LEAVE MANAGEMENT SYSTEM
GROUP-11
15CSE302: Database and Management System

TEAM MEMBERS:

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<u>ABSTRACT</u>

In the existing Leave Management System, every College/Department follows the manual procedure in which faculty enters information in a record book. At the end of each month/session, Administration Department calculates leave(s) of every member which is a time taking process and there is the chance of losing data or errors in the records.

The project's main idea is to develop an online centralized application connected to a database that can be accessed throughout the organization or a specific group/Dept. This system can be used to automate the workflow of leave applications and their approvals. The periodic crediting of leave is also automated. There are features like notifications, cancellation of leave, automatic approval of leave, report generators etc. Leave Management application will reduce paperwork and maintain a record in a more efficient and systematic way.

Following is a list of functionalities of the system:

1. A **user** should be able to

- view message sent by the admin
- Log in to the system through the first page of the application
- change the password after logging into the system
- see his/her eligibility   details (like how many days of leave he/she is eligible for etc)
- see his/her leave history since the time he/she joined the college
- apply for leave, specifying the from and to dates, reason for taking leave
- see his/her current leave applications and the leave applications that are submitted to him/her for approval or cancellation
- withdraw his/her leave application (which has not been approved yet)
- logout

2. An **admin** should be able to

- Log in to the system through the first page of the application
- Remove/Add/Update a staff   detail
- Accept/Reject the leave applications that are submitted to him/her
- view details of all staffs and their leave information

- send message to a particular staff or all the staffs
- logout

The modules involved are:

Register:

One user has to register on this interface with its actual data to be filled and applied in the same interface, then press enters to be saved in the database. Further, move to log in.

Login:

The user inputs its secure user id and password and enters the system. User can log in multiple times as many times as he/she wants.

Leave apply:

Here is the module for applying for leave to the interface. One has to enter his details about the leave like the reason for the leave. Choose the dates of the leave.

Live review:

After successful application of the leave application will come under scrutiny done by an admin. According to his need, he will review it and take necessary action in the next module.

Leave approval:

Here admin approves the leave or not is reflected by admin to the users. Here all the real-time update will be shown to the users. Users can see only their own leave request there.

Log out:

In the end, the user can log out the system to release the resources held for the purpose of anything else.
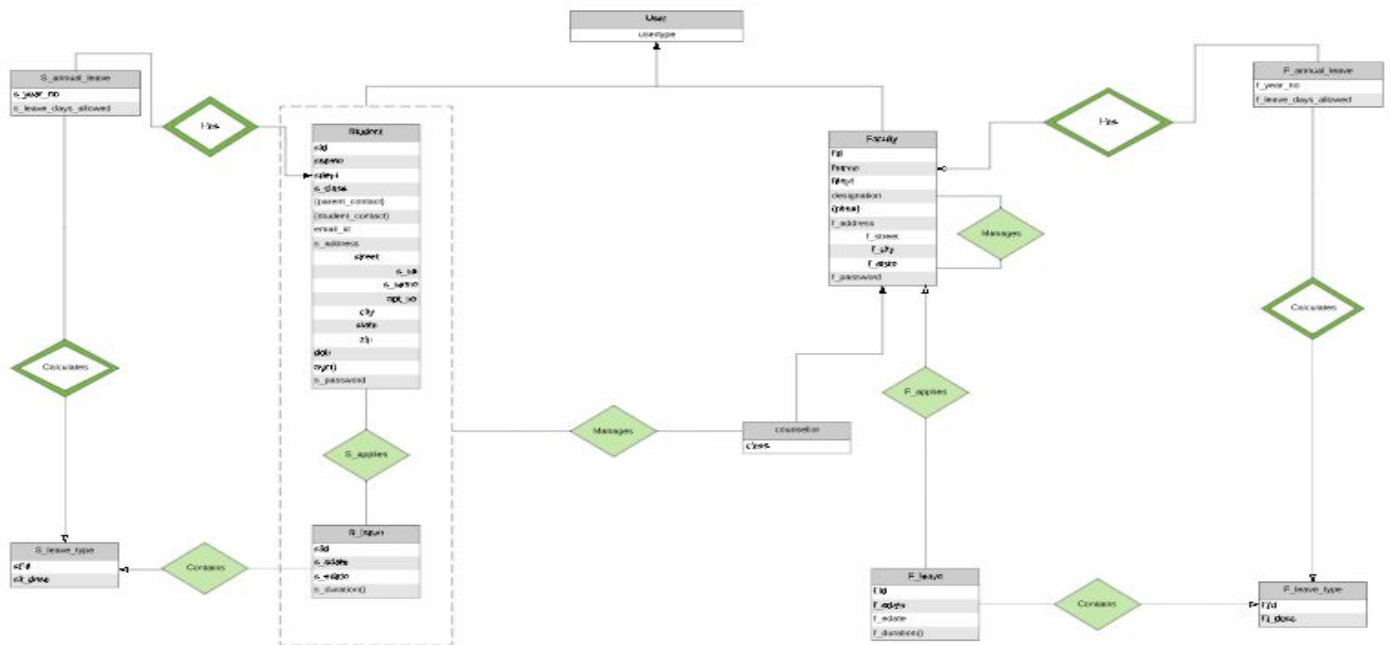
Technologies used:

- Databases (PostgreSQL)
- User Interface

- Programming (Java)

Platform used:

- Eclipse or NetBeans
- Android Studio

ER DIAGRAM

RELATIONAL SCHEMA

Student(**sid**, sname,sdept, s_class, parent_contact, student_contact, email_id, s_address, dob, age, s_password)

s_applies(**sid, slid**)

S_leave(**slid**, sltid, s_sdate, s_edate, s_duration)

S_annual_leave(**sid, sltid, s_year_no**, s_leave_days_allowed)

S_leave_type(**sltid**, slt_desc)
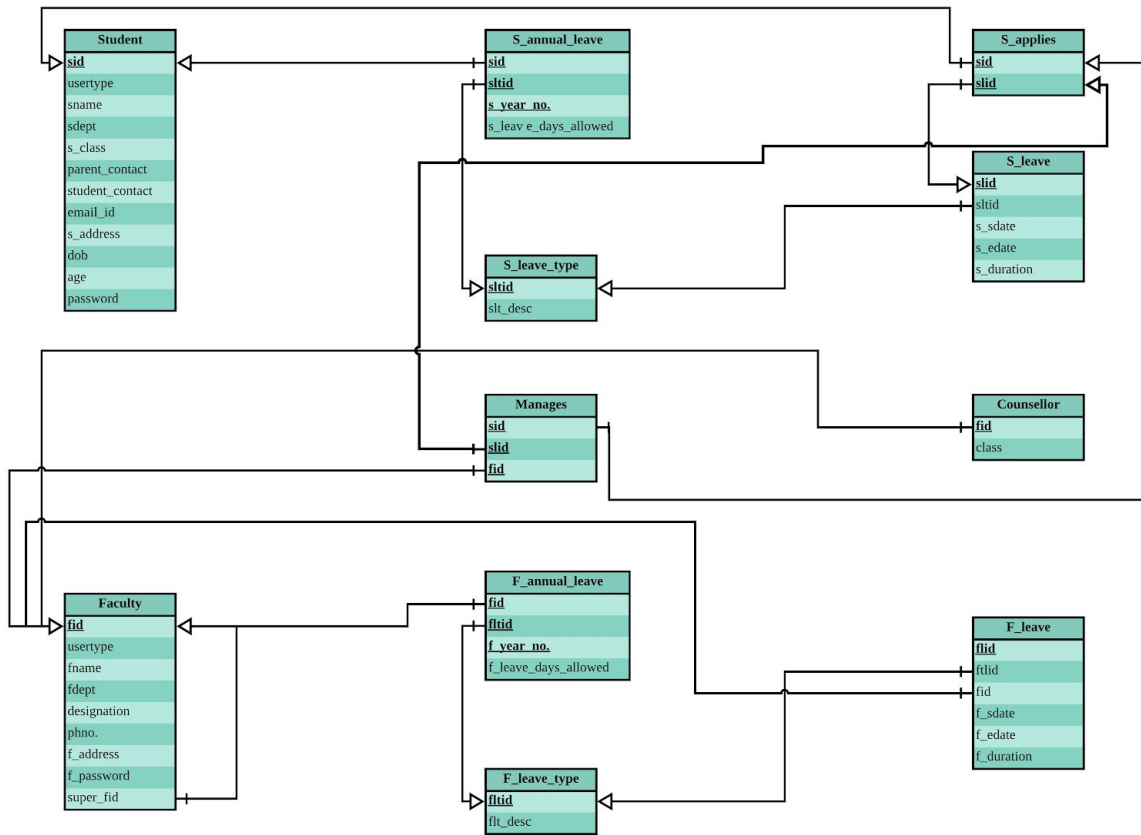
f_manages(**sid, slid, fid**)

Faculty(**fid**, fname, fdept, designation, phno, f_address, f_password, super_fid)

F_leave(**flid**, fid, fltid, f_sdate, f_edate, f_duration)

F_annual_leave(**fid, fltid, f_year_no**, f_leave_days_allowed)

F_leave_type(**fltid**, flt_desc)

SCHEMA DIAGRAM

Student
- sid
- usertype
- sname
- sdept
- s_class
- parent_contact
- student_contact
- email_id
- s_address
- dob
- age
- password

S_annual_leave
- sid
- sltid
- s_year_no.
- s_leav e_days_allowed

S_applies
- sid
- slid

S_leave
- slid
- sltid
- s_sdate
- s_edate
- s_duration

S_leave_type
- sltid
- slt_desc

Manages
- sid
- slid
- fid

Counsellor
- fid
- class

Faculty
- fid
- usertype
- fname
- fdept
- designation
- phno.
- f_address
- f_password
- super_fid

F_annual_leave
- fid
- fltid
- f_year_no.
- f_leave_days_allowed

F_leave
- flid
- ftlid
- fid
- f_sdate
- f_edate
- f_duration

F_leave_type
- fltid
- flt_desc

FIRST NORMALIZATION FORM

Leave(<u>slid</u>, sid, sname, s_class, parent_contact, student_contact, s_address, dob, age, s_password, sltid, slt_desc, s_sdate, s_edate, s_duration, s_year_no, s_leaves_allowed, fid, fname, fdept, designation, phno, f_address, usertype, f_password, super_fid, class, f_sdate, f_edate, f_duration, f_year_no, f_leave_days_allowed, flt_desc)

SECOND NORMALIZATION FORM

Student(<u>sid</u>, sname, sdept, s_class, parent_contact, student_contact, email_id, s_address, dob, age, s_password**)**

S_Leave(<u>slid</u>, s_sdate, s_edate, s_duartion, sltid, slt_desc**)**

s_applies(<u>sid</u>, <u>slid</u>)

Faculty(<u>fid</u>, fname, fdept, designation, phno, f_address, f_password, super_fid, class**)**

F_Leave(<u>flid</u>, f_sdate, f_edate, f_duration, <u>fltid</u>, flt_desc, <u>fid</u>**)**

f_manages(<u>sid, slid, fid</u>**)**

F_Leave_Type(<u>fid</u>, <u>fltid</u>, f_year_no, f_leave_days_allowed**)**

S_Leave_Type(<u>sid</u>, <u>sltid</u>, s_year_no, s_leave_days_allowed**)**

THIRD NORMALIZATION FORM

Student(<u>sid</u>, sname, sdept, s_class, parent_contact, student_contact, email_id, s_address, dob, age, s_password**)**

S_Leave(<u>slid</u>, s_sdate, s_edate, s_duartion, sltid**)**

S_Leave_Type(<u>sltid</u>**,** slt_desc**)**

S_applies(<u>sid</u>, <u>slid</u>**)**

Faculty(<u>fid</u>, fname, fdept, designation, phno, f_address, f_password, super_fid, class**)**

F_Leave(<u>flid</u>, f_sdate, f_edate, f_duration, <u>fltid</u>, <u>fid</u>**)**

F_Leave_Type(<u>fltid</u>**,** flt_desc**)**

f_manages(<u>sid, slid, fid</u>**)**

F_Annual_Leave(<u>fid</u>, <u>fltid</u>, f_year_no, f_leave_days_allowed**)**

S_Annual_Leave(<u>sid</u>, <u>sltid</u>, s_year_no, s_leave_days_allowed**)**

<u>COMPARISON</u>

There was no difference between the tables of Relational scheme and the tables of Third normalization form. Ten tables were created in total from both ER Diagram and from the Second Normalization Form.

DDL COMMANDS

CREATE COMMANDS

➢ **Student**

```
create table Student(
        sid varchar(10) primary key,
        sname varchar(20) not null,
        sdept varchar(5),
        s_class varchar(5),
        parent_contact varchar(11),
        student_contact varchar(11),
        email_id varchar(25) not null unique,
        s_address varchar(25),
        dob date,
        age int,
        s_password varchar(8));
```

➢ **S_Leave**

```
create table S_Leave(
        slid varchar(6) primary key,
        s_sdate date,
        s_edate date,
        s_duration int default 0,
        sltid varchar(6) references S_Leave_Type);
```

➢ **S_Leave_Type**

```
create table S_Leave_Type(
        sltid varchar(6) primary key,
        slt_desc varchar(30));
```

➢ **S_applies**

```
create table S_applies(
```

```
                   sid varchar(10) references Student,
                   slid varchar(6) references S_leave,
                   primary key(sid,slid));
```

➢ **Faculty**

```
create table Faculty(
          fid varchar(10) primary key,
          fname varchar(20) not null,
          fdept varchar(5),
          f_class varchar(5),
          designation varchar(10),
          phno varchar(11),
          f_address varchar(25),
          f_password varchar(8),
          super_fid varchar(10) references Faculty);
```

➢ **F_Leave**

```
create table F_Leave(
         flid varchar(6) primary key,
         fid varchar(6) references Faculty,
         f_sdate date,
         f_edate date,
         f_duration int default 0,
         fltid varchar(6) references F_Leave_Type);
```

➢ **F_Leave_Type**

```
create table F_Leave_Type(
         fltid varchar(6) primary key,
         flt_desc varchar(30));
```

➢ **F_manages**

```
create table F_manages(
         fid varchar(10) references Faculty,
         slid varchar(6) references S_leave,
         sid varchar(6) references Student,
         primary key(fid,slid,sid));
```

➢ **F_Annual_Leave**

```
create table F_Annual_Leave(
        fid varchar(10) references Faculty,
        fltid varchar(6) references F_Leave_type,
        f_year_no int,
        f_leave_days_allowed int,
        primary key(fid,fltid,f_year_no));
```

➢ **S_Annual_Leave**

```
create table S_Annual_Leave(
        sid varchar(10) references Student,
        sltid varchar(6) references S_Leave_type,
        s_year_no int,
        s_leave_days_allowed int,
        primary key(sid,sltid,s_year_no));
```

ALTER COMMAND
```
alter table S_applies add column S_status varchar(20) default 'Waiting';
```

DML COMMANDS

INSERT, SELECT, UPDATE COMMANDS

➢ **Student**

insert into
Student(sid,sname,sdept,s_class,parent_contact,student_contact,email_id,
s_address,dob,age,s_password)
values('S1','Adithya
Narayanan','CSE','B','9895692381','9947388822','adithyan@gmail.com','Koc
hin','2000/05/24',19,'adi123'),
('S2','Dinesh
Cherukuvada','CSE','A','9908666967','7330654967','dineshc@gmail.com','Bo
ndada','1999/07/21',19,'dinch'),
('S3','Shilpa H
P','ECE','A','9497824206','8848783559','shilpahp@gmail.com','Palakkad','199
9/04/15',20,'Shilz'),
('S4','Yamuna
K','ME','A','9447342081','8281803848','yamunak@gmail.com','Trivandrum','1
999/09/17',20,'anumay'),
('S5','Hari
Krishnan','EEE','A','7286021217','9605822724','harik@gmail.com','Ernakula
m','1999/04/20',20,'hari@99');

Select * from Student;

	sid character varying(10)	sname character varying(20)	sdept character varying(5)	s_class character varying(5)	parent_contact character varying(11)	student_contact character varying(11)	email_id character varying(25)	s_address character varying(25)	dob date	age integer	s_password character varying(8)
1	S1	Adithya Narayanan	CSE	B	9895692381	9947388822	adithyan@gmail.com	Kochin	2000-05-24	19	adi123
2	S2	Dinesh Cherukuvada	CSE	A	9908666967	7330654967	dineshc@gmail.com	Bondada	1999-07-21	19	dinch
3	S3	Shilpa H P	ECE	A	9497824206	8848783559	shilpahp@gmail.com	Palakkad	1999-04-15	20	Shilz
4	S4	Yamuna K	ME	A	9447342081	8281803848	yamunak@gmail.com	Trivandrum	1999-09-17	20	anumay
5	S5	Hari Krishnan	EEE	A	7286021217	9605822724	harik@gmail.com	Ernakulam	1999-04-20	20	hari@99

➢ **S_Leave**

insert into S_Leave(slid,s_sdate,s_edate,sltid)
values('SL1','2019/04/15','2019/04/15','SLT1');

/*subquery */
/*To update the number of days of leave taken by the student */
 update S_leave set s_duration = (select "s_edate" - "s_sdate" from S_Leave)+1;

Select * from S_Leave;

	slid character varying(6)	s_sdate date	s_edate date	s_duration integer	sltid character varying(6)
1	SL1	2019-04-15	2019-04-15	1	SLT1

➤ **S_Leave_Type**

insert into S_Leave_Type(sltid,slt_desc)
values('SLT1','Sick Leave'),
('SLT2','Casual Leave');

Select * from S_Leave_Type;

	sltid character varying(6)	slt_desc character varying(30)
1	SLT1	Sick Leave
2	SLT2	Casual Leave

➤ **S_applies**

insert into S_applies(sid,slid)
values('S2','SL1');

Select * from S_applies;

	sid character varying(10)	slid character varying(6)
1	S2	SL1

➢ **Faculty**

insert into
Faculty(fid,fname,fdept,f_class,designation,phno,f_address,f_password,super_fid)
values('F1','Jyothi','ME','A','Principal','9961978577','Kollam','@admin','F1'),
('F2','Sree Latha','CSE','A','Ass.Prof','857177460','Trivandrum','latha123','F1'),
('F3','Sarath','CSE','B','Prof','9074683771','Palakkad','sarath','F1'),
('F4','Gopakumar','ECE','A','Prof','9562199033','Kozhikode','gops','F1'),
('F5','Gevarghis','EEE','A','Ass.Prof','9656480421','Kottayam','varghis','F1');

Select * from Faculty;

	fid character varying(10)	fname character varying(20)	fdept character varying(5)	f_class character varying(5)	designation character varying(10)	phno character varying(11)	f_address character varying(25)	f_password character varying(8)	super_fid character varying(10)
1	F1	Jyothi	ME	A	Principal	9961978577	Kollam	@admin	F1
2	F2	Sree Latha	CSE	A	Ass.Prof	857177460	Trivandrum	latha123	F1
3	F3	Sarath	CSE	B	Prof	9074683771	Palakkad	sarath	F1
4	F4	Gopakumar	ECE	A	Prof	9562199033	Kozhikode	gops	F1
5	F5	Gevarghis	EEE	A	Ass.Prof	9656480421	Kottayam	varghis	F1

➢ **F_Leave**

insert into F_Leave(flid,fid,f_sdate,f_edate,fltid)
values('FL1','F2','2019/05/19','2019/05/23','FLT1');

/*subqueryt*/
/*To update the number of days of leave taken by the faculty */
update F_leave set f_duration = (select "f_edate" - "f_sdate" from F_Leave)+1;

Select * from F_Leave;

	flid character varying(6)	fid character varying(6)	f_sdate date	f_edate date	f_duration integer	fltid character varying(6)
1	FL1	F1	2019-05-19	2019-05-23	5	FLT1

➢ **F_Leave_Type**

insert into F_Leave_Type(fltid,flt_desc)
values('FLT1','Sick Leave'),
('FLT2','Casual Leave'),
('FLT3','Maternity Leave'),
('FLT4','Paternity Leave');

Select * from F_Leave_Type;

	fltid character varying(6)	flt_desc character varying(30)
1	FLT1	Sick Leave
2	FLT2	Casual Leave
3	FLT3	Maternity Leave
4	FLT4	Paternity Leave

➢ **F_manages**

insert into F_manages(sid,slid,fid)
values('S1','SL1','F3');

Select * from F_manages;

	fid character varying(10)	slid character varying(6)	sid character varying(6)
1	F3	SL1	S1

➢ **S_Annual_Leave**

insert into S_Annual_Leave(sid,sltid,s_year_no,s_leave_days_allowed)
values('S1','SLT1',2,15),
('S1','SLT2',2,10),('S2','SLT1',3,15),
('S2','SLT2',3,10),('S3','SLT1',3,15),
('S3','SLT2',3,10),('S4','SLT1',4,15),
('S4','SLT2',4,10),('S5','SLT1',2,15),
('S5','SLT2',2,10);

/*to_char & extract*/
/*To update the number of days of leave left for the student every year at the beginning
of a new semester*/
- **update S_Annual_Leave set s_year_no = s_year_no+1 where extract(month
  from CURRENT_DATE)=06 and to_char(CURRENT_DATE,'DD')= '10';**
- **update S_Annual_Leave set s_leave_days_allowed = 15 where
  extract(month from CURRENT_DATE)=06 and
  to_char(CURRENT_DATE,'DD')= '10' and sltid = 'SLT1';**

- **update S_Annual_Leave set s_leave_days_allowed = 10 where extract(month from CURRENT_DATE)=06 and to_char(CURRENT_DATE,'DD')= '10' and sltid = 'SLT2';**

Select * from S_Annual_Leave;

	sid character varying(10)	sltid character varying(6)	s_year_no integer	s_leave_days_allowed integer
1	S1	SLT1	2	15
2	S1	SLT2	2	10
3	S2	SLT1	3	15
4	S2	SLT2	3	10
5	S3	SLT1	3	15
6	S3	SLT2	3	10
7	S4	SLT1	4	15
8	S4	SLT2	4	10
9	S5	SLT1	2	15
10	S5	SLT2	2	10

➢ **F_Annual_Leave**

insert into F_Annual_Leave(fid,fltid,f_year_no,f_leave_days_allowed) values('F1','FLT1',3,20), ('F1','FLT2',3,15),('F1','FLT3',3,90),('F1','FLT4',3,30),('F2','FLT1',2,20), ('F2','FLT2',2,15),('F2','FLT3',2,90),('F2','FLT4',2,30),('F3','FLT1',7,20), ('F3','FLT2',7,15),('F3','FLT3',7,90),('F3','FLT4',7,30),('F4','FLT1',5,20), ('F4','FLT2',5,15),('F4','FLT3',5,90),('F4','FLT4',5,30),('F5','FLT1',2,20), ('F5','FLT2',2,15),('F5','FLT3',2,90),('F5','FLT4',2,30);

/*to_char & extract*/
/*To update the number of days of leave left for the faculty every year at the beginning of a new semester */
- **update F_Annual_Leave set f_year_no = f_year_no+1 where extract(month from CURRENT_DATE)=06 and to_char(CURRENT_DATE,'DD')= '10';**
- **update F_Annual_Leave set f_leave_days_allowed = 20 where extract(month from CURRENT_DATE)=06 and to_char(CURRENT_DATE,'DD')= '10' and fltid = 'FLT1';**

- update F_Annual_Leave set f_leave_days_allowed = 15 where extract(month from CURRENT_DATE)=06 and to_char(CURRENT_DATE,'DD')= '10' and fltid = 'FLT2';
- update F_Annual_Leave set f_leave_days_allowed = 90 where extract(month from CURRENT_DATE)=06 and to_char(CURRENT_DATE,'DD')= '10' and fltid = 'FLT3';
- update F_Annual_Leave set f_leave_days_allowed = 30 where extract(month from CURRENT_DATE)=06 and to_char(CURRENT_DATE,'DD')= '10' and fltid = 'FLT4';

Select * from F_Annual_Leave;

	fid character varying(10)	fltid character varying(6)	f_year_no integer	f_leave_days_allowed integer
1	F1	FLT1	3	20
2	F1	FLT2	3	15
3	F1	FLT3	3	90
4	F1	FLT4	3	30
5	F2	FLT1	2	20
6	F2	FLT2	2	15
7	F2	FLT3	2	90
8	F2	FLT4	2	30
9	F3	FLT1	7	20
10	F3	FLT2	7	15
11	F3	FLT3	7	90
12	F3	FLT4	7	30
13	F4	FLT1	5	20
14	F4	FLT2	5	15
15	F4	FLT3	5	90
16	F4	FLT4	5	30
17	F5	FLT1	2	20
18	F5	FLT2	2	15
19	F5	FLT3	2	90
20	F5	FLT4	2	30

QUERIES

/*Replace*/
/*To change the password*/
- **update Faculty set f_password = Replace(f_password,'sarath','sarath@1') where fid = 'F3';**

	fid character varying(10)	fname character varying(20)	fdept character varying(5)	f_class character varying(5)	designation character varying(10)	phno character varying(11)	f_address character varying(25)	f_password character varying(8)	super_fid character varying(10)
1	F1	Jyothi	ME	A	Principal	9961978577	Kollam	@admin	F1
2	F2	Sree Latha	CSE	A	Ass.Prof	857177460	Trivandrum	latha123	F1
3	F4	Gopakumar	ECE	A	Prof	9562199033	Kozhikode	gops	F1
4	F5	Gevarghis	EEE	A	Ass.Prof	9656480421	Kottayam	varghis	F1
5	F3	Sarath	CSE	B	Prof	9074683771	Palakkad	sarath@1	F1

/*Aggregate Functions,Group By.....Having,Order By,Join*/
- **select fid,fname,f_class from Faculty natural join F_Annual_Leave where f_leave_days_Allowed>(select avg(f_leave_days_allowed) from F_Annual_Leave) group by fid having fdept = 'CSE';**

	fid character varying(10)	fname character varying(20)	f_class character varying(5)
1	F2	Sree Latha	A
2	F3	Sarath	B

- **select sid,sname,sum(s_leave_days_allowed) from Student natural join S_Annual_Leave where s_leave_days_allowed>9 group by(sid) order by sid;**

	sid character varying(10)	sname character varying(20)	sum bigint
1	S1	Adithya Narayanan	24
2	S2	Dinesh Cherukuvada	25
3	S3	Shilpa H P	25
4	S4	Yamuna K	25
5	S5	Hari Krishnan	25

/*Outer Join*/
- **select sid,sname,sdept,s_class from Student left outer join S_applies using(sid) where S_applies.slid is null;**

	sid character varying(10)	sname character varying(20)	sdept character varying(5)	s_class character varying(5)
1	S1	Adithya Narayanan	CSE	B
2	S3	Shilpa H P	ECE	A
3	S4	Yamuna K	ME	A
4	S5	Hari Krishnan	EEE	A

/*String Operators*/
- **select LPad(sname,20,'*') from Student;**

	lpad text
1	***Adithya Narayanan
2	**Dinesh Cherukuvada
3	**********Shilpa H P
4	*************Yamuna K
5	*******Hari Krishnan

- **select fname,length(fname) from Faculty;**

	fname character varying(20)	length integer
1	Jyothi	6
2	Sree Latha	10
3	Gopakumar	9
4	Gevarghis	9
5	Sarath	6

/*Between,IN,Not IN, Not Between*/
- **Select * from faculty where fid between 'F1' and 'F3';**

	fid character varying(10)	fname character varying(20)	fdept character varying(5)	f_class character varying(5)	designation character varying(10)	phno character varying(11)	f_address character varying(25)	f_password character varying(8)	super_fid character varying(10)
1	F1	Jyothi	ME	A	Principal	9961978577	Kollam	@admin	F1
2	F2	Sree Latha	CSE	A	Ass.Prof	857177460	Trivandrum	latha123	F1
3	F3	Sarath	CSE	B	Prof	9074683771	Palakkad	sarath@1	F1

- **Select * from student where s_address in ('Kollam','Ernakulam','Palakkad');**

	sid character varying(10)	sname character varying(20)	sdept character varying(5)	s_class character varying(5)	parent_contact character varying(11)	student_contact character varying(11)	email_id character varying(25)	s_address character varying(25)	dob date	age integer	s_password character varying(8)
1	S3	Shilpa H P	ECE	A	9497824206	8848783559	shilpahp@gmail.com	Palakkad	1999-04-15	20	Shilz
2	S5	Hari Krishnan	EEE	A	7286021217	9605822724	harik@gmail.com	Ernakulam	1999-04-20	20	hari@99

- **Select * from Student where sdept not in ('CSE');**

	sid character varying(10)	sname character varying(20)	sdept character varying(5)	s_class character varying(5)	parent_contact character varying(11)	student_contact character varying(11)	email_id character varying(25)	s_address character varying(25)	dob date	age integer	s_password character varying(8)
1	S3	Shilpa H P	ECE	A	9497824206	8848783559	shilpahp@gmail.com	Palakkad	1999-04-15	20	Shilz
2	S4	Yamuna K	ME	A	9447342081	8281803848	yamunak@gmail.com	Trivandrum	1999-09-17	20	anumay
3	S5	Hari Krishnan	EEE	A	7286021217	9605822724	harik@gmail.com	Ernakulam	1999-04-20	20	hari@99

- **Select * from Student where dob not between '1999/04/01' and '1999/10/31';**

	sid character varying(10)	sname character varying(20)	sdept character varying(5)	s_class character varying(5)	parent_contact character varying(11)	student_contact character varying(11)	email_id character varying(25)	s_address character varying(25)	dob date	age integer	s_password character varying(8)
1	S1	Adithya Narayanan	CSE	B	9895692381	9947388822	adithyan@gmail.com	Kochin	2000-05-24	19	adi123

/*Set operations*/

- **select fid,fname from Faculty where fdept='CSE' union all select fid,fname from Faculty where fdept='ECE';**

	fid character varying(10)	fname character varying(20)
1	F2	Sree Latha
2	F3	Sarath
3	F4	Gopakumar

- **select fid,fname from Faculty except select fid,fname from Faculty where f_class='A' and fdept='ECE';**

	fid character varying(10)	fname character varying(20)
1	F2	Sree Latha
2	F3	Sarath
3	F1	Jyothi
4	F5	Gevarghis

/*Subqueries*/

- **update S_Annual_Leave set s_leave_days_allowed = s_leave_days_allowed - (select s_duration from S_Leave) where sid= 'S1' and sltid = 'SLT1' and s_leave_days_allowed>=(select s_duration from S_Leave);**

	sid character varying(10)	sltid character varying(6)	s_year_no integer	s_leave_days_allowed integer
1	S1	SLT2	2	10
2	S2	SLT1	3	15
3	S2	SLT2	3	10
4	S3	SLT1	3	15
5	S3	SLT2	3	10
6	S4	SLT1	4	15
7	S4	SLT2	4	10
8	S5	SLT1	2	15
9	S5	SLT2	2	10
10	S1	SLT1	2	14

- update F_Annual_Leave set f_leave_days_allowed = f_leave_days_allowed - (select f_duration from F_Leave) where fid= 'F2' and fltid = 'FLT1' and f_leave_days_allowed>=(select f_duration from F_Leave);

Data Output | Explain | Messages | History

	fid character varying(10)	fltid character varying(6)	f_year_no integer	f_leave_days_allowed integer
1	F1	FLT1	3	20
2	F1	FLT2	3	15
3	F1	FLT3	3	90
4	F1	FLT4	3	30
5	F2	FLT2	2	15
6	F2	FLT3	2	90
7	F2	FLT4	2	30
8	F3	FLT1	7	20
9	F3	FLT2	7	15
10	F3	FLT3	7	90
11	F3	FLT4	7	30
12	F4	FLT1	5	20
13	F4	FLT2	5	15
14	F4	FLT3	5	90
15	F4	FLT4	5	30
16	F5	FLT1	2	20
17	F5	FLT2	2	15
18	F5	FLT3	2	90
19	F5	FLT4	2	30
20	F2	FLT1	2	15

- **update S_applies set S_status = 'Approved' where sid= 'S2' and slid = 'SL1' and (select s_leave_days_allowed from S_Annual_Leave where sid= 'S2' and sltid = 'SLT1')>=(select s_duration from S_Leave where sid= 'S2' and sltid = 'SLT1') ;**

Data Output | Explain | Messages | History

	sid character varying(10)	slid character varying(6)	s_status character varying(20)
1	S2	SL1	Approved

/*view*/
- **create view Status as**
        select sid,sname,sdept,s_class,slid,s_status from Student natural join
        S_applies;
Select * from Status;

	sid character varying(10)	sname character varying(20)	sdept character varying(5)	s_class character varying(5)	slid character varying(6)	s_status character varying(20)
1	S2	Dinesh Cherukuvada	CSE	A	SL1	Approved

/*Not Exists,Any,All*/

- **select fid,fname from Faculty where exists(select fid,fname from Faculty where fdept='CSE');**

	fid character varying(10)	fname character varying(20)
1	F1	Jyothi
2	F2	Sree Latha
3	F4	Gopakumar
4	F5	Gevarghis
5	F3	Sarath

- **select sid from S_applies where sid=any(select sid from S_Annual_Leave where s_leave_days_allowed<5);**

	sid character varying(10)

- **select sid,sname,parent_contact,student_contact from Student natural join S_Annual_Leave where s_leave_days_allowed >= all(select avg(s_leave_days_allowed) from S_Annual_Leave);**

	sid character varying(10)	sname character varying(20)	parent_contact character varying(11)	student_contact character varying(11)
1	S2	Dinesh Cherukuvada	9908666967	7330654967
2	S3	Shilpa H P	9497824206	8848783559
3	S4	Yamuna K	9447342081	8281803848
4	S5	Hari Krishnan	7286021217	9605822724
5	S1	Adithya Narayanan	9895692381	9947388822