

## **Practical 4**

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**Roll Number: A-58**

**Aim:** Data Entry: Data Entry on to Tables, Alteration of table structure of alteration of scheme based on requirement. Data validation against use cases and test cases.

### **Theory:**

SQL is a programming language designed to manage data stored in a relational database management system (RDBMS).

SQL stands for the structured query language.

Project topic: College Management System

Total no of tables: 2

About: Syntax

#### ***1. Create table Syntax***

Create table table\_name

(

Column1 datatype,

Column2 datatype,

Column3 datatype,

.....

);

#### ***2. ALTER TABLE syntax***

ALTER TABLE table\_name

ADD column\_name datatype;

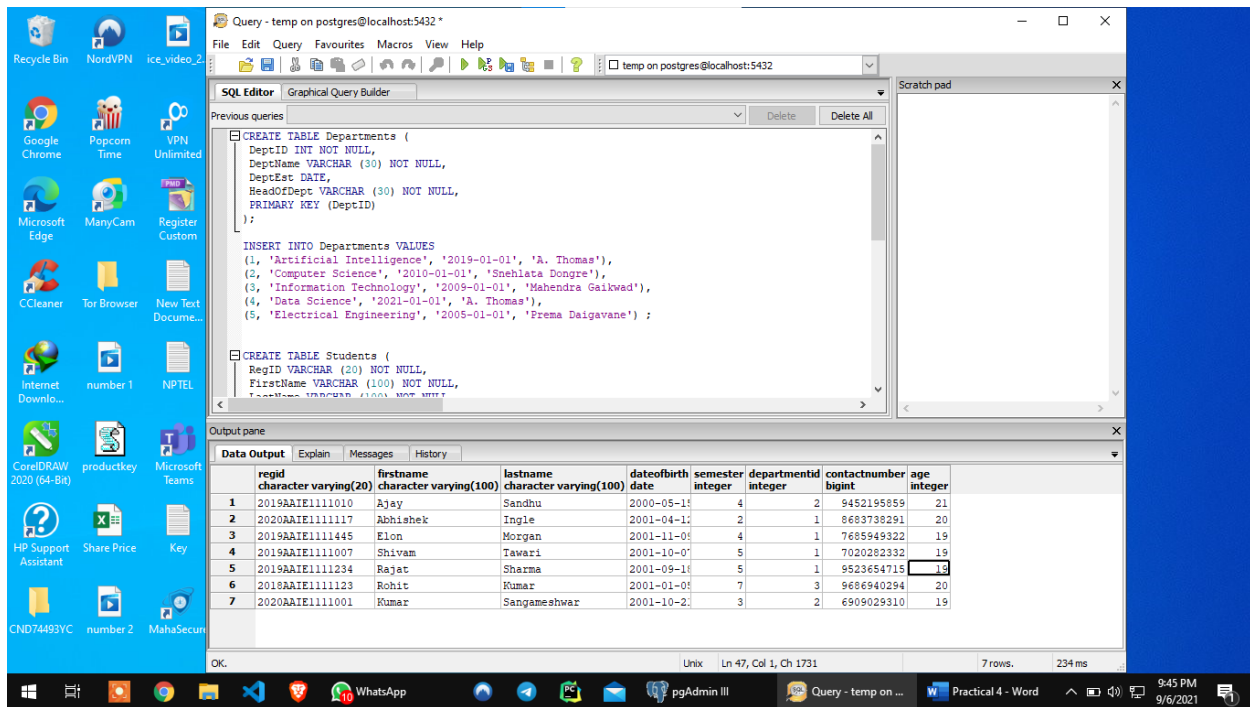
#### ***3. DROP TABLE syntax***

DROP TABLE table\_name;

#### ***4. INSERT RECORD syntax***

INSERT INTO table\_name(column1,column2,column3,...);

## Program/Queries:



Query - temp on postgres@localhost:5432 \*

File Edit Query Favourites Macros View Help

temp on postgres@localhost:5432

SQL Editor Graphical Query Builder

Previous queries Delete Delete All

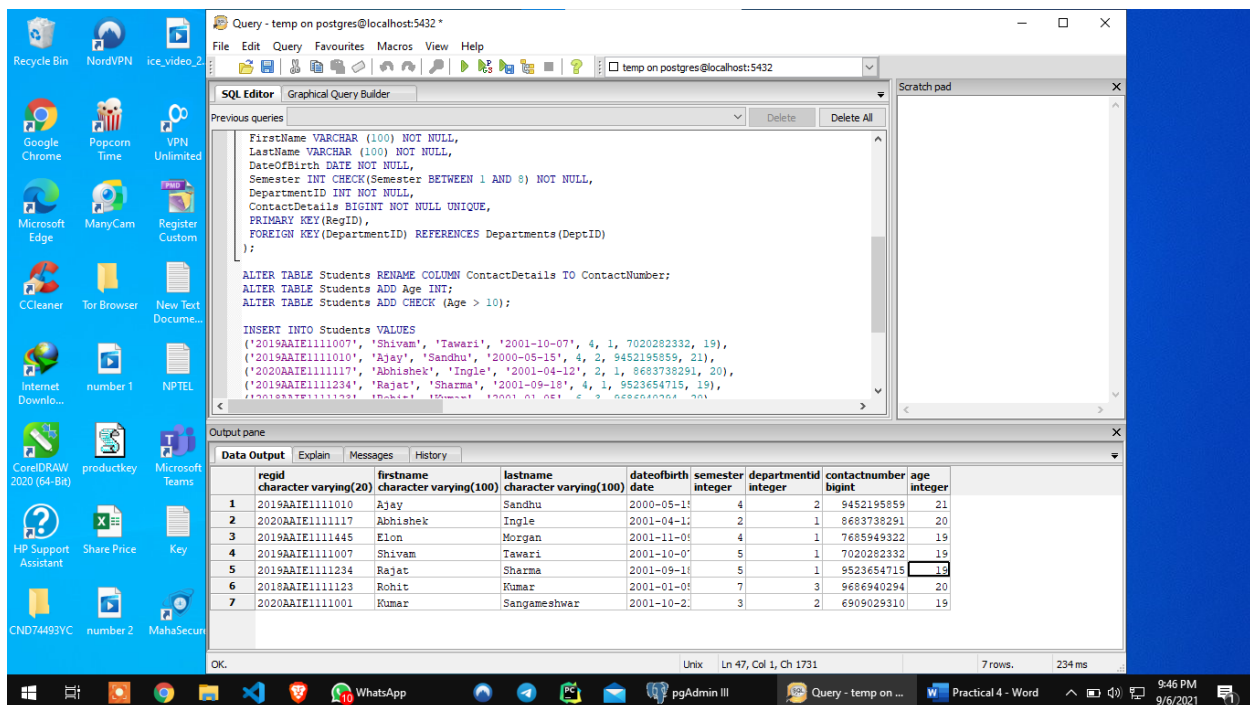
```
CREATE TABLE Departments (  
  DeptID INT NOT NULL,  
  DeptName VARCHAR (30) NOT NULL,  
  DeptEst DATE,  
  HeadOfDept VARCHAR (30) NOT NULL,  
  PRIMARY KEY (DeptID)  
);  
  
INSERT INTO Departments VALUES  
(1, 'Artificial Intelligence', '2019-01-01', 'A. Thomas'),  
(2, 'Computer Science', '2010-01-01', 'Snehlata Dongre'),  
(3, 'Information Technology', '2009-01-01', 'Mahendra Gaikwad'),  
(4, 'Data Science', '2021-01-01', 'A. Thomas'),  
(5, 'Electrical Engineering', '2005-01-01', 'Prema Daigavane');
```

Output pane

Data Output Explain Messages History

	regid character varying(20)	firstname character varying(100)	lastname character varying(100)	dateofbirth date	semester integer	departmentid integer	contactnumber bigint	age integer
1	2019AAIE1111010	Ajay	Sandhu	2000-05-15	4	2	9452195859	21
2	2020AAIE1111117	Abhishek	Ingle	2001-04-12	2	1	8683738291	20
3	2019AAIE1111445	Elon	Morgan	2001-11-05	4	1	7685949322	19
4	2019AAIE1111007	Shivam	Tawari	2001-10-07	5	1	7020282332	19
5	2019AAIE1111234	Rajat	Sharma	2001-09-18	5	1	9523654715	19
6	2018AAIE1111123	Rohit	Kumar	2001-01-05	7	3	9686940294	20
7	2020AAIE1111001	Kumar	Sangameshwar	2001-10-2	3	2	6909029310	19

OK. Unix Ln 47, Col 1, Ch 1731 7 rows. 234 ms



Query - temp on postgres@localhost:5432 \*

File Edit Query Favourites Macros View Help

temp on postgres@localhost:5432

SQL Editor Graphical Query Builder

Previous queries Delete Delete All

```
FirstName VARCHAR (100) NOT NULL,  
LastName VARCHAR (100) NOT NULL,  
DateOfBirth DATE NOT NULL,  
Semester INT CHECK(Semester BETWEEN 1 AND 8) NOT NULL,  
DepartmentID INT NOT NULL,  
ContactDetails BIGINT NOT NULL UNIQUE,  
PRIMARY KEY(RegID),  
FOREIGN KEY(DepartmentID) REFERENCES Departments (DeptID)  
);  
  
ALTER TABLE Students RENAME COLUMN ContactDetails TO ContactNumber;  
ALTER TABLE Students ADD Age INT;  
ALTER TABLE Students ADD CHECK (Age > 10);  
  
INSERT INTO Students VALUES  
(2019AAIE1111007, 'Shivam', 'Tawari', '2001-10-07', 4, 1, 7020282332, 19),  
(2019AAIE1111010, 'Ajay', 'Sandhu', '2000-05-15', 4, 2, 9452195859, 21),  
(2020AAIE1111117, 'Abhishek', 'Ingle', '2001-04-12', 2, 1, 8683738291, 20),  
(2019AAIE1111234, 'Rajat', 'Sharma', '2001-09-18', 4, 1, 9523654715, 19),  
(2018AAIE1111123, 'Rohit', 'Kumar', '2001-01-05', 7, 3, 9686940294, 20),  
(2020AAIE1111001, 'Kumar', 'Sangameshwar', '2001-10-2', 3, 2, 6909029310, 19);
```

Output pane

Data Output Explain Messages History

	regid character varying(20)	firstname character varying(100)	lastname character varying(100)	dateofbirth date	semester integer	departmentid integer	contactnumber bigint	age integer
1	2019AAIE1111010	Ajay	Sandhu	2000-05-15	4	2	9452195859	21
2	2020AAIE1111117	Abhishek	Ingle	2001-04-12	2	1	8683738291	20
3	2019AAIE1111445	Elon	Morgan	2001-11-05	4	1	7685949322	19
4	2019AAIE1111007	Shivam	Tawari	2001-10-07	5	1	7020282332	19
5	2019AAIE1111234	Rajat	Sharma	2001-09-18	5	1	9523654715	19
6	2018AAIE1111123	Rohit	Kumar	2001-01-05	7	3	9686940294	20
7	2020AAIE1111001	Kumar	Sangameshwar	2001-10-2	3	2	6909029310	19

OK. Unix Ln 47, Col 1, Ch 1731 7 rows. 234 ms

The screenshot shows a PostgreSQL SQL Editor window titled "Query - temp on postgres@localhost:5432". The SQL Editor contains the following queries:

```

ALTER TABLE Students RENAME COLUMN ContactDetails TO ContactNumber;
ALTER TABLE Students ADD Age INT;
ALTER TABLE Students ADD CHECK (Age > 10);

INSERT INTO Students VALUES
('2019AAIE1111007', 'Shivam', 'Tawari', '2001-10-07', 4, 1, 7020282332, 19),
('2019AAIE1111010', 'Ajay', 'Sandhu', '2000-05-15', 4, 2, 9452195559, 21),
('2020AAIE1111111', 'Abhishek', 'Ingle', '2001-04-12', 2, 1, 8683738291, 20),
('2019AAIE1111234', 'Rajat', 'Sharma', '2001-09-18', 4, 1, 9523654715, 19),
('2018AAIE1111123', 'Rohit', 'Kumar', '2001-01-05', 6, 3, 9686940294, 20),
('2019AAIE1111445', 'Elon', 'Morgan', '2001-11-09', 4, 1, 7685949322, 19),
('2020AAIE1111001', 'Rumar', 'Sangameshwar', '2001-10-21', 2, 2, 6909029310, 19);

UPDATE Students SET Semester = Semester + 1
Where RegID in ('2019AAIE1111007', '2020AAIE1111001', '2018AAIE1111123', '2019AAIE1111234');

SELECT * FROM Students;

```

The Output pane shows the result of the SELECT query, displaying 7 rows of student data:

	regid character varying(20)	firstname character varying(100)	lastname character varying(100)	dateofbirth date	semester integer	departmentid integer	contactnumber bigint	age integer
1	2019AAIE1111010	Ajay	Sandhu	2000-05-15	4	2	9452195559	21
2	2020AAIE1111111	Abhishek	Ingle	2001-04-12	2	1	8683738291	20
3	2019AAIE1111445	Elon	Morgan	2001-11-09	4	1	7685949322	19
4	2019AAIE1111007	Shivam	Tawari	2001-10-07	5	1	7020282332	19
5	2019AAIE1111234	Rajat	Sharma	2001-09-18	5	1	9523654715	19
6	2018AAIE1111123	Rohit	Kumar	2001-01-05	7	3	9686940294	20
7	2020AAIE1111001	Rumar	Sangameshwar	2001-10-21	3	2	6909029310	19

The status bar at the bottom indicates "OK", "Unix", "Ln 26, Col 39, Ch 826", "7 rows", and "234 ms".

**Conclusion:** Hence, we have learnt and performed insertion of record into the table, update record, alter the table using PostgreSQL.