

## BSc (Hons) in Information Technology - Year 1

#### Lab Sheet 3

#### IT1090 - Information Systems and Data Modeling

Semester 2

**Objective**: At the end of this lab session you should be able to use Aggregate functions with correct syntax.

Furthermore, you will understand where we can use these functions.

# **Aggregate Functions**

### Section 1

What is an Aggregate Function?

An aggregate function performs a calculation on a set of values, and returns a single value. Aggregate functions ignore null values. Aggregate functions allows us to get summarized data from the database.

From a university database, management/external people may require following reports;

- Number of students in the university
- Least cost Course available in the university
- Average marks a student achieved for a particular module in an exam

In order to produce the above reports we need to make use of Aggregate functions. Let's look at some of the Aggregate functions given in Table 1.



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### Lab Sheet 3

## IT1090 – Information Systems and Data Modeling

Semester 2

Function	Description				
COUNT()	Function returns the number of rows that				
	matches a specified criterion.				
SUM()	Function returns the total sum of a numeric				
	column.				
MAX()	Function returns the largest value of the				
	selected column.				
MIN()	Function returns the smallest value of the				
	selected column.				
AVG()	Function returns the average value of a				
	numeric column.				
ROUND()	used to round the value up to a specific				
	decimal places				
FIRST()	Returns the first value in a column.				
LAST()	Returns the last value in a column.				

Table 1



## BSc (Hons) in Information Technology - Year 1

#### Lab Sheet 3

### IT1090 - Information Systems and Data Modeling

Semester 2

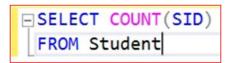
## Section 2

#### Example

a. How many students are in the university?

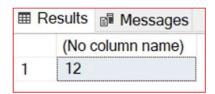
#### Step 01

Now you must count the amount of entries in the Student table,



### Step 02

Then answer is like this,



You can check this answer using select(\*) from Student quarry,

	SID	Sname	Address	dob	NIC	CID		
1	CN18384756	Kamal	No122, Rose street, matale	1994-05-02	946785467v	CSNE		
2	CN19465738	Sampath	No173, New kandy Road, kaduwella	1996-11-20	968764567v	CSNE		
3	CS18223645	kalani	No08, Gamini Road, Anuradhapura	1996-10-11	968564857v	CS		
4	CS18234867	Damith	No125, 1st street, kurunegala	1996-02-15	968763456v	CS		
5	DS18234876	Pubudu	No678, 3rd new lane, Maharahgama	1994-11-08	948763759v	DS		
6	DS18375688	Kamani	No10, new street, jaffna	1994-03-05	948763456v	DS		12 entri
7	IS18758649	Jayni	No111, Perera street, kurunegala	1998-09-07	982359856v	ISE		
8	IS19234876	Dulina	No124, 2nd street, colombo10	1998-12-08	983485764v	ISE		
9	IT18234568	Ann	No12, Kings street, colombo	1996-11-11	961234587v	IT		
10	IT19275687	Rayan	No14, flower street, colombo12	1994-01-10	945673456v	IT		
11	SE19238567	Malith	No08, st.thomas street, Kandy	1992-12-20	922356785v	SE		
12	SE20284567	Pooja	No15, lakshmi Road, jaffna	1996-08-07	965678645v	SE		



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Semester 2

#### Exercise

- a. How many students are in the university? 12
- b. How many courses are offered by the university?  $^{6}_{\substack{\text{SELECT COUNT(CID)}\\ \text{FROM Course};}}$
- c. Display the above result with the title "Number of courses". SELECT COUNT(CID) AS 'Number of courses FROM Course;
- d. How many modules are there which have 03 credits only? SELECT COUNT(NoOfCredits) FROM Module WHERE NoOfCredits=3;
- e. If one student wants to register all courses at ones, what is the total course fee that he/she wants to pay? 1004000 SELECT SUM(C\_fee) FROM Course;
- f. What is the highest course fee?
- g. What is the lowest course fee? 145000 SELECT MIN(C\_fee)
- h. What is the Average courses fee of a course? SELECT AVG(C\_fee) FROM Course;