

functions to queries

Aim:

To implement of DML commands using  
functions, operators and functions in queries

## Data manipulation language (DML)

The data manipulation language  
is using to retrieve, insert and modify  
database information. These commands  
will be used by all database  
users during the routine operation  
of the database. Let's take a brief look  
of the basic

DML commands:

1. Insert
2. UPDATE
3. DELETE

Insert into

This is used to add records into a  
collection

Syntax

Insert into <table name>(field1, field2...  
fieldN) values (data1, data2... dataN);

Example

Insert into patients Values(111, 'Arun',  
'cardiology'), ('mala')

## Table After Insert

PatientID	PatientName	Department	gender
111	Arun	cardiology	Male

update - set - where:

This is used to update the row(s) of a record in a relation.

Syntax SQL:

update table-name set field = data  
where condition;

Eg:

Update ~~patients~~ set patientName = 'Kuncer'  
~~where~~ patientID = 111;

Table after update:

PatientID	PatientName	Department	gender
111	Kuncer	cardiology	Male

Delete from:

This is used to delete all records of all relation but it retains the structure.

Syntax

Delete from table-name:

Example

Delete from Appointments

Appointments Table after Delete:

AppointmentID	PatientID	ProductID	Appoint	Product
-	-	-	-	-

Delete from where

This is used to delete specific records from a deletion

Example

Delete from ~~where~~ <sup>Doctor</sup> products where DoctorID = 202;

Doctor Table after

DoctorID	DoctorName	Department	Fees
201	Dr. Shoaib	Cardiology	1000
203	Dr. Ahmed	Neurology	900
204	Dr. Rejesh	Osteopedia	600
205	Dr. Nekar	Dermatology	800

Truncate

This removes all data permanently but keeps the table structure

Example

Truncate Table patients;

## Patients Table after Create

PatientID	PatientName	Department	gender

Sample queries and output

1. Retrieve patient names ending with letter 'n' and patient no between 111 and 115

Queries

Select PatientName, Department, gender

From patients

where PatientName Like '%n' And Patient Between 111 and 115

PatientName	Department	Gender
Aren	cardiology	Male
Karen	Gastroenterology	Male
Rohan	Dermatology	Male

2. List doctors where consultation fees between 700 and 800

sql

Select \* from Doctors where Fees Between 700 and 800:

DoctorID	DoctorName	Department	Fee
202	Dr. Parikh	Pediatrics	700
205	Dr. Nehru	Oncology	800

3. Find the record with minimum appointment duration

select min(AppointmentDuration) from Appointments;

min(AppointmentDuration)
20

4. Find Appointments with Date  $\geq$  "2023-02-07"

select \* from Appointments where  
~~Appointments Date >= "2023-02-07"~~

Appointment ID	PatientID	DoctorID	ApptDate	Duration
302	102	203	2023-02-09	45
303	103	204	2023-02-09	20
304	104	202	2023-02-10	60
305	105	205	2023-02-12	25

5. List distinct patient

Query:

Select distinct PatientID from Patients.

PatientID
111
112
113
114
115

6. combine patient IDs from patients  
and Appointments(UNION)

Query:

~~Select PatientID from patients  
UNION Select PatientID from  
Appointments~~

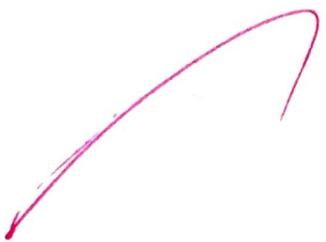
~~Output:~~

PatientID
111
112
113
114
115

7. Group patients based on gender and  
department areas

Select Department, gender, count(\*) AS  
total patients from patients group by

Department	Gender	Total patient
cardiology	Male	1
neurology	Female	1
orthopedic	Male	1
Pediatrics	Female	1
Dermatology	Male	1



VEL TECH - CSI	
EX NO.	3.1
PERFORMANCE (5)	5
RESULT AND ANALYSIS (5)	5
VIVA VOCE (5)	4
RECORD (5)	—
TOTAL (20)	14
SIGN WITH DATE	✓

18/08/2023

Present:

The implementation of DML concrete  
resolving clauses, and functions in queries  
executed successfully.

# Aggregate Functions

Aim:

To study and implement aggregate functions (count(), sum(), avg(), min(), max()), on a sample patient database.

Procedure

1. Create a table name `patients`
2. Insert sample records
3. Write queries using aggregate functions
4. observe and record the output

Commands with explanation:

Example table: Patients

PatientId	PatientName	Department	Billed
101	Aashu	Cardiology	2000
102	Sneha	Neurology	3500
103	Karen	Ophthalmics	1500
104	Meena	Pediatrics	4000
105	Rahul	Dermatology	2000

1) count the total number of patients

SQL  
select count(\*) AS Total\_patients

From patients

Total - Patients

2) Find the highest bill amount

Select Max(Bill Amount) as Highest\_Bill  
From Patients;

Output:

Highest-Bill
4000

3. Find the average bill amount of patients

Select Avg(Bill Amount) As Average-Bill  
From Patients

Output:

Average-Bill :
2700

4. Find the minimum bill amount among  
patients in Neurology department

Select Min(Bill amount) As Min\_Neuro\_Bill

Min_Neuro-Bill
3500

5. Find the total bill by each  
department

Select Department, sum(Bill Amount), as  
Total\_Bill From patients group by  
Department;

Department	Total Bill
Cardiology	2000
Nephrology	3500
Otorhinolaryngology	1500
Pediatrics	4000
Reumatology	

✓

VEL TECH - CSE	
EX NO.	32
PERFORMANCE (5)	5
RESULT AND ANALYSIS (5)	5
VIVA VOCE (5)	5
RECORD (5)	5
TOTAL (20)	15
DATE WITH DATE	10/8/17

✓

• ~~Present~~: implementation

✓ The ~~implementation~~ of aggregate functions are executed successfully.