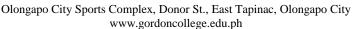


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# Information Management 1 LECTURE

Title: Introduction to SQL Module No: 3

#### I. INTRODUCTION

In order to develop well-meaning database, we need to understand the concept of SQL. SQL or structured query language that can help to administer the proper executions and manipulations of the entire database itself. It will also help in setting up parameters and distinguishing anomalies within a certain databases.

#### II. LEARNING OBJECTIVES

After studying this module, you should be able to:

- Understand all about SQL.
- Identify and understand the different Join queries.
- Understand and identify the basic sql commands.
- Understand the difference between fetch transaction and write transaction.

# III. TOPICS AND KEY CONCEPTS A. SQL STRUCTURE

**SQL** 

#### **SQL COMPONENTS**

SQL is a comprehensive language that has its own DDL and DML components:

- ➤ DATA DEFINITION LANGUAGE

  It is used to provide commands for defining relation schemes, deleting relations, and creating indices, among others.
- ➤ INTERACTIVE DATA MANIPULATION LANGUAGE It can be used to insert, delete, and update tuples in a relation.
- EMBEDDED DATA MANIPULATION LANGUAGE The embedded form of the DML is used to incorporate SQL statements into programs created using other programming languages.

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#### VIEW DEFINITION

It contains commands used for defining relational views.

#### ➤ AUTHORIZATION

The DDL of SQL includes commands for specifying access rights to base relations and views.

#### > INTEGRITY

The DDL of SQL includes commands for specifying access rights to base relations and views.

#### > TRANSACTION CONTROL

These are commands used to specify the start and end of transactions. It is also used in data locking and concurrency controls.

#### **BASIC STRUCTURE**

SQL expression is made up of three clause: SELECT, FROM, WHERE

#### **SELECT**

The Select clause is used to list the attributes needed to be included in the output of the query.

#### **FROM**

The From clause is used to include the names of the relations that are to be used in the query.

#### **WHERE**

The Where clause consists of a predicate that involves the attributes of the relations described in the From clause.

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## **PERSONNEL**

ENAME	MGR	DEPT	SALARY
GOKONGWEI	4016	DB	65000
SORIANO	5114	LANGUAGES	39000
SY	4016	DB	40000
YU	5015	STORAGE	75000
ZOBEL	4016	DB	35000
	GOKONGWEI SORIANO SY	GOKONGWEI 4016  SORIANO 5114  SY 4016  YU 5015	GOKONGWEI 4016 DB  SORIANO 5114 LANGUAGES  SY 4016 DB  YU 5015 STORAGE

## **SQL COMMANDS**

QUERY 1: LIST DOWN ALL EMPLOYEE IN PERSONNEL.

SELECT ENAME FROM PERSONNEL

	ENAME
GOKONG	WEI
SORIANO	)
SY	
YU	
ZOBEL	

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QUERY 2: LIST DOWN ALL ENAME WHOSE SALARY IS GREATER THAN 50,000.

SELECT ENAME FROM PERSONNEL WHERE SALARY > 50,000



QUERY 3: LIST DOWN ALL ENO AND ENAME WHOSE NAME IS STARTS WITH S.

SELECT ENO, ENAME FROM PERSONNEL WHERE ENAME=S

ENO	ENAME
2351	SORIANO
3040	SY

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### **B. SQL JOIN QUERIES**

#### **JOIN QUERIES**

SQL that involve in two or more relations = join operations

SIMPLE EQUIJOIN = combinations of all the relations

NATURAL JOIN = Produce a relation with two identical columns. If 2 identical columns is eliminated it is called natural join.

#### 3 TYPES OF JOIN

- **❖** INNER JOIN
- **❖** OUTER JOIN
- **❖** SELF JOIN

#### **EMPLOYEE**

### SALES

ID	NAME	DEPT	MGR
1	Α	ccs	2
2	В	ccs	
3	С	COE	2
4	D	ccs	2
5	E	ccs	2

ID	CODE	QTY_SOLD
1	А	10
1	В	5
3	A	5
3	В	1
3	С	2
3	D	3
4	В	4
4	С	2

10

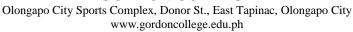
#### **ITEMS**

ID	ITEM	PRICE	QTY
Α	A1	10	10
В	B1	5	10
С	C1	2	10
D	D1	5	10
E	E1	10	10

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#### INNER JOIN

SELECT EMPLOYEE.NAME, SUM
(SALES.QTY\_SOLD) AS
[QUANTITY SOLD]

FROM EMPLOYEE INNER JOIN
SALES ON EMPLOYEE.ID =
SALES.ID

GROUP BY EMPLOYEE.NAME

ORDER BY SUM

(SALES.QTY\_SOLD) DESC

#### **OUTER JOIN**

SELECT EMPLOYEE.NAME,
SUM (SALES.QTY\_SOLD) AS
[QUANTITY SOLD]

FROM EMPLOYEE LEFT JOIN
SALES ON EMPLOYEE.ID =
SALES.ID

GROUP BY EMPLOYEE.NAME

ORDER BY SUM
(SALES.QTY\_SOLD) DESC

#### **SELF JOIN**

SELECT E NAME, M NAME AS MANAGER
FROM EMPLOYEE AS E INNER JOIN EMPLOYEE AS M
ON E MGR = M.ID

#### C. DATABASE ENVIRONMENT

#### **TRANSACTION**

Is defined as a distinct activity within a computer system that reads or modifies the content of a database.

Treating one or more SQL statements as one unit.

There are two types of transaction:

- > FETCH TRANSACTION
- > WRITE TRANSACTION

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#### IV. TEACHING AND LEARNING MATERIALS RESOURCES

- PC Computer || Laptop | Smartphone
- Internet Connection
- Browsers
- Any available Programming Software
- GC-LAMP
- Google Classroom
- Google Meet
- Facebook Group
- Facebook Messenger
- For online activity sites:
  - ✓ <a href="https://www.blogger.com/about/?r=1-null\_user">https://www.blogger.com/about/?r=1-null\_user</a>
  - ✓ https://www.wix.com/html5bing/hiker-

blog?utm\_source=bing&utm\_medium=cpc&utm\_campaign=ms\_en\_e\_1 NEW^bl\_blogging\_rest&experiment\_id=blogging^be^79714673617818^blogging&msclkid=983ab99d6f3e1cb92c8de6b674948445

#### V. LEARNING TASKS

#### A. ENGAGE

Activity 1: Blogging

A blog is a discussion or informational website published on the World Wide Web consisting of discrete, often informal diary-style text entries. Posts are typically displayed in reverse chronological order, so that the most recent post appears first, at the top of the web page.

Materials Needed: PC/Laptop/Smart phone, Internet Connection and Browser

Instruction: Based on your own understanding, kindly define the following terminologies:

- A. DATA DEFINITION LANGUAGE
- B. INTERACTIVE DATA MANIPULATION LANGUAGE
- C. EMBEDDED DATA MANIPULATION LANGUAGE

Your answer will be in a form of a blog. Kindly create your own title for each post. Each post must contain at least 2 to 3 images. Only one blog site per student.

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You can create your blog using the following online sites:

https://www.blogger.com/about/?r=1-null\_user or https://www.wix.com/html5bing/hiker-

blog?utm\_source=bing&utm\_medium=cpc&utm\_campaign=ms\_en\_e\_ \_1\_NEW^bl\_blogging\_rest&experiment\_id=blogging^be^7971467361 7818^blogging&msclkid=983ab99d6f3e1cb92c8de6b674948445

#### Rubric:

Completed the activities and understood the topic based on the given	Outstanding 50 points	Very Good 40 points	Good 30 points	Fair 20 points	No Work Output
answer					

#### **B. EXPLORE & EXPLAIN**

An	swer the following questions:
1.	What are the basic sql expression?
2.	What is the difference between simple equijoin and natural join?
3.	What are the different types of join?
4.	What are the different components of sql structure?

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5. What is the different between write and fetch transaction?						
_		·				
_						<del> </del>
Rubric:						
Each correct	Question 1	Question 2	Question 3	Question 4	Question 5	Total Score
answer will be given						
10 points. Total score						
= 50 points						
_	BORATE & EV					
Answe	r the following			he attributes of	f the relations	dagaribad
in the From		or a predicate	mat mvorves ti	ne attributes of	the relations	uescribeu
in the From		tions of all the	relations			
				nin a compute	er system that	reads or
modifies the	content of a da			<b>I</b>		
	4. A compre	hensive langua	age that has its	own DDL and	d DML compos	nents.
	5. Is used t	to list the attr	ibutes needed	to be include	ed in the outp	ut of the
query.ate sta	tements in que	ry language.				
Rubrics:						
Each correct	Question 1	Question 2	Question 3	Question 4	Question 5	Total Score
answer will						
be given 5						
points. Total score						
= 25 points						

#### VI. **REFERENCES**

- Database System for Management J.F. Courtney, et al. Global Text Project, 2010
- DBMS Tutorial, retrieved from https://www.tutorialspoint.com/dbms/, retrieved on August 5, 2019

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