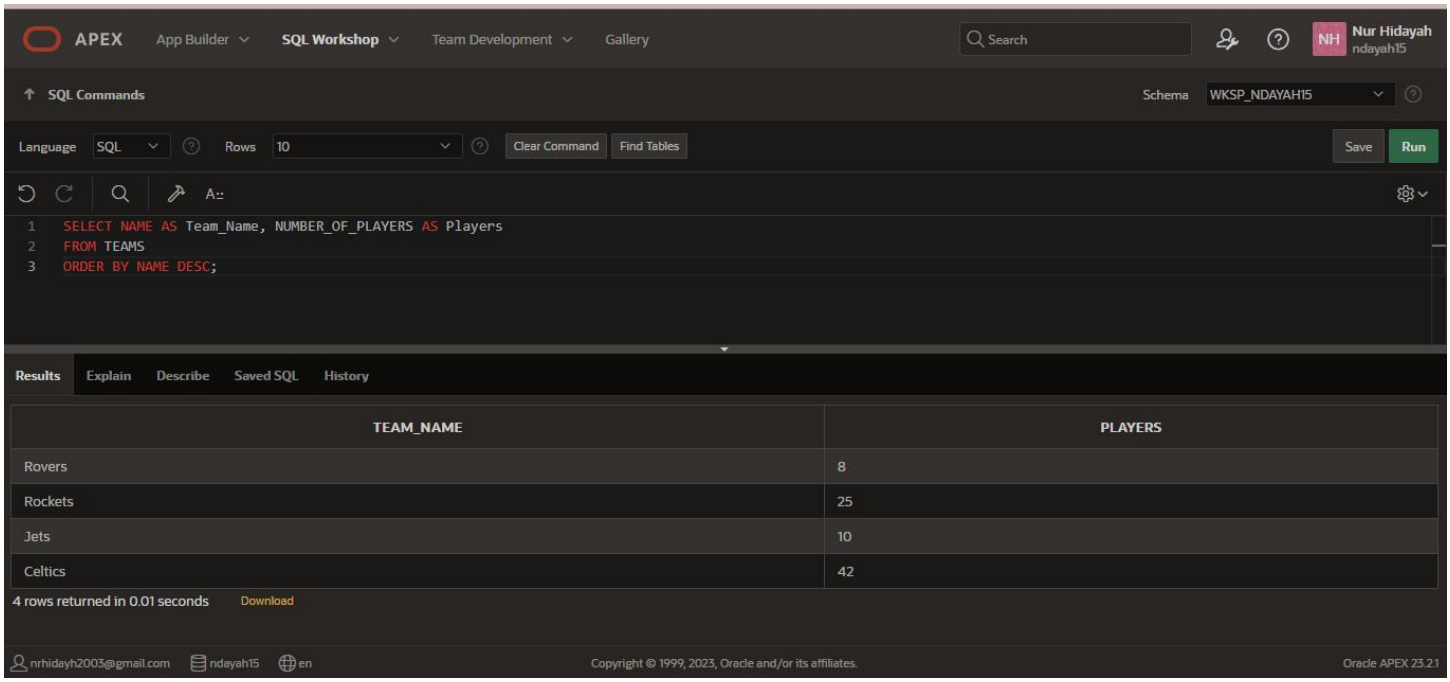
1. Display the team name and number of players alphabetically in order of team name. Use an appropriate alias for your column headings.



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



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.



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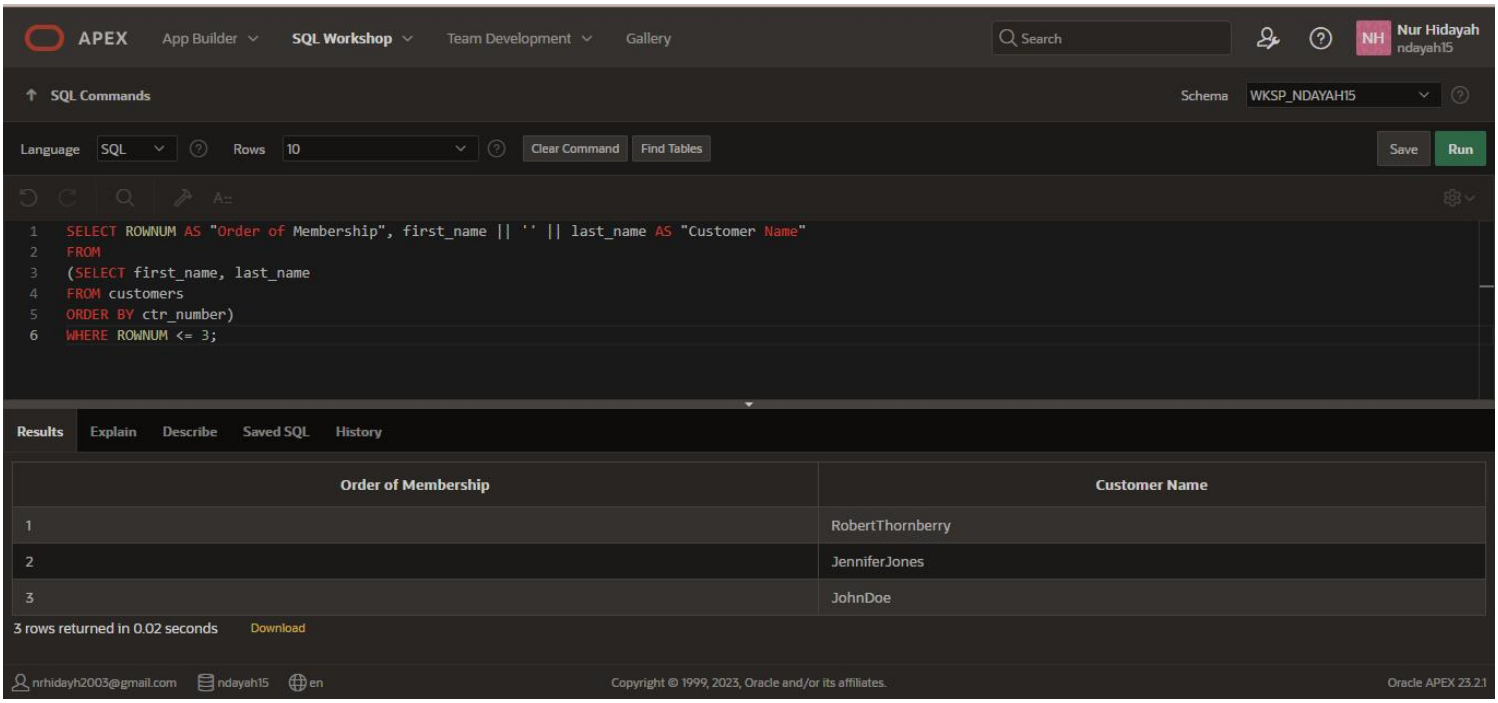
Section 6 Lesson 8 Exercise 2: Sorting Data Using ORDER BY

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;
```



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 commision_rate = commission_rate
   ORDER BY last_rate;