



**UTM**  
UNIVERSITI TEKNOLOGI MALAYSIA

**FACULTY OF COMPUTING**

**SEC 2523 DATABASE**

**SECTION 05 (SECJH)**

**SQL 03 - DATA MANIPULATION LANGUAGE DML 2**

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## PART 1

Retrieving Data Using SELECT part 1:

SELECT \* FROM customers;

SELECT \* FROM teams;

SELECT \* FROM items;

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	-

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

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 Specific Columns:

```
SELECT ctr_number, first_name, last_name, email, phone_number
```

```
FROM customers;
```

```
SELECT name, number_of_players
```

```
FROM teams;
```

```
SELECT name, description, category
```

```
FROM items;
```

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

NAME	NUMBER_OF_PLAYERS
Rockets	25
Celtics	42
Rovers	8

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 basball bat	equipment

## PART 2

## Retrieving Data Using SELECT part 2:

## 1-SELECT

first\_name,

last\_name,

current\_balance,

$$\text{current\_balance} / 12 \text{ AS monthly\_payment}$$

FROM customers;

FIRST_NAME	LAST_NAME	CURRENT_BALANCE	MONTHLY_PAYMENT
Robert	Thornberry	150	12.5
Jennifer	Jones	0	0
John	Doe	987.5	82.291666666666666666666666666667
Andrew	Murcia	85	7.08333333333333333333333333333333
Maria	Galant	125.65	10.47083333333333333333333333333333

## 2-SELECT

first\_name,

last\_name,

ctr\_number,

current\_balance,

(current\_balance - 5.00) AS adjusted\_balance

FROM customers;

FIRST_NAME	LAST_NAME	CTR_NUMBER	CURRENT_BALANCE	ADJUSTED_BALANCE
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

### Part 3: Using Literal Character Strings

1- SELECT

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

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.

2- the discount value of the third team is null that is why it is not showing

### PART 3

Restricting Data Using WHERE Limit rows using WHERE (S6L7 Objective 1) part1:

1-SELECT \*

FROM customers

WHERE ctr\_number = 'c01986';

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- SELECT

first\_name AS "First Name",

last\_name AS "Last Name",

ctr\_number AS "Customer Number"

FROM customers

WHERE current\_balance > 100;

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

```

3-SELECT
id AS "Order ID",
odr_date AS "Order Date",
odr_time AS "Order Time"
FROM orders
WHERE odr_date < TO_DATE('28-May-2019', 'DD-MM-YYYY');

```

Order ID	Order Date	Order Time
or0101250	17-APR-17	17-APR-17 08.32.30.000000 AM
or0101350	24-MAY-17	24-MAY-17 10.30.35.000000 AM
or0101425	28-MAY-17	28-MAY-17 12.30.00.000000 PM
or0101681	02-JUN-17	02-JUN-17 02.55.30.000000 PM
or0101750	18-JUN-17	18-JUN-17 09.05.00.000000 AM



```
Part2: SELECT
id AS "Inventory ID",
cost AS "Trade Cost",
units AS "Number of Units"
FROM inventory_list
WHERE cost BETWEEN 3.00 AND 15.00;
```

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

```
Part3: SELECT
id AS "Inventory ID",
cost AS "Trade Cost",
units AS "Number of Units"
FROM inventory_list
WHERE units IN (50, 100, 150, 200);
```

Inventory ID	Trade Cost	Number of Units
il010230124	2.5	100

```

Part4: SELECT
id AS "Inventory ID",
cost AS "Trade Cost",
units AS "Number of Units"
FROM inventory_list
WHERE units NOT IN (50, 100, 150, 200);

```

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

```

Part5: SELECT
itm_number AS "Item Number",
name AS "Item Name"
FROM items
WHERE name LIKE 'g%';

```

Item Number	Item Name
im01101044	gloves
im01101047	game top

Part6: SELECT

itm\_number AS "Item Number",

name AS "Item Name"

FROM items

WHERE name LIKE '%o%';

Item Number	Item Name
im01101044	gloves
im01101046	socks
im01101047	game top

## PART 4

### 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;
```

TEAM INFORMATION
The Rovers team has 8 players 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.

```
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;
```

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.

## 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';
```

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.

```
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';
```

CUSTOMER NUMBER	STREET ADDRESS	POSTAL CODE
c00001	17 Gartsquare Road	LP89JHK
c00001	63 Acacia Drive	LP83JHR

#### 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')
```

CUSTOMER NUMBER	STREET ADDRESS	POSTAL CODE
c00101	54 Ropehill Crescent	ST45AGV
c01986	36 Watercress Lane	JP23YTH

## PART 5

Part 1 :

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

Team Name	Number of Players
Celtics	42
Rockets	25
Rovers	8

Part 2 :

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

Team Name	Number of Players
Celtics	42
Rockets	25
Rovers	8

Part 3 :

```
SELECT name AS "Team Name", number_of_players AS "Players"
```

```
FROM teams
```

```
ORDER BY "Team Name" DESC;
```

Team Name	Players
Rovers	8
Rockets	25
Celtics	42



## PART 6

### 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
```

ORDER	CUSTOMER NAME
1	Robert Thornberry
2	Jennifer Jones
3	John Doe

## 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 "SALE REPRESENTATIVES"  
FROM SALES_REPRESENTATIVES  
WHERE COMMISSION_RATE=:COMMISSION_RATE  
ORDER BY LAST_NAME
```

Bind Variable	Value
:COMMISSION_RATE	5

SALE REPRESENTATIVES
Barry Speed
Victoria Wright