Lab 3: SQL 3 – Data Manipulation Language 2

SECD2523 - Database

Universiti Teknologi Malaysia

Objective:

1. To retrieve data that is stored in the database system by using a SELECT method

2. To refine the data that is returned to query by adding a WHERE clause to the SELECT statement.

3. To sort the order of the data that is returned to the query by adding an ORDER BY clause to the end of the SELECT statement.

Reference material: Computer Networking: A Top-Down Approach, 7th ed., J.F. Kurose and K.W. Ross.

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Section : 06

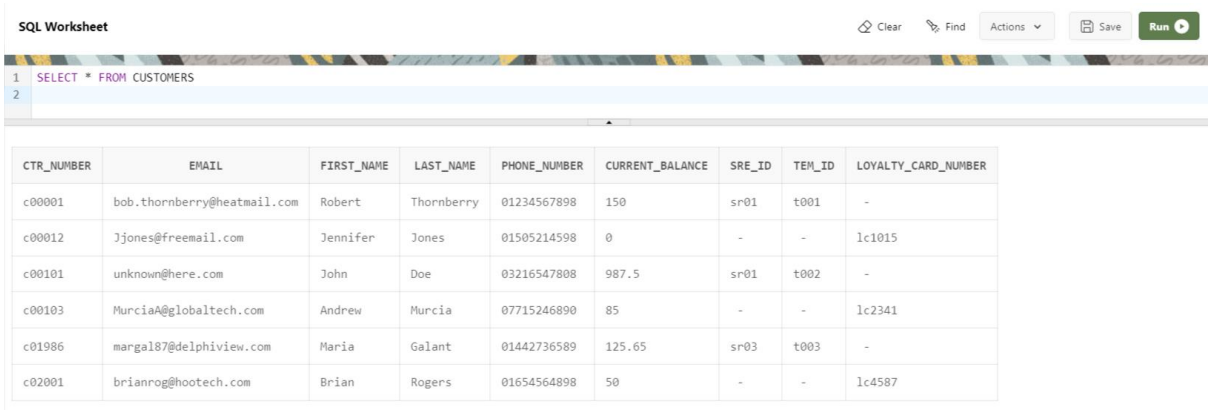
Mark

EXERCISE 1: Retrieving Data Using SELECT

Part 1: Retrieving all columns from a table

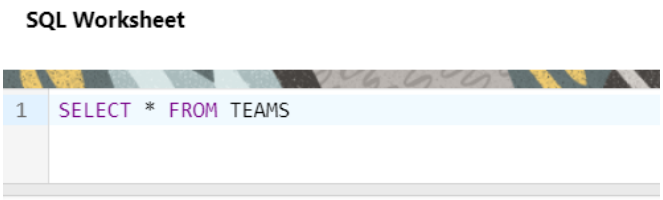
Using the SELECT * statement show all data stored in the following table

1. 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	50	-	-	lc4587

2. teams.



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

3. Items.

SQL Worksheet

```
1  SELECT * FROM ITEMS
```

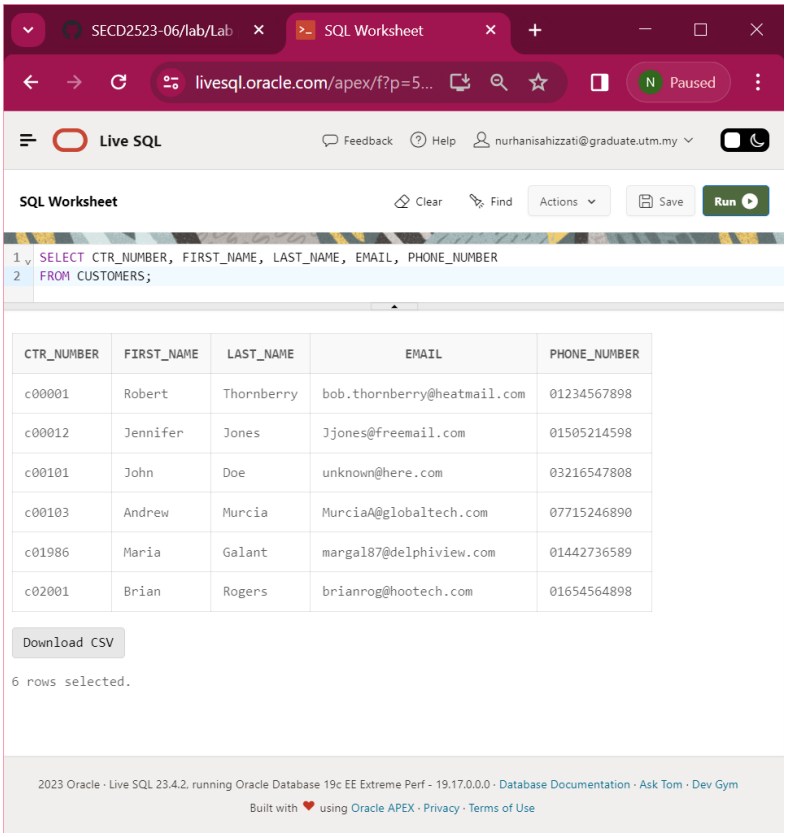
ITM_NUMBER	NAME	DESCRIPTION	CATEGORY	COLOR	Size	ILT_ID
im01101044	gloves	catcher mitt	clothing	brown	m	il010230124
im01101045	under shirt	top worn under the game top	clothing	white	s	il010230125
im01101046	socks	team socks with emblem	clothing	range	l	il010230126
im01101047	game top	team shirt with emblem	clothing	range	m	il010230127
im01101048	premium bat	high quaity basball bat	equipment	-	-	il010230128

Download CSV

5 rows selected.

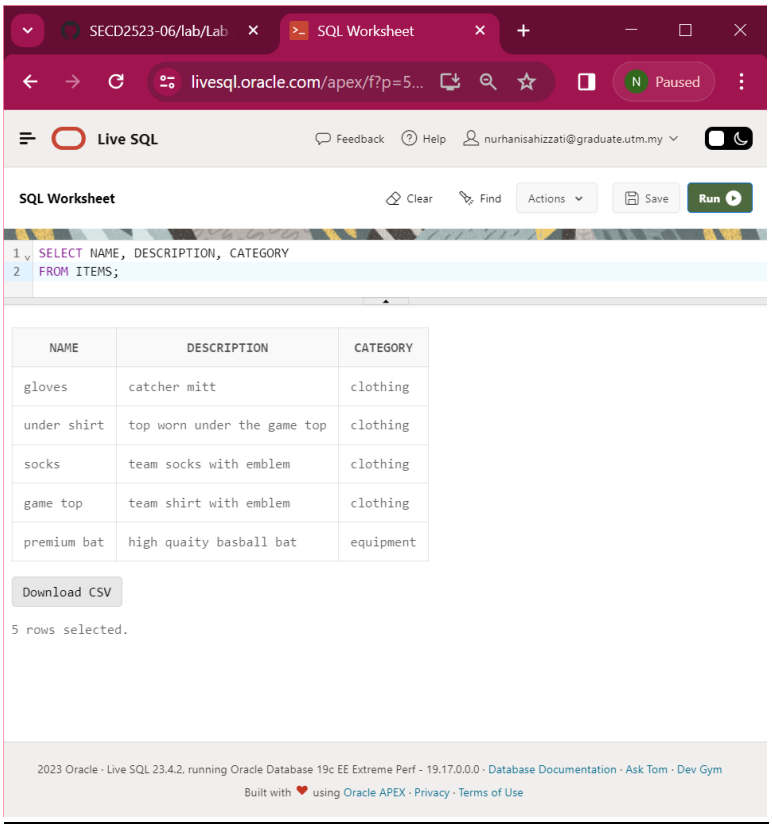
Part 2: Selecting Specific Columns

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



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

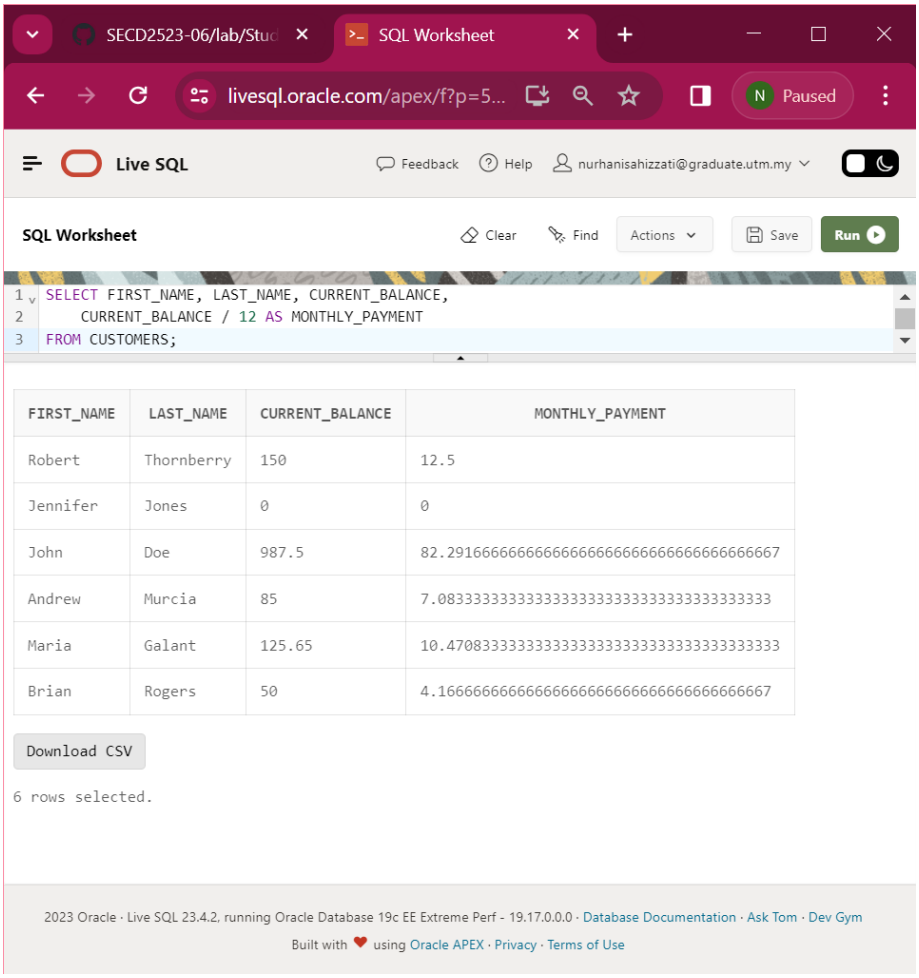
3. Display the name, description, and category for every item in the table.



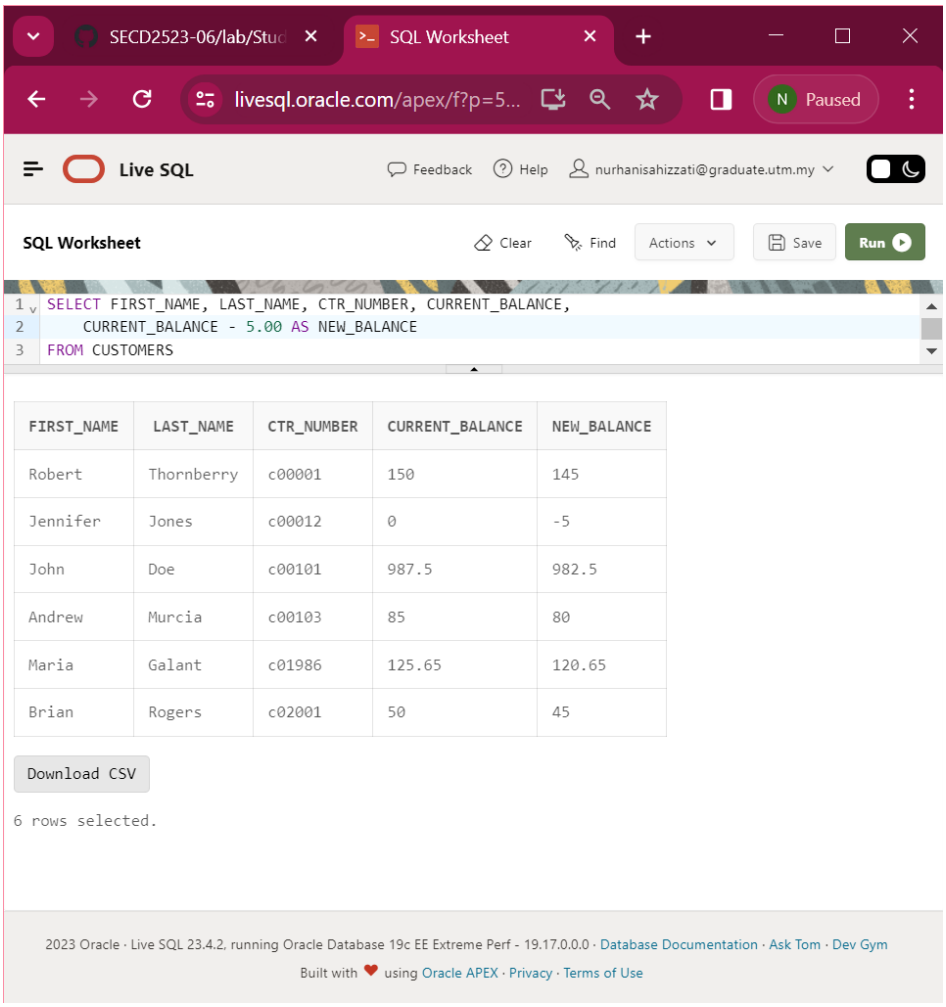
EXERCISE 2: Retrieving Data Using SELECT

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.



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.

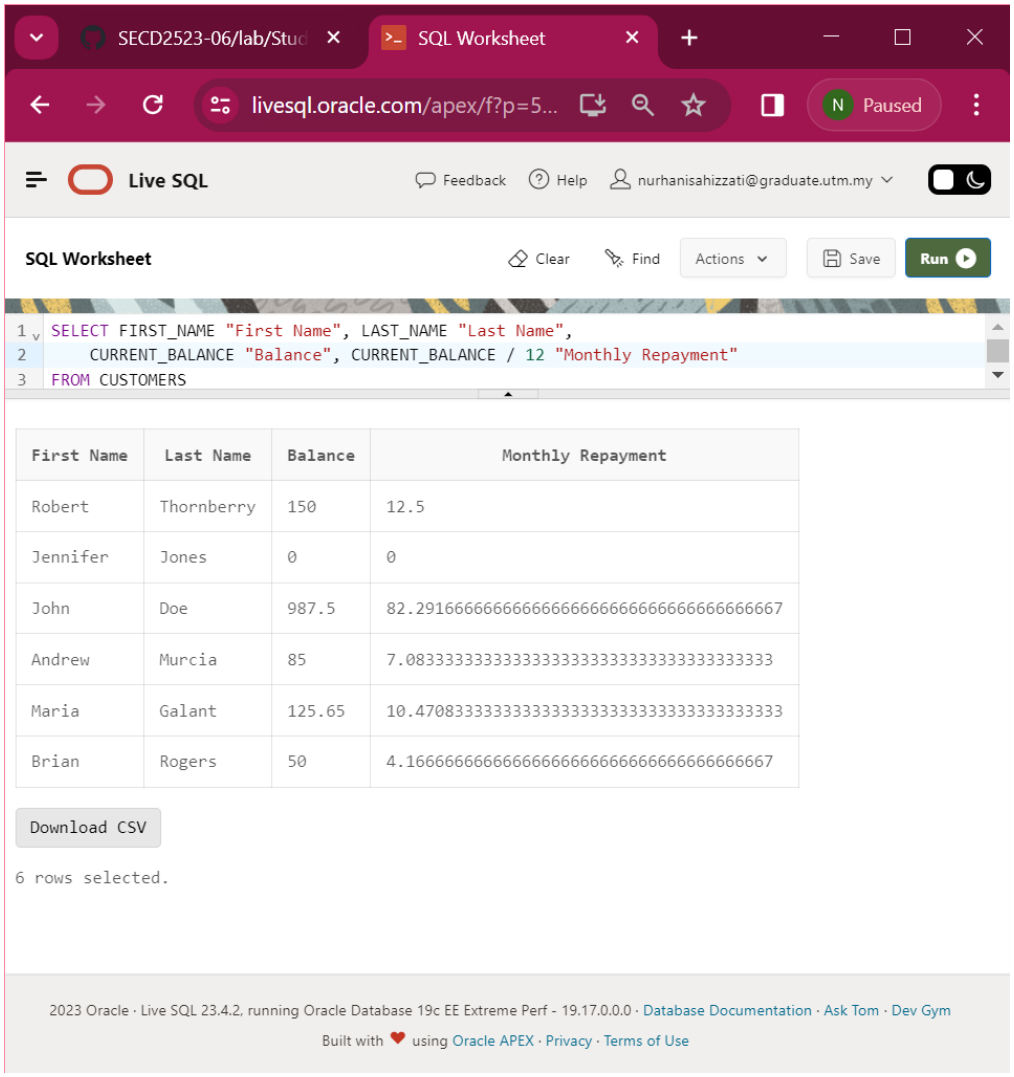


3. What would be the problem with implementing this scheme?

There will be negative value especially with current balance that valued less than 5.00. The query does not consider for cases in which subtracting the gift card value might leads to a negative balances.

Part 2 : Using Column Aliases

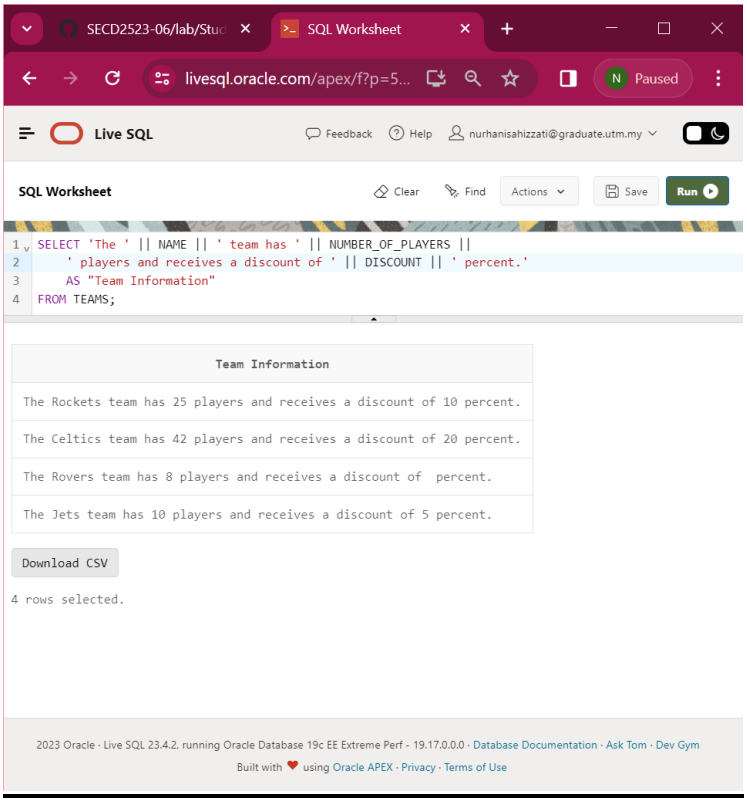
1. You previously wrote a query that display the customer's first name, last name, current balance, and monthly payment. Rewrite the query to use First Name, Last Name, Balance, and Monthly Repayments as the column aliases. The aliases are to be shown exactly as described (case sensitive).



Part 3: Using Literal Character Strings

1. Write a query that will display the team information in the following format:
   a. The Rockets team has 25 players and receives a discount of 10 percent.

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

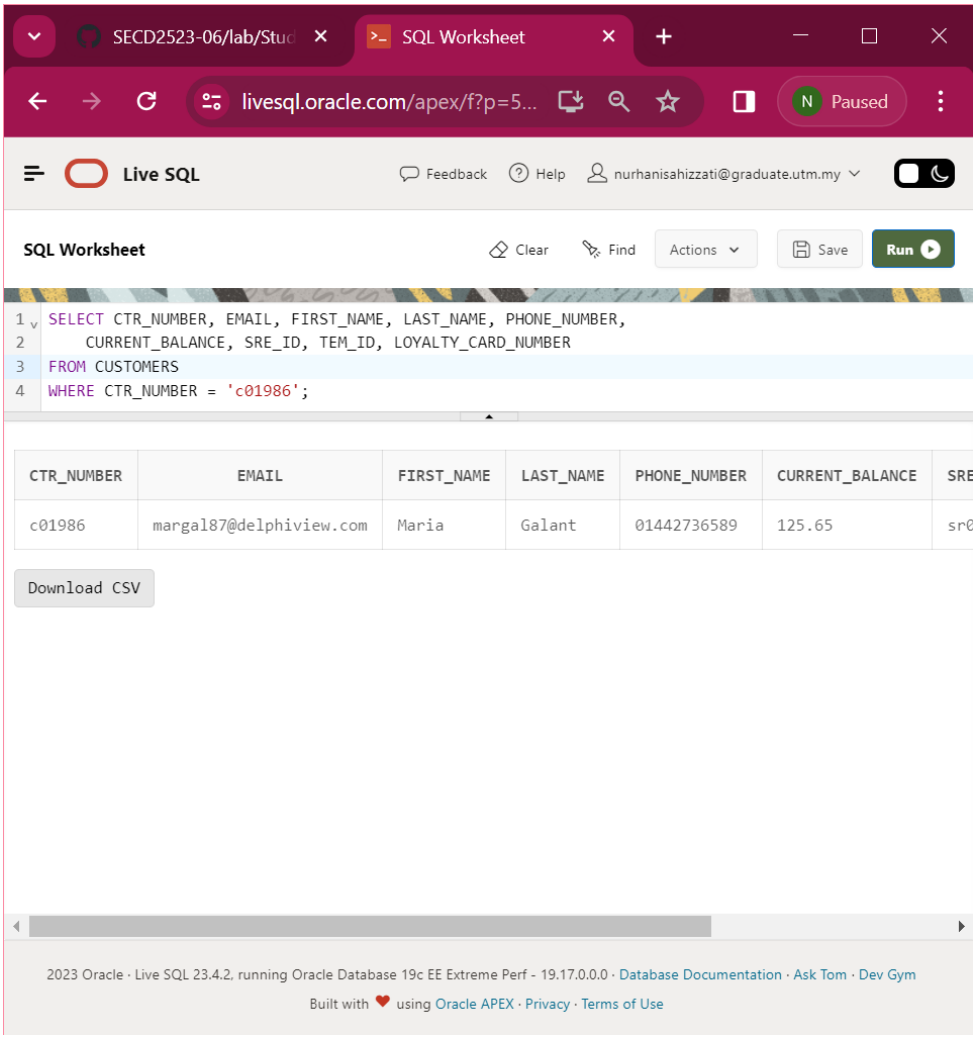


2. Why does the last team not show a discount?
   The Rovers team does not show a discount because the DISCOUNT attribute is nullable, which, in this case, their discount value is NULL.

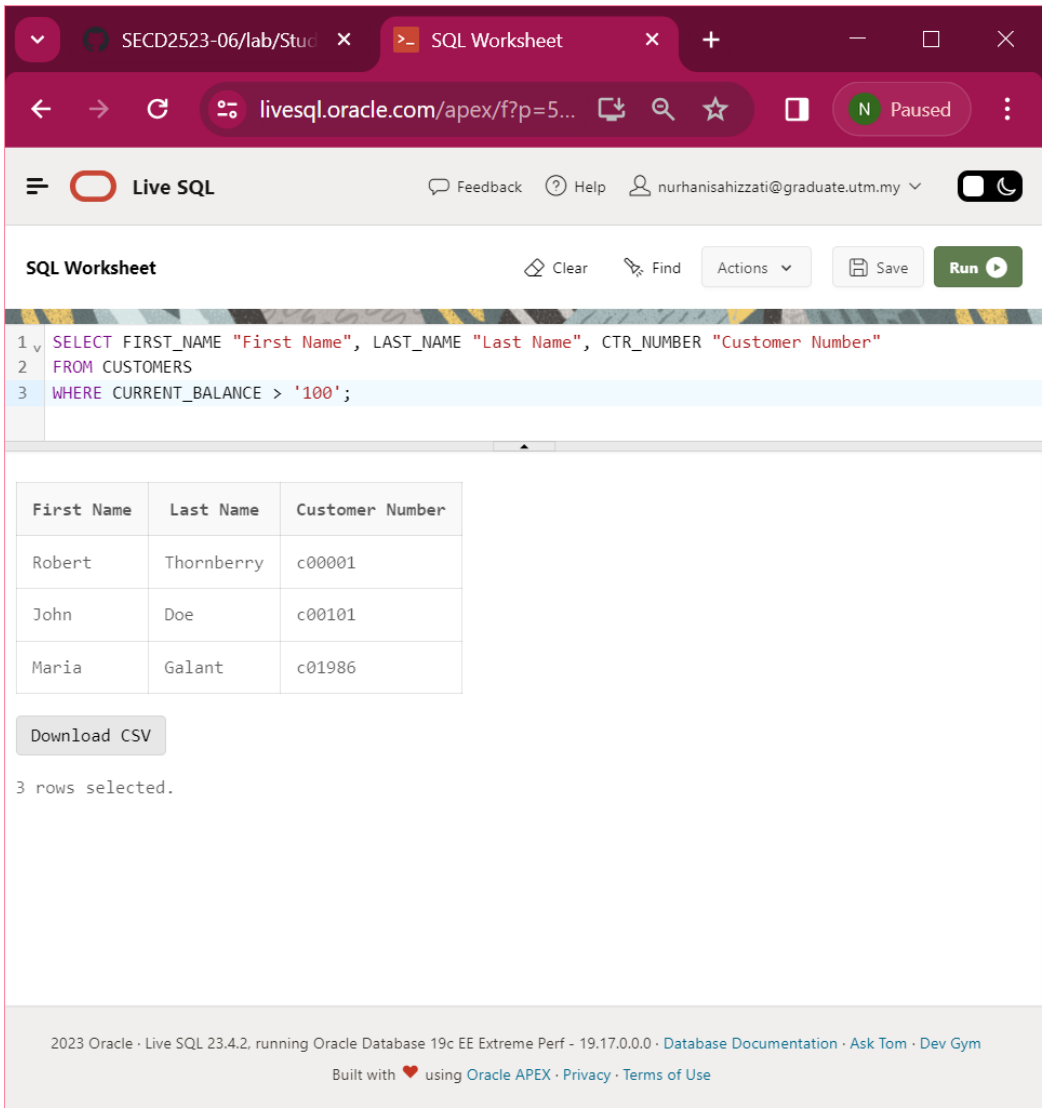
EXERCISE 3: Restricting Data Using WHERE

Part 1: Using the WHERE Clause.

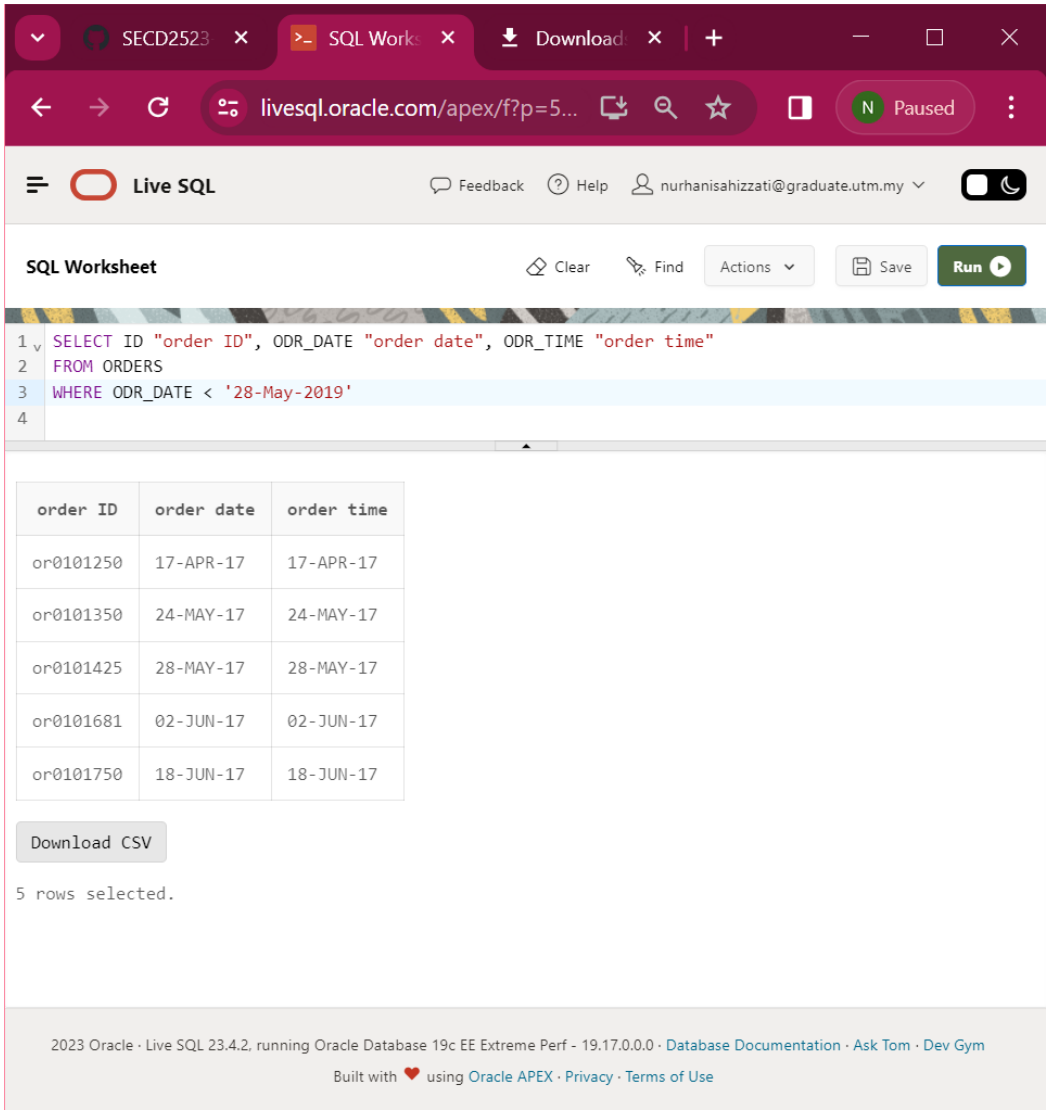
1. Using the unique customer number in the where clause display all columns for Maria Galant.



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.

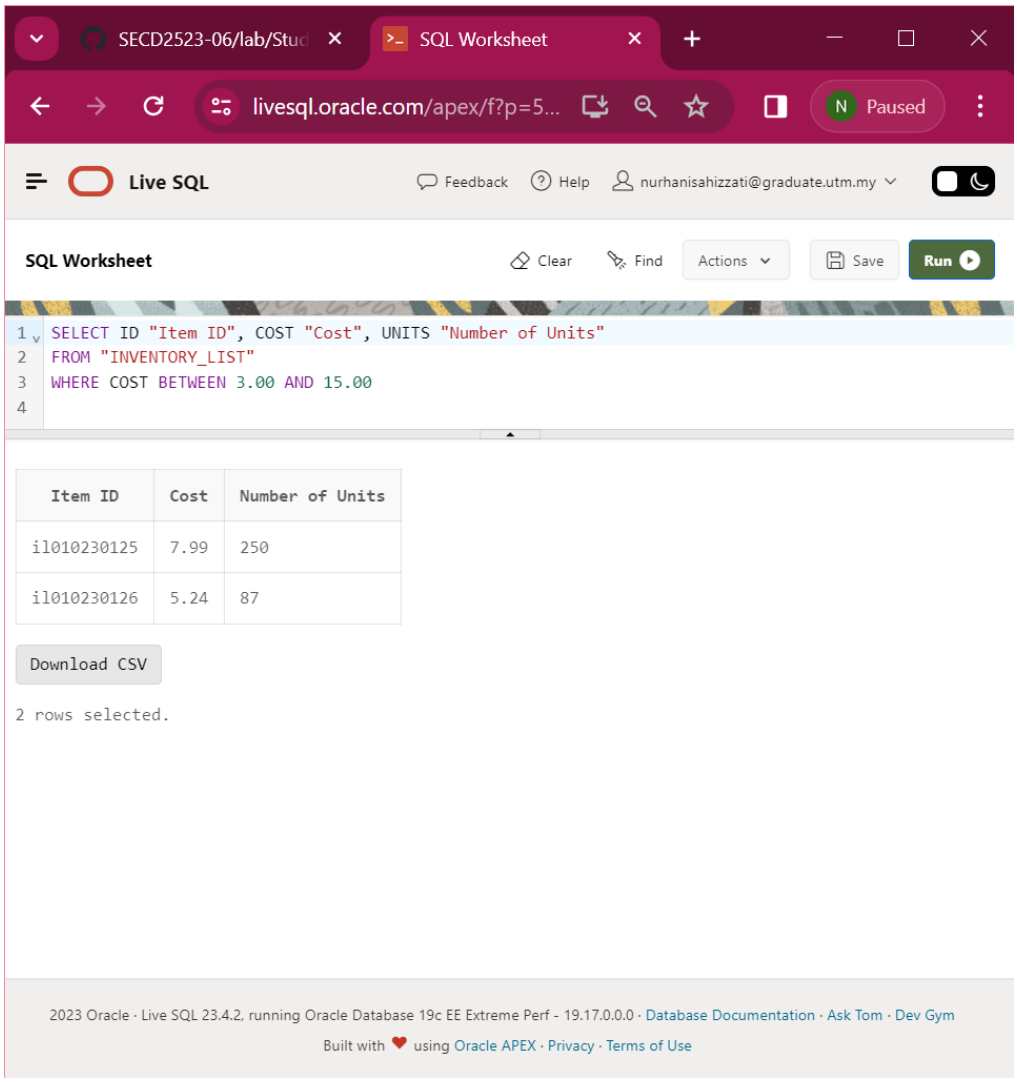


3. Display the order id, date and time of all orders that were placed before the 28th of May 2019. Use an appropriate alias for your column headings.



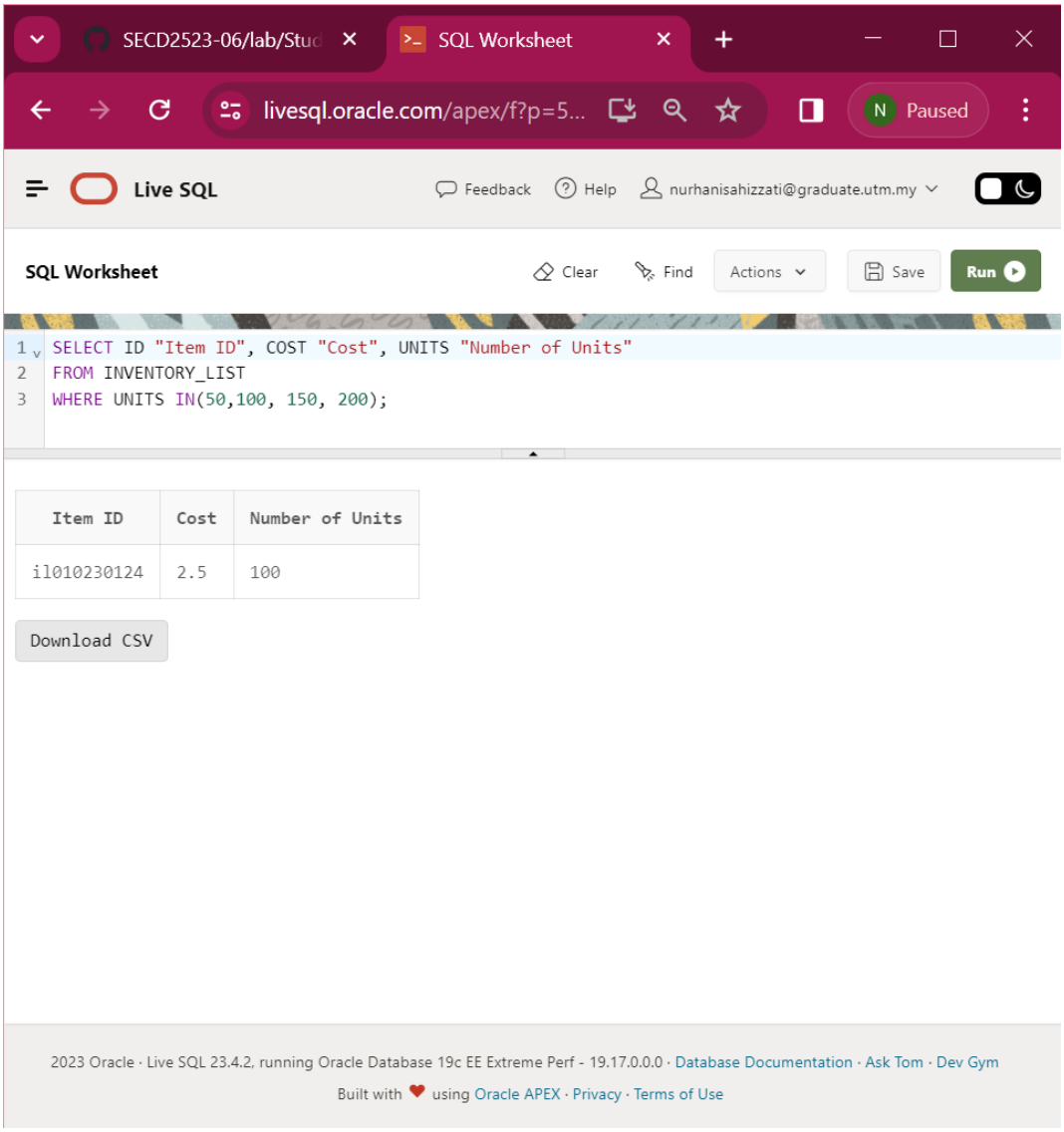
Part 2: Range Conditions: BETWEEN Operator

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.



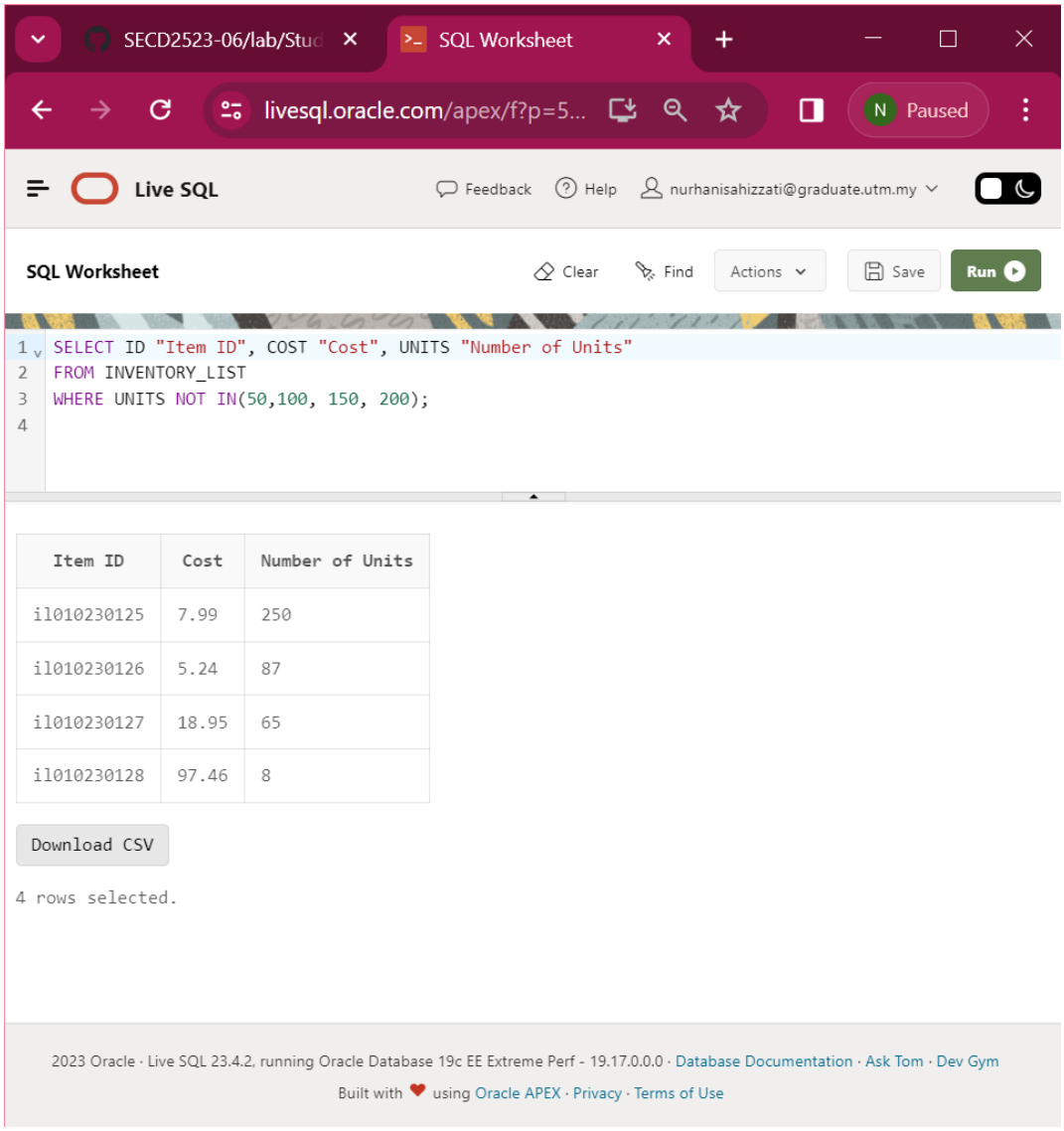
Part 3: Membership Conditions: IN Operator

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.



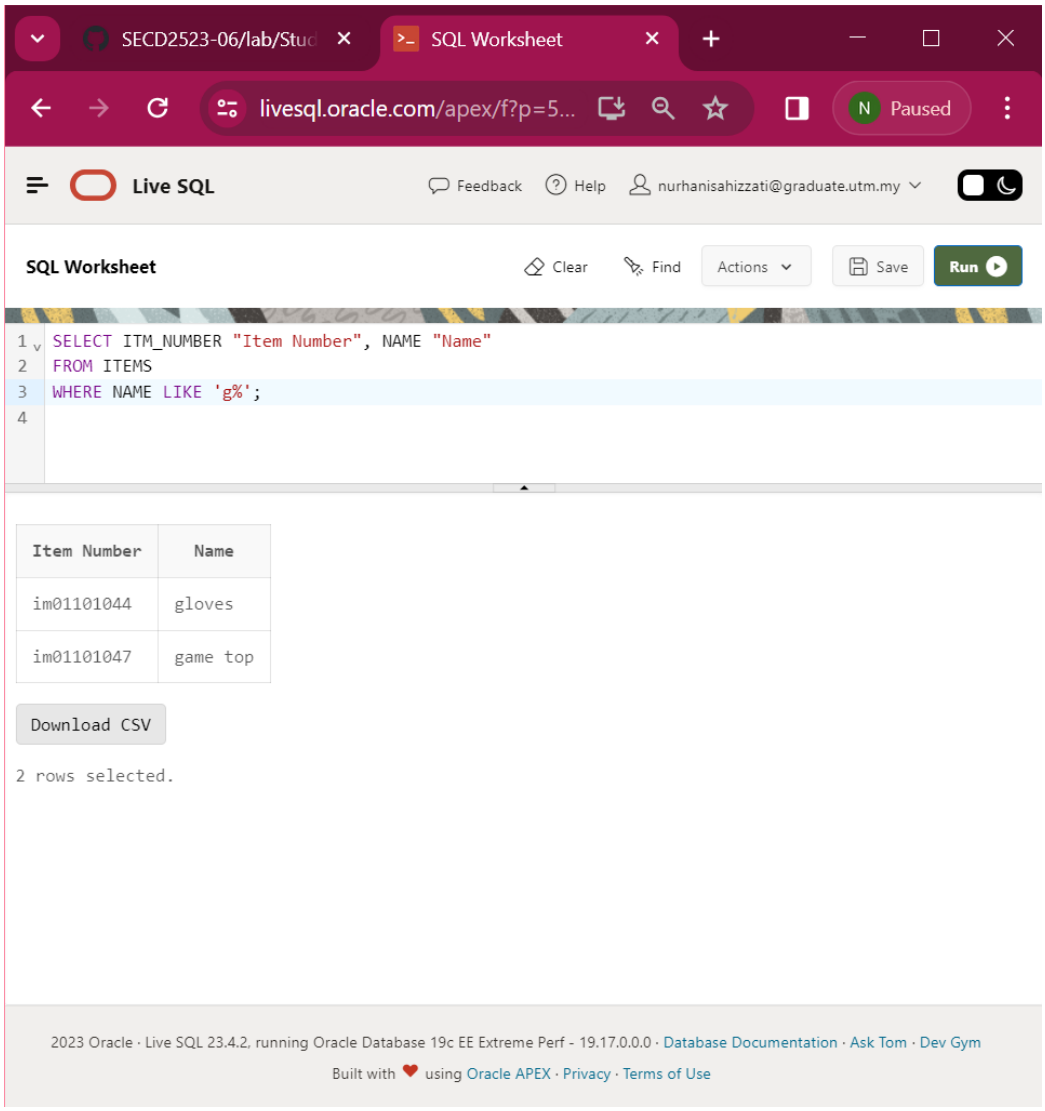
Part 4: Membership Conditions: NOT IN Operator

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.



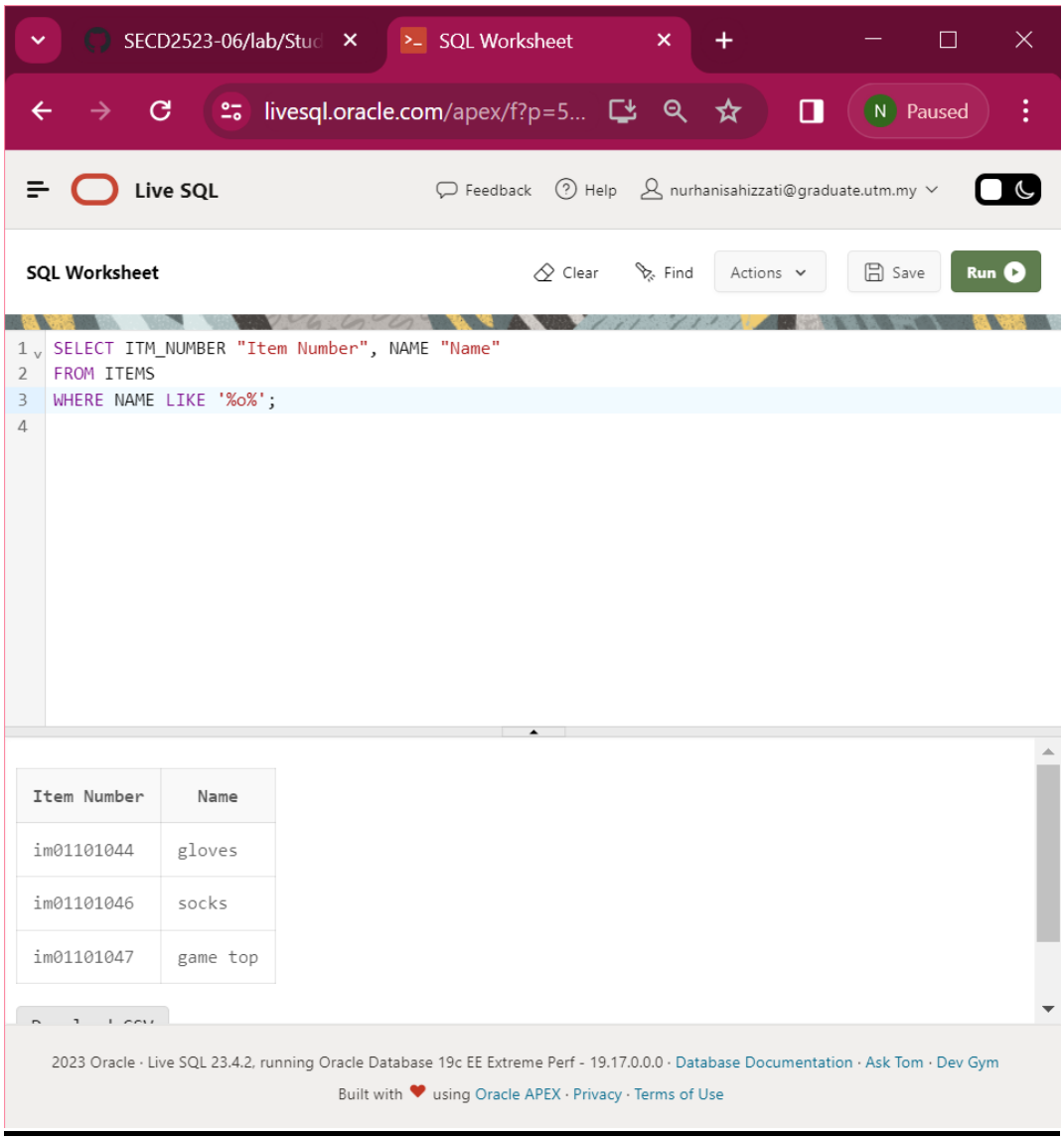
Part 5: Pattern Matching: LIKE Operator

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.



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.

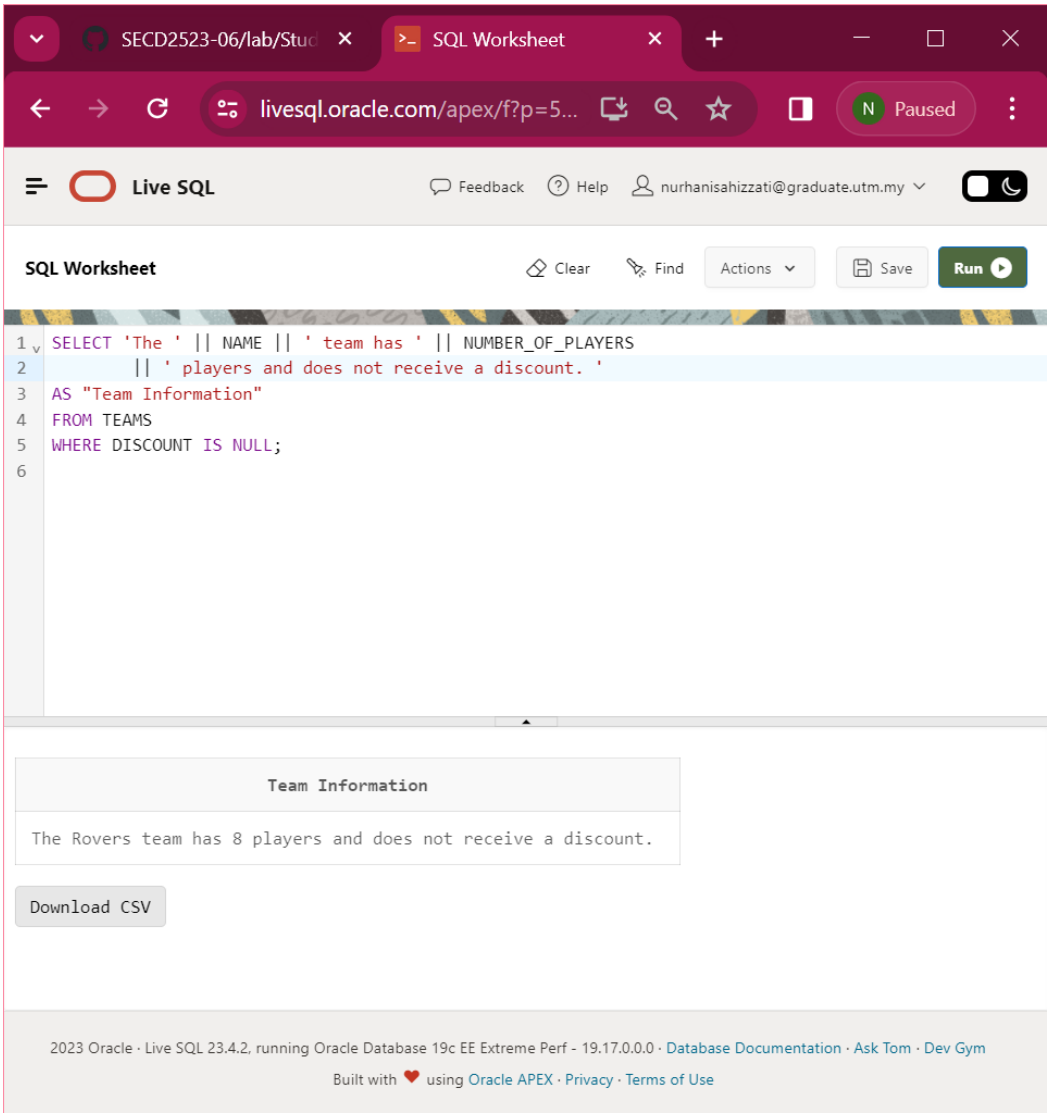


EXERCISE 4: Restricting Data Using WHERE

Part 1: Using the NULL Conditions

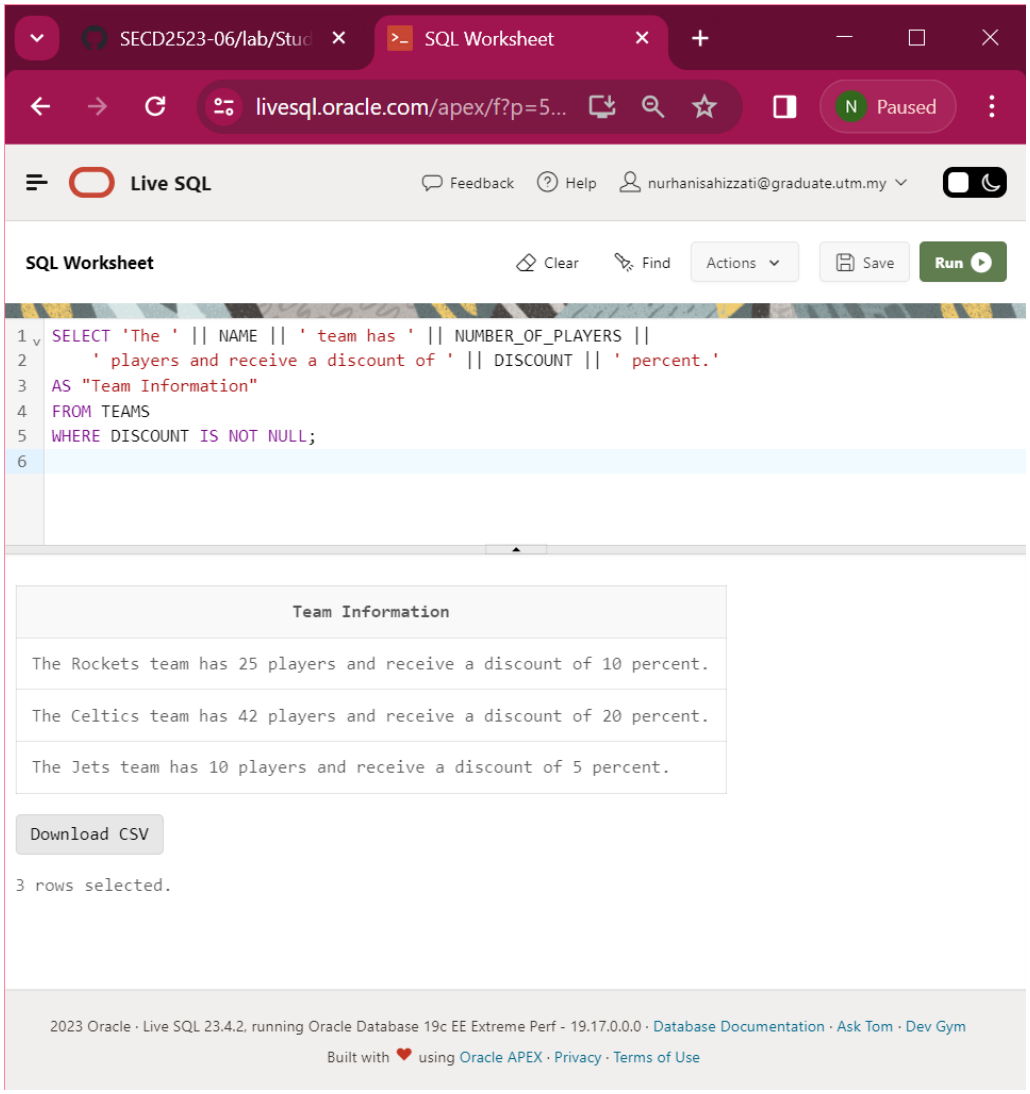
1. Write a query that will display information for teams that don't receive a discount in the following format:
    a. The Rovers team has 25 players and does not receive a discount.

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



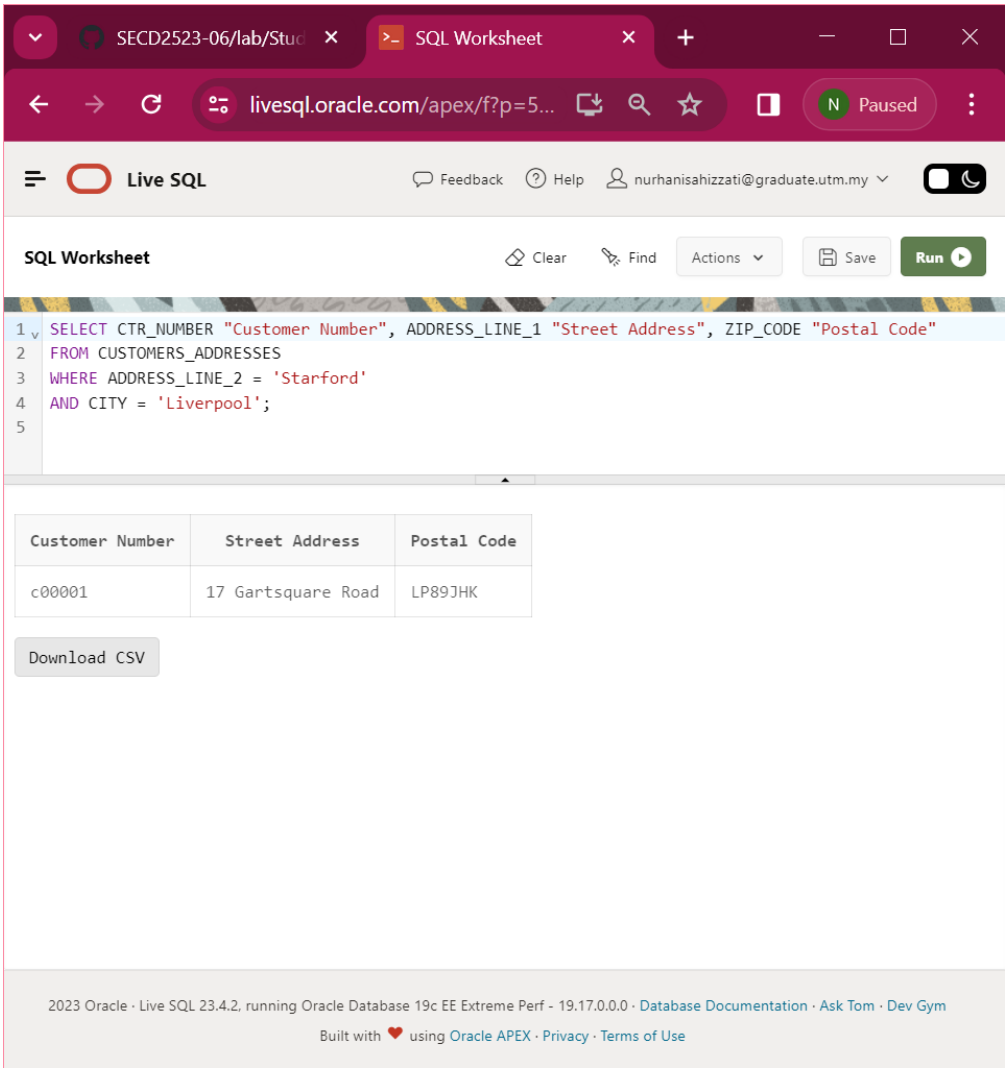
2. Write a query that will display information for only teams that receive a discount in the following format:
    a. The Rockets team has 25 players and receives a discount of 10 percent.

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



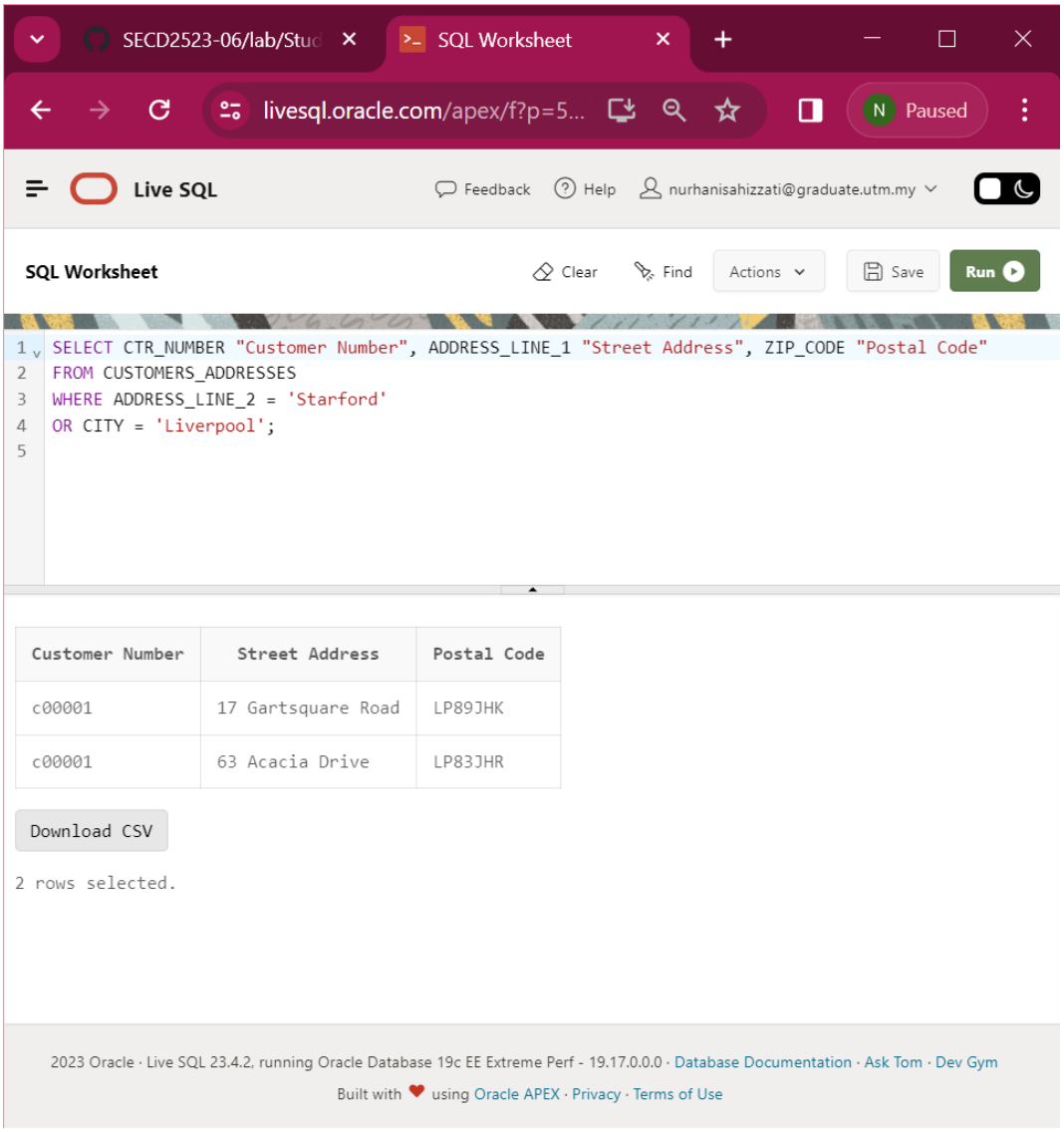
Part 2: Logical Operators: AND

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.



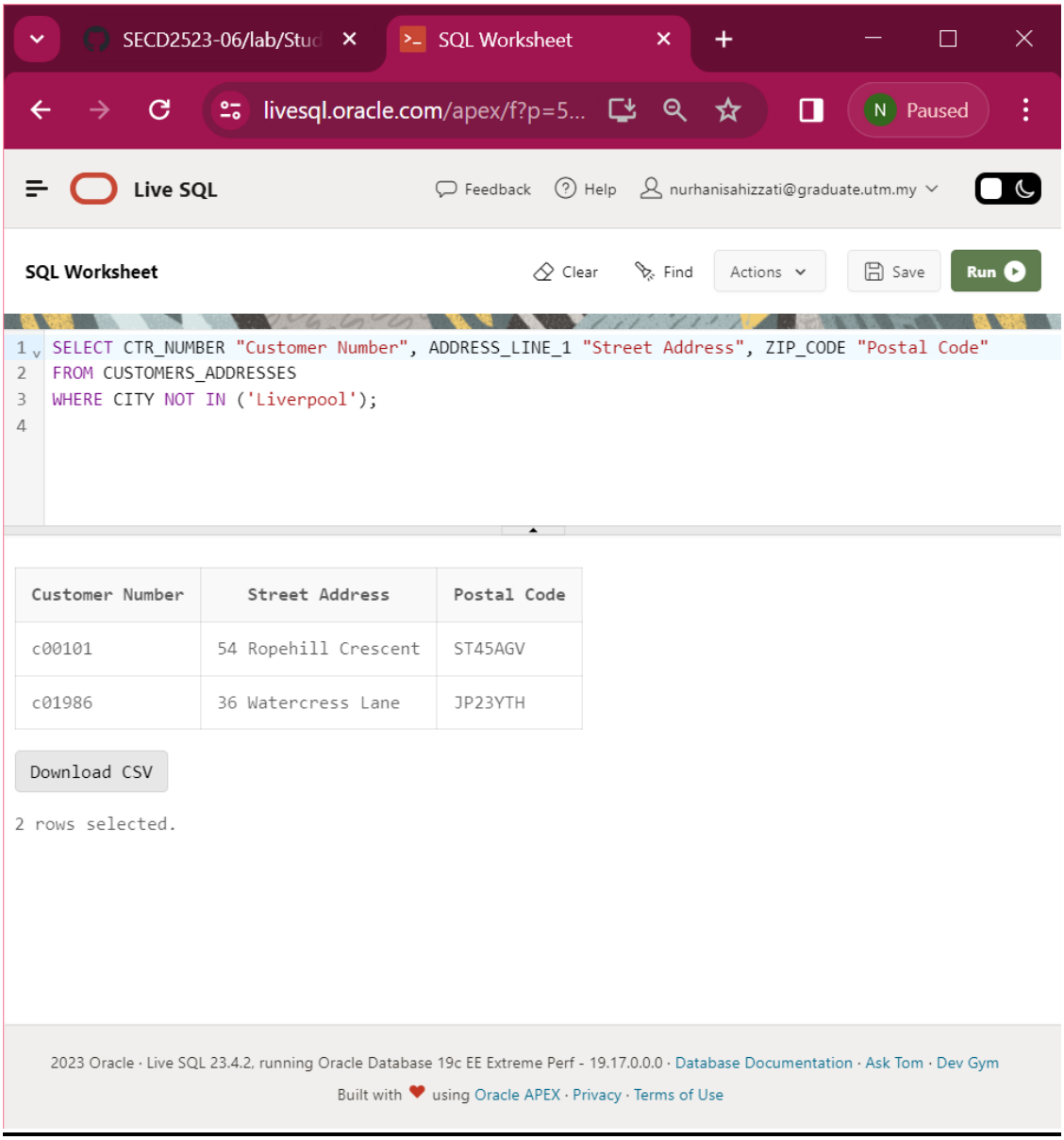
Part 3: Logical Operators: OR

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.



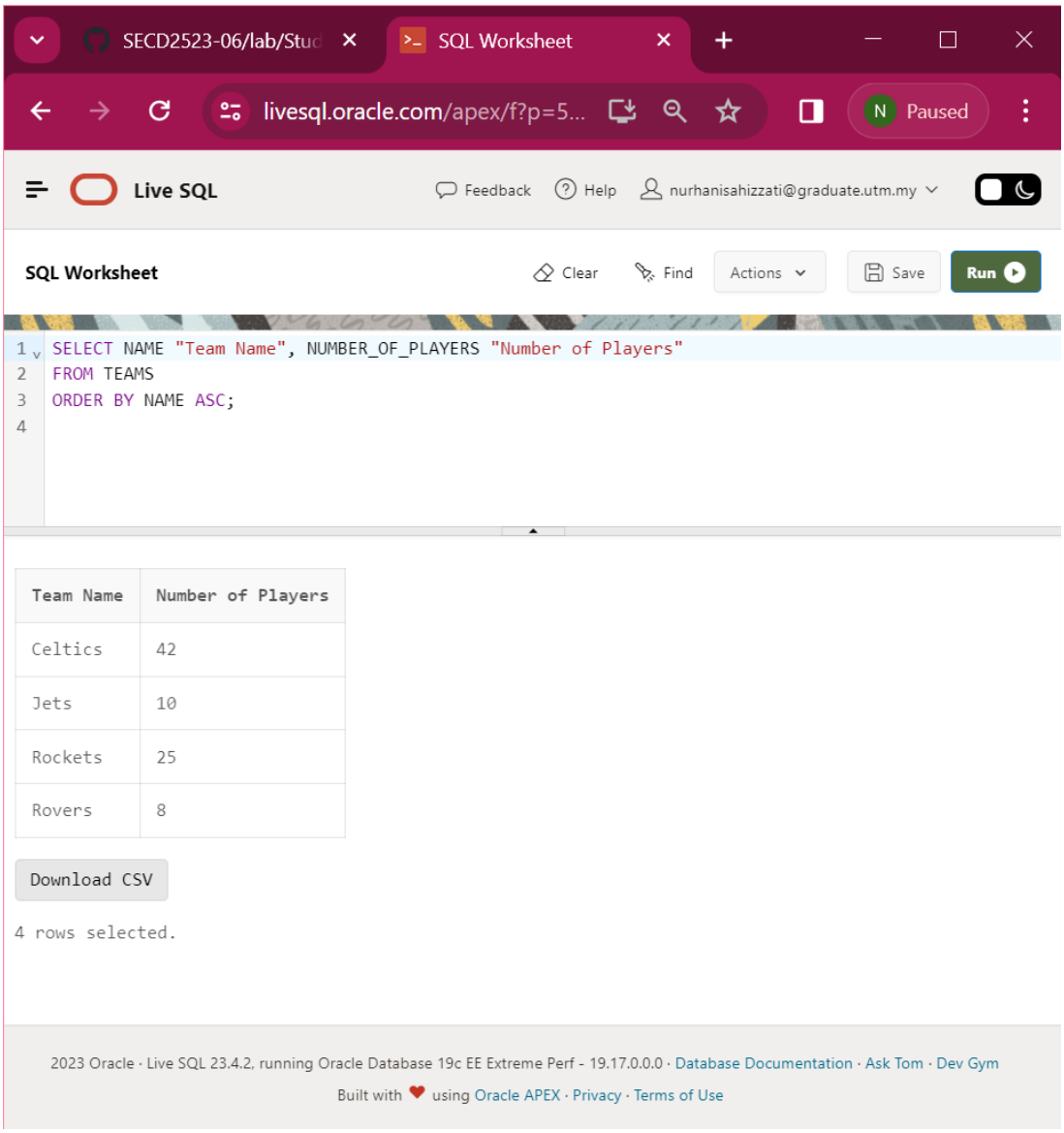
Part 4: Logical Operators: NOT Equal To

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.

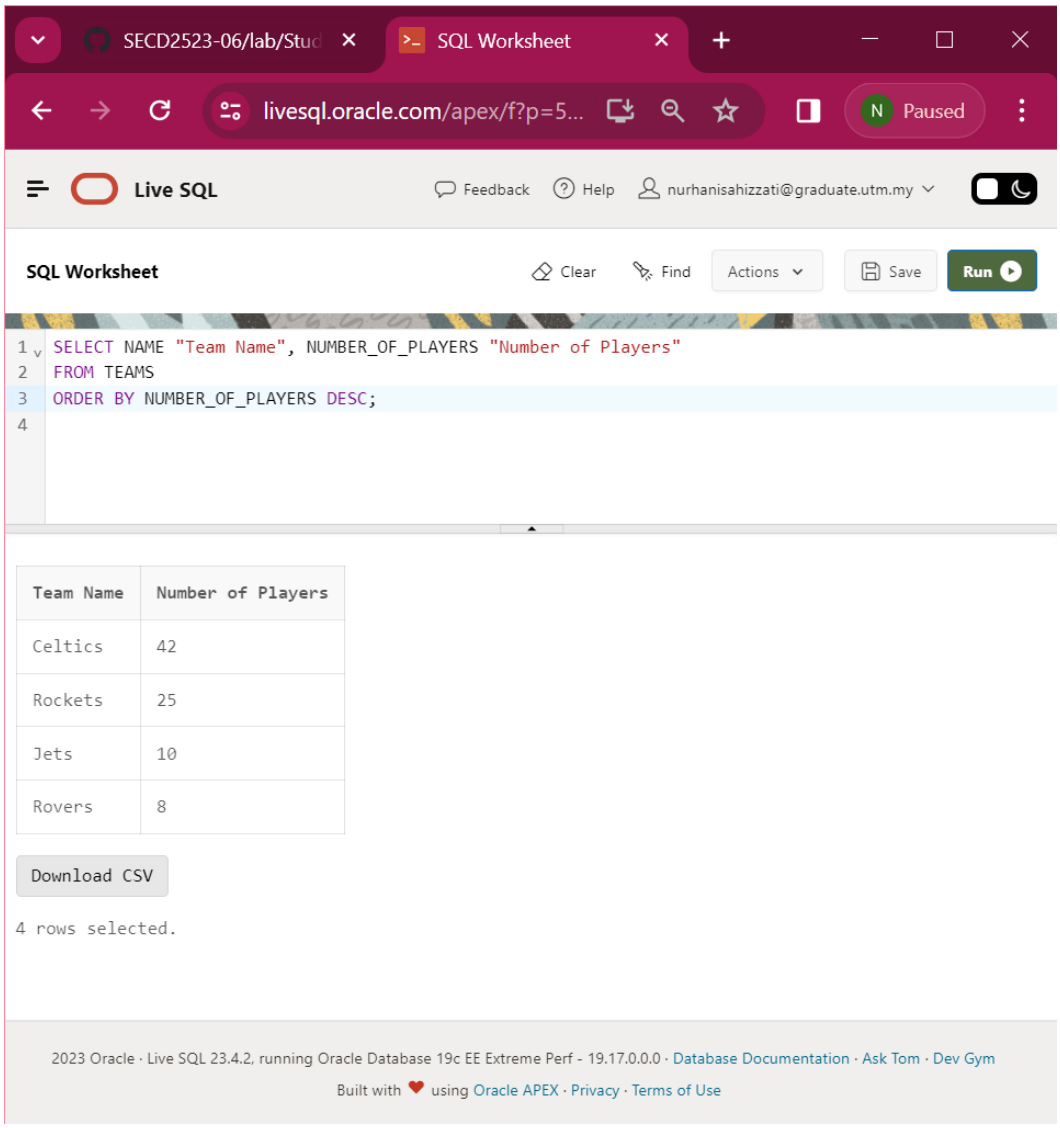


EXERCISE 5: Sorting Data Using ORDER BY

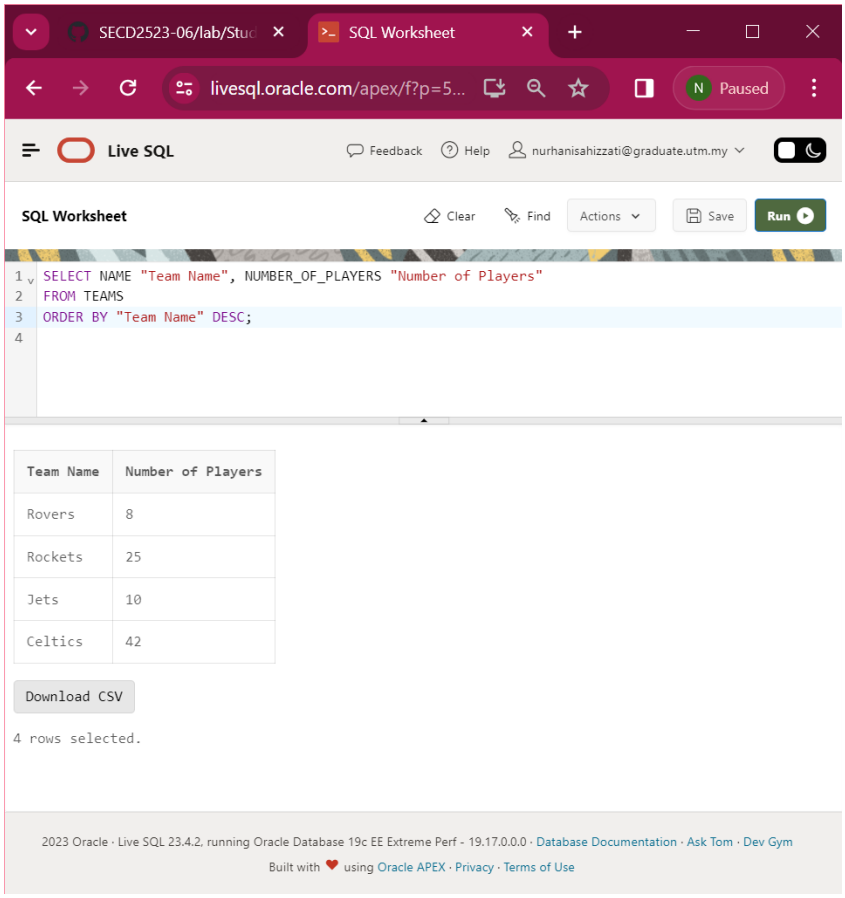
1. Display the team's name and number of players alphabetically in order of team name. Use an appropriate alias for your column headings.



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



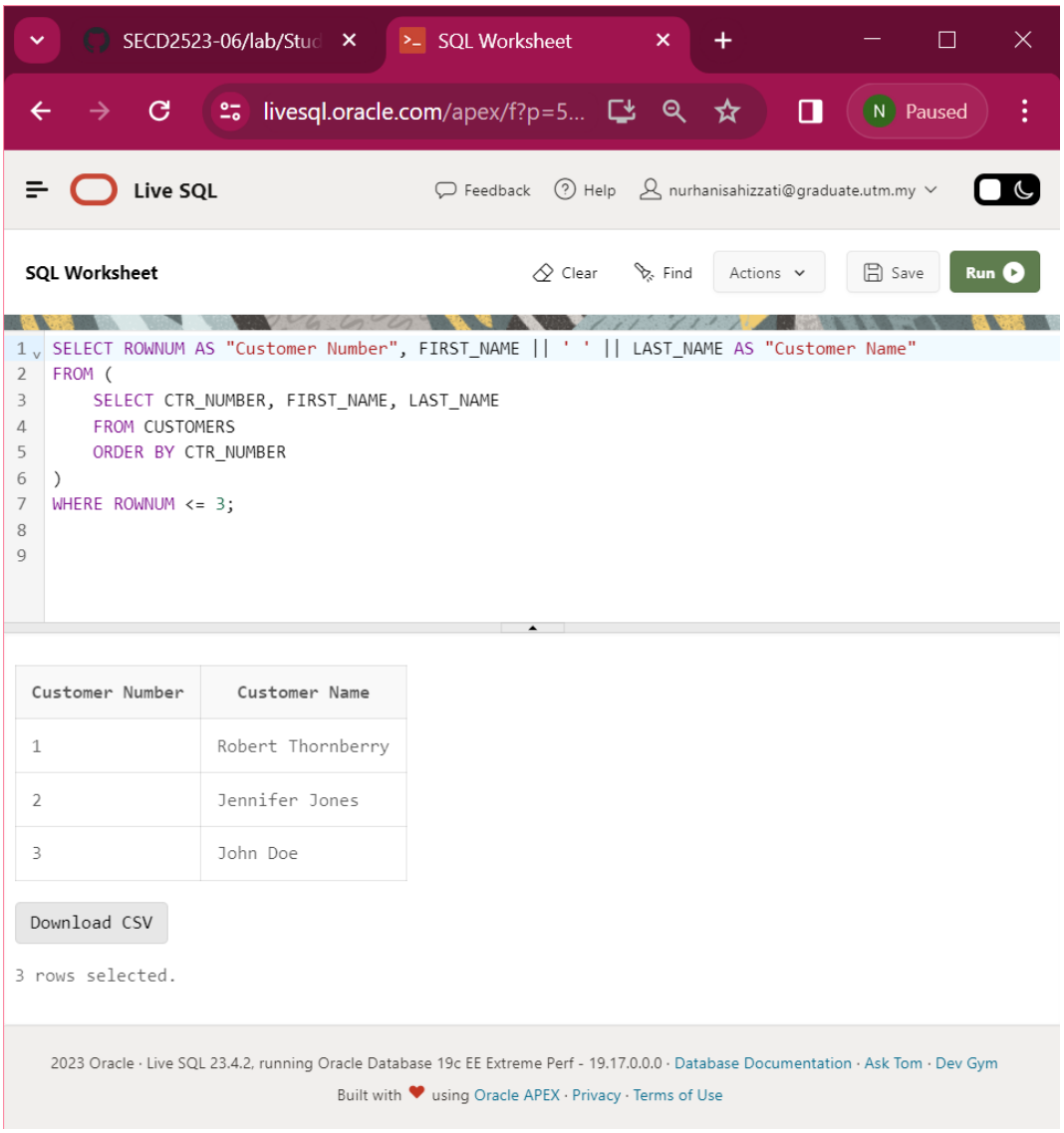
3. Display the team's name and number of players alphabetically in order of team name. Use Team Name for the name alias and Players for the number of players. Sort the output in descending order of name using the alias in the ORDER BY clause.



EXERCISE 6: Sorting Data Using ORDER BY

Part 1 : TOP-N-ANALYSIS

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.



Part 2 : Using a Substitution Variable

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.

(SQL ACCEPT statement is an unsupported command, need to manually input commission rate into the coding)