Database Design Project

Oracle Baseball League Store Database

Project Scenario:

You are a small consulting company specializing in database development. You have just been awarded the contract to develop a data model for a database application system for a small retail store called Oracle Baseball League (OBL).

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.

Teams and individual customers are free to purchase any item from the inventory list, but teams get a discount on the list price depending on the number of players. When a customer places an order we record the order items for that order in our database.

OBL has a team of three sales representatives that officially only call on teams but have been known to handle individual customer complaints.

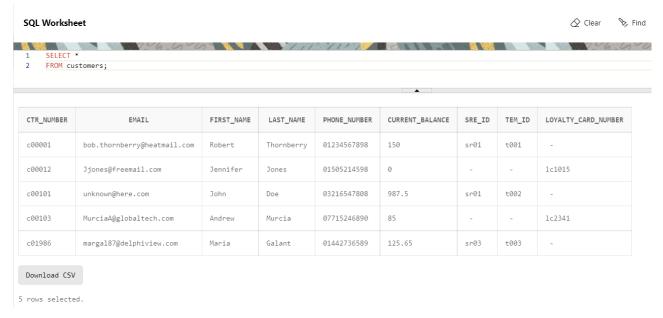# Section 6 Lesson 6 Exercise 1: Retrieving Data Using SELECT

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.
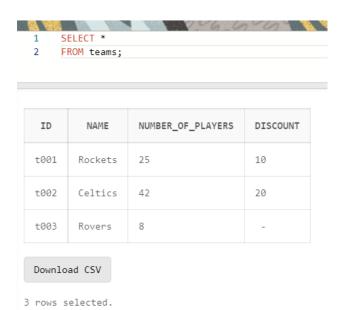
Part 1: Retrieving all columns from a table.

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

1. customers.

SQL Worksheet   ⬦ Clear   ✎ Find

```
1    SELECT *
2    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	marga187@delphiview.com	Maria	Galant	01442736589	125.65	sr03	t003	-

Download CSV

5 rows selected.

2. teams.

SQL Worksheet

```
1    SELECT *
2    FROM teams;
```

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

Download CSV

3 rows selected.

3. items

SQL Worksheet

```
1   SELECT *
2   FROM items;
```

ITM_NUMBER	NAME	DESCRIPTION	CATEGORY	COLOR	Size	ILT_ID
im01101044	gloves	catcher mitt	clothing	brown	m	i1010230124
im01101045	under shirt	top worn under the game top	clothing	white	s	i1010230125
im01101046	socks	team socks with emblem	clothing	range	l	i1010230126
im01101047	game top	team shirt with emblem	clothing	range	m	i1010230127
im01101048	premium bat	high quaity basball bat	equipment	-	-	i1010230128

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.

SQL Worksheet

```
1    SELECT ctr_number, first_name, last_name, email, phone_number
2    FROM 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

Download CSV

5 rows selected.

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

SQL Worksheet

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

NAME	NUMBER_OF_PLAYERS
Rockets	25
Celtics	42
Rovers	8

Download CSV

3 rows selected.

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

SQL Worksheet

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

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

Download CSV

5 rows selected.

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.
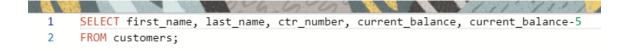
SQL Worksheet

```
1    SELECT first_name, last_name, current_balance, current_balance/12
2    FROM customers;
```

FIRST_NAME	LAST_NAME	CURRENT_BALANCE	CURRENT_BALANCE/12
Robert	Thornberry	150	12.5
Jennifer	Jones	0	0
John	Doe	987.5	82.2916666666666666666666666666666666667
Andrew	Murcia	85	7.08333333333333333333333333333333333333
Maria	Galant	125.65	10.4708333333333333333333333333333333333

Download CSV

5 rows selected.

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.

SQL Worksheet

```
1    SELECT first_name, last_name, ctr_number, current_balance, current_balance-5
2    FROM customers;
```

FIRST_NAME	LAST_NAME	CTR_NUMBER	CURRENT_BALANCE	CURRENT_BALANCE-5
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

Download CSV

5 rows selected.

3. What would be the problem with implementing this scheme?
   The current balance should not be below zero

2

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).

SQL Worksheet

```
1    SELECT first_name AS "First Name", last_name AS "Last Name", current_balance AS "Balance", current_balance/12 AS "Monthl
2    FROM customers;
```

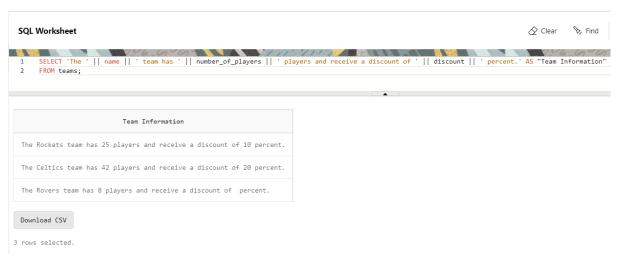| First Name	Last Name	Balance	Monthly Repayments
Robert	Thornberry	150	12.5
Jennifer	Jones	0	0
John	Doe	987.5	82.2916666666666666666666666666666666667
Andrew	Murcia	85	7.08333333333333333333333333333333333333
Maria	Galant	125.65	10.4708333333333333333333333333333333333

Download CSV

5 rows selected.

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.

    ```
    SQL Worksheet                                              Clear   Find

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

Team Information
The Rockets team has 25 players and receive a discount of 10 percent.
The Celtics team has 42 players and receive a discount of 20 percent.
The Rovers team has 8 players and receive a discount of percent.

    ```
    Download CSV
    ```

    3 rows selected.

2. Why does the last team not show a discount?
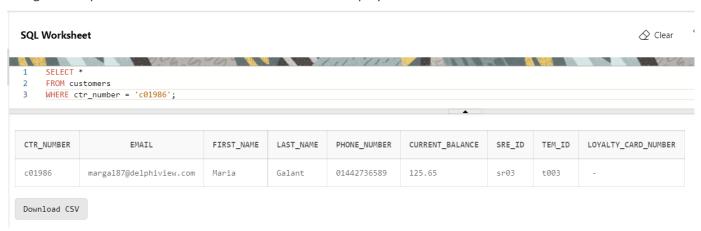   The discount value is NULL

Section 6 Lesson 7 Exercise 1: Restricting Data Using WHERE
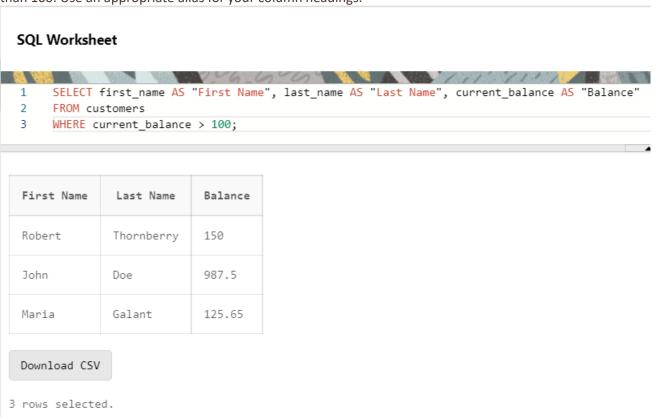
Limit rows using WHERE (S6L7 Objective 1)

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.

SQL Worksheet   Clear

```
1   SELECT *
2   FROM customers
3   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	-

Download CSV

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.

SQL Worksheet

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

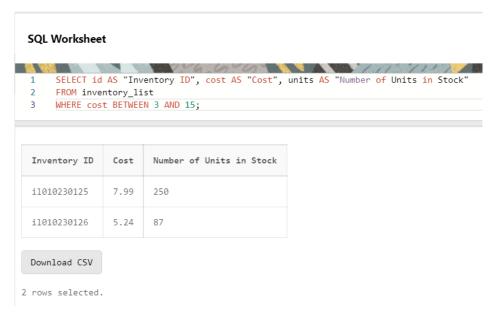| First Name	Last Name	Balance
Robert	Thornberry	150
John	Doe	987.5
Maria	Galant	125.65

Download CSV

3 rows selected.

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.

SQL Worksheet

```
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< '28-May-2019';
```

Order ID	Order Date	Order Time
or0101250	17-APR-17	08:32:30
or0101350	24-MAY-17	10:30:35
or0101425	28-MAY-17	12:30:00
or0101681	02-JUN-17	14:55:30
or0101750	18-JUN-17	09:05:00

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5 rows selected.

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.

SQL Worksheet

```
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;
```

Inventory ID	Cost	Number of Units in Stock
i1010230125	7.99	250
i1010230126	5.24	87

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2 rows selected.

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.
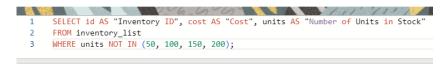
SQL Worksheet

```
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);
```

Inventory ID	Cost	Number of Units in Stock
i1010230124	2.5	100

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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.

SQL Worksheet

```
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);
```

Inventory ID	Cost	Number of Units in Stock
i1010230125	7.99	250
i1010230126	5.24	87
i1010230127	18.95	65
i1010230128	97.46	8

Download CSV

4 rows selected.

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.

SQL Worksheet

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

Item ID	Item Name
im01101044	gloves
im01101047	game top

Download CSV

2 rows selected.

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.

SQL Worksheet

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

Item ID	Item Name
im01101044	gloves
im01101046	socks
im01101047	game top

Download CSV

3 rows selected.