

Project: Student Database Management System (PostgreSQL)

1) Database setup

CREATE DATABASE

WITH

OWNER = postgres

ENCODING = 'UTF8'

LC_COLLATE = 'English_United States.1252'

LC_CTYPE = 'English_United States.1252'

TABLESPACE = pg_default

CONNECTION LIMIT = -1;

a) Create student database:	b) Student table creation:
<pre>CREATE DATABASE student_database WITH OWNER = postgres ENCODING = 'UTF8' LC_COLLATE = 'English_United States.1252' LC_CTYPE = 'English_United States.1252' TABLESPACE = pg_default CONNECTION LIMIT = -1;</pre>	<pre>CREATE TABLE Student_table (Student_id INT, Stu_name VARCHAR(100), Department VARCHAR(50), Email_id VARCHAR(50), Phone_no NUMERIC, Address VARCHAR(250), Date_Of_Birth DATE, Gender VARCHAR(30), Major VARCHAR(50), GPA NUMERIC, Grade VARCHAR(10));</pre>

2) Data entry

INSERT INTO Student_table (Student_id, Stu_name, Department, email_id, Phone_no, Address, Date_Of_Birth, Gender, Major, GPA, Grade)

VALUES

('1', 'Jayashree Ravi', 'Business', 'Jayashree@gmail.com', '9999999991', 'Delhi', '1999-04-26', 'Female', 'MBA', '8.8', 'A'),

('2', 'Nizam Khan', 'Arts and Sciences', 'Nizam@gmail.com', '9999999992', 'Bangalore', '1992-07-15', 'Male', 'Mathematics', '8.6', 'A'),

('3', 'Ranjith Kumar', 'Business', 'Ranjith@gmail.com', '9999999993', 'Delhi', '1995-06-28', 'Male', 'MBA', '8.5', 'A'),

('4', 'Parthiban Leo', 'Arts and Sciences', 'ParthiLeo@gmail.com', '9999999994', 'Dehradun', '1997-01-12', 'Male', 'Physics', '7.6', 'B'),

('5', 'Reshma Roy', 'Arts and communication', 'Reshma@gmail.com', '9999999995', 'Mumbai', '1995-10-26', 'Female', 'Communication', '6.9', 'B'),

('6', 'Shivani Krishnan', 'Arts and Sciences', 'Shivani@gmail.com', '9999999996', 'Goa', '2000-01-03', 'Female', 'Computer Science', '5.5', 'C'),

('7', 'Himanshu Gupta', 'Human Development', 'Himanshu@gmail.com', '9999999997', 'Indore', '2000-10-05', 'Male', 'Counseling', '7.0', 'B'),
 ('8', 'Pranesh Yadav', 'Arts and communication', 'Pranesh@gmail.com', '9999999998', 'Pune', '1999-11-16', 'Male', 'Theatre', '9.2', 'A'),
 ('9', 'Sarath Kumar', 'Business', 'Sarathk@gmail.com', '9999999999', 'Udaipur', '2003-08-14', 'Male', 'Accounting', '7.9', 'B'),
 ('10', 'Sonya Agarwal', 'Arts and Sciences', 'Sonya@gmail.com', '9999999911', 'Mumbai', '1997-03-12', 'Female', 'Physics', '4.9', 'C');

3) Student information retrieval

```
SELECT *
FROM Student_table
ORDER BY GPA DESC, Grade;
```

	student_id integer	stu_name character varying (11)	department character varying (50)	email_id character varying (50)	phone_no numeric	address character varying (250)	date_of_birth date	gender character varying (10)	major character varying (50)	gpa numeric	grade character varying (10)
1	8	Pranesh Yadav	Arts and communication	Pranesh@gmail.com	9999999998	Pune	1999-11-16	Male	Theatre	9.2	A
2	1	Jayashree Ravi	Business	Jayashree@gmail.com	9999999991	Delhi	1999-04-26	Female	MBA	8.8	A
3	2	Nizam Khan	Arts and Sciences	Nizam@gmail.com	9999999992	Bangalore	1992-07-15	Male	Mathematics	8.6	A
4	3	Ranjith Kumar	Business	Ranjith@gmail.com	9999999993	Delhi	1995-06-28	Male	MBA	8.5	A
5	9	Sarath Kumar	Business	Sarathk@gmail.com	9999999999	Udaipur	2003-08-14	Male	Accounting	7.9	B
6	4	Parthiban Leo	Arts and Sciences	ParthiLeo@gmail.com	9999999994	Dehradun	1997-01-12	Male	Physics	7.6	B
7	7	Himanshu Gupta	Human Development	Himanshu@gmail.com	9999999997	Indore	2000-10-05	Male	Counseling	7.0	B
8	5	Reshma Roy	Arts and communication	Reshma@gmail.com	9999999995	Mumbai	1995-10-26	Female	Communication	6.9	B
9	6	Shivani Krishnan	Arts and Sciences	Shivani@gmail.com	9999999996	Goa	2000-01-03	Female	Computer Science	5.5	C
10	10	Sonya Agarwal	Arts and Sciences	Sonya@gmail.com	9999999911	Mumbai	1997-03-12	Female	Physics	4.9	C

4) Query for Male students

```
Select * from Student_table
where Gender = 'Male';
```

	student_id integer	stu_name character varying (11)	department character varying (50)	email_id character varying (50)	phone_no numeric	address character varying (250)	date_of_birth date	gender character varying (10)	major character varying (50)	gpa numeric	grade character varying (10)
1	2	Nizam Khan	Arts and Sciences	Nizam@gmail.com	9999999992	Bangalore	1992-07-15	Male	Mathematics	8.6	A
2	3	Ranjith Kumar	Business	Ranjith@gmail.com	9999999993	Delhi	1995-06-28	Male	MBA	8.5	A
3	4	Parthiban Leo	Arts and Sciences	ParthiLeo@gmail.com	9999999994	Dehradun	1997-01-12	Male	Physics	7.6	B
4	7	Himanshu Gupta	Human Development	Himanshu@gmail.com	9999999997	Indore	2000-10-05	Male	Counseling	7.0	B
5	8	Pranesh Yadav	Arts and communication	Pranesh@gmail.com	9999999998	Pune	1999-11-16	Male	Theatre	9.2	A
6	9	Sarath Kumar	Business	Sarathk@gmail.com	9999999999	Udaipur	2003-08-14	Male	Accounting	7.9	B

5) Query for Students with GPA less than 5.0

```
SELECT *
FROM Student_table
WHERE GPA <5.0;
```

	student_id integer	stu_name character varying (11)	department character varying (50)	email_id character varying (50)	phone_no numeric	address character varying (250)	date_of_birth date	gender character varying (10)	major character varying (50)	gpa numeric	grade character varying (10)
1	10	Sonya Agarwal	Arts and Sciences	Sonya@gmail.com	9999999911	Mumbai	1997-03-12	Female	Physics	4.9	C

6) Update Student Email and Grade

```
UPDATE Student_table  
SET email_id = 'Sanyaa@gmail.com', Grade = 'D'  
WHERE Student_id = '10';
```

UPDATE 1

Query returned successfully in 104 msec.

7) Query for Students with Grade "B"

```
SELECT Stu_name, date_part('year',age(Date_Of_Birth)) as Age  
FROM Student_table  
Where Grade = 'B';
```

	stu_name character varying (100) 🔒	age double precision 🔒
1	Parthiban Leo	27
2	Reshma Roy	28
3	Himanshu Gupta	23
4	Sarath Kumar	21

8) Grouping and calculation

```
SELECT Department, Gender, Avg(GPA)  
FROM Student_table  
GROUP BY 1,2;
```

	department character varying (50) 🔒	gender character varying (30) 🔒	avg numeric 🔒
1	Business	Male	8.2000000000000000
2	Arts and communication	Female	6.9000000000000000
3	Business	Female	8.8000000000000000
4	Arts and Sciences	Male	8.1000000000000000
5	Arts and communication	Male	9.2000000000000000
6	Human Development	Male	7.0000000000000000
7	Arts and Sciences	Female	5.2000000000000000

9) Table Renaming

```
ALTER TABLE Student_table  
RENAME TO Student_info;  
SELECT * FROM Student_info;
```

	student_id integer	stu_name character varying (100)	department character varying (50)	email_id character varying (50)	phone_no numeric	address character varying (255)	date_of_birth date	gender character varying (10)	major character varying (50)	gpa numeric	grade character varying (10)
1	1	Jayashree Ravi	Business	Jayashree@gmail.com	9999999991	Delhi	1999-04-26	Female	MBA	8.8	A
2	2	Nizam Khan	Arts and Sciences	Nizam@gmail.com	9999999992	Bangalore	1992-07-15	Male	Mathematics	8.6	A
3	3	Ranjith Kumar	Business	Ranjith@gmail.com	9999999993	Delhi	1995-06-28	Male	MBA	8.5	A
4	4	Parthiban Leo	Arts and Sciences	ParthiLeo@gmail.com	9999999994	Dehradun	1997-01-12	Male	Physics	7.6	B
5	5	Reshma Roy	Arts and communication	Reshma@gmail.com	9999999995	Mumbai	1995-10-26	Female	Communication	6.9	B
6	6	Shivani Krishnan	Arts and Sciences	Shivani@gmail.com	9999999996	Goa	2000-01-03	Female	Computer Science	5.5	C
7	7	Himanshu Gupta	Human Development	Himanshu@gmail.com	9999999997	Indore	2000-10-05	Male	Counseling	7.0	B
8	8	Pranesh Yadav	Arts and communication	Pranesh@gmail.com	9999999998	Pune	1999-11-16	Male	Theatre	9.2	A
9	9	Sarath Kumar	Business	Sarathk@gmail.com	9999999999	Udaipur	2003-08-14	Male	Accounting	7.9	B
10	10	Sonya Agarwal	Arts and Sciences	Sanyaa@gmail.com	9999999911	Mumbai	1997-03-12	Female	Physics	4.9	D

10) Retrieve Student with Highest GPA

```
SELECT Stu_name, GPA
FROM Student_info WHERE GPA = (Select Max(GPA) From Student_info);
```

	stu_name character varying (100)	gpa numeric
1	Pranesh Yadav	9.2