



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

UNIVERSITI TEKNOLOGI MALAYSIA
SEMESTER 1, SESSION 2023/2024

LABSKILL 3

SECD2523 : DATABASE
SECTION 10

Nmae : Muhammad Afiq Kasyfi Bin Nor Azelan

Matric No. : B23CS0049

Lecturer's Name : Madam Rozilawati Binti Dollah @ MD.Zain

Section 6 lesson 6 Exercise 1: Retrieving Data Using Select

Part 1: Retrieving all columns from a table.

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

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	-	-	1c1015
c00101	unknown@here.com	John	Doe	03216547808	987.5	sr01	t002	-
c00103	MurciaA@globaltech.com	Andrew	Murcia	07715246890	85	-	-	1c2341
c01986	margal07@delphiview.com	Maria	Galant	01442736589	125.65	sr03	t003	-

2. Teams

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

3. 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 baseball bat	equipment	-	-	il010230128

Part 2: Selecting Spevific Columns

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

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

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

NAME	NUMBER_OF_PLAYERS
Rockets	25
Celtics	42
Rovers	8

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

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

Part 1: Using Arithmetic Operators

- [illegible]

- ```
1 v SELECT first_name, last_name, ctr_number, current_balance, (current_balance - 5.00)
2 |AS new_current_balance_minus_gift
3 FROM customers;
```

| FIRST_NAME | LAST_NAME  | CTR_NUMBER | CURRENT_BALANCE | NEW_CURRENT_BALANCE_MINUS_GIFT |
|------------|------------|------------|-----------------|--------------------------------|
| 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                         |

- The Data may be difficult to verify as to whether it has been updated

## 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 Repaymenys as the column aliases. The aliases are to be shown exactly as described (case sensitive).

```
1 SELECT first_name AS First_Name, Last_name AS Last_Name, current_balance AS Balance, (current_balance / 12)
2 AS Monthly_Repayments
3 FROM customers;
```

[illegible]

### 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.

| Team Information                                                     |
|----------------------------------------------------------------------|
| The Rocketsteam has 25players and receives a discount of 10 percent. |
| The Celticsteam has 42players and receives a discount of 20 percent. |
| The Roversteam has 8players and receives a discount of percent.      |

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

The last team does not have a discount information.

## Section 6 lesson 7 Exercise 1: 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.

| 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   | -                   |

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.

| First Name | Last Name  | Customer Number |
|------------|------------|-----------------|
| Robert     | Thornberry | c00001          |
| John       | Doe        | c00101          |
| Maria      | Galant     | c01986          |

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

| Order ID  | Order Date | Order Time |
|-----------|------------|------------|
| or0101250 | 17-APR-17  | 17-APR-17  |
| or0101350 | 24-MAY-17  | 24-MAY-17  |
| or0101425 | 28-MAY-17  | 28-MAY-17  |
| or0101681 | 02-JUN-17  | 02-JUN-17  |
| or0101750 | 18-JUN-17  | 18-JUN-17  |

## Part 2: Range Conditions: Between operators.

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

| ID          | COST | UNITS |
|-------------|------|-------|
| i1010230125 | 7.99 | 250   |
| i1010230126 | 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.

| ID          | COST | UNITS |
|-------------|------|-------|
| i1010230124 | 2.5  | 100   |

#### 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.

| ID          | COST  | UNITS |
|-------------|-------|-------|
| il010230125 | 7.99  | 250   |
| il010230126 | 5.24  | 87    |
| il010230127 | 18.95 | 65    |
| il010230128 | 97.46 | 8     |

## 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.

| Item Number | Item Name |
|-------------|-----------|
| im01101044  | gloves    |
| im01101047  | game top  |

## 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.

| Item Number | Item Name |
|-------------|-----------|
| im01101044  | gloves    |
| im01101046  | socks     |
| im01101047  | game top  |

## Section 6 lesson 7 Exercise 2: 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:

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

Use Team Information as the column alias.

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

#### Team Information

The Rovers team has 8 player and does not receive a discount.

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.

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

#### Team Information

The Rockets team has 25 player and receive a discount.

The Celtics team has 42 player and receive a discount.

## 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.

```
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';
```

| Customer Number | Street Address     | Postal Code |
|-----------------|--------------------|-------------|
| c00001          | 17 Gartsquare Road | LP89JHK     |

### 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.

```
1 v 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';
```

| Customer Number | Street Address     | Postal Code |
|-----------------|--------------------|-------------|
| c00001          | 83 Barrhill Drive  | LP79HJK     |
| c00001          | 17 Gartsquare Road | LP89JHK     |
| c00001          | 63 Acacia Drive    | LP83JHR     |

## Partt 4: Logical Operatoes: 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.

```
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';
```

| Customer Number | Street Address       | Postal Code |
|-----------------|----------------------|-------------|
| c00101          | 54 Ropehill Crescent | ST45AGV     |
| c01986          | 36 Watercress Lane   | JP23YTH     |



## Section 6 lesson 8 Exercise 1: 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.

| Team Name | Number of Players |
|-----------|-------------------|
| Celtics   | 42                |
| Rockets   | 25                |
| Rovers    | 8                 |

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

| Team Name | Number of Players |
|-----------|-------------------|
| Celtics   | 42                |
| Rockets   | 25                |
| Rovers    | 8                 |

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.

| Team Name | Number of Players |
|-----------|-------------------|
| Rovers    | 8                 |
| Rockets   | 25                |
| Celtics   | 42                |

## Section 6 lesson 8 Exercise 2: 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.

| Top 3 Customers | Customer Name    |
|-----------------|------------------|
| 1               | RobertThornberry |
| 2               | JenniferJones    |
| 3               | JohnDoe          |

## Part 2: Using 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 commission rate, and the output should be ordered by their last name. Use an appropriate alias for your column headings.

| First Name | Last Name |
|------------|-----------|
| Charles    | Raymond   |
| Barry      | Speed     |
| Victoria   | Wright    |