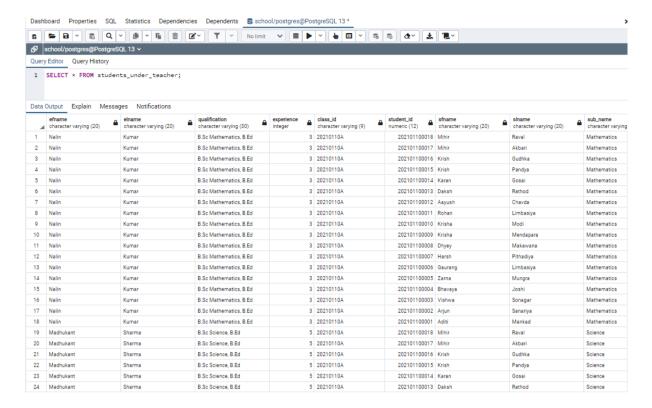
SCHOOL MANAGEMENT SYSTEM

Views:

View-1). View which shows what all students are taught by teachers and what subjects these teachers are teaching. By this view parents can check which teachers are teaching their children and what subject do they teach.

```
CREATE view students under teacher AS
SELECT r1.efname.
  r1.elname,
  r1.qualification,
  r1.experience,
  r1.class id,
  r1.student_id,
  r1.sfname.
  r1.slname,
  subject.sub_name
 FROM school_management.subject
  JOIN (SELECT employee.fname AS efname,
      employee.lname AS elname,
      employee.qualification,
      employee.experience,
      r.class_id,
      r.student id,
      r.fname AS sfname,
      r.lname AS slname.
      r.subject id
      FROM school_management.employee
       JOIN ( SELECT student.class_id,
           student.student id.
           student.fname,
           student.lname,
           teaches.teacher id,
           teaches.subject_id
           FROM school_management.student
            JOIN school_management.teaches USING (class_id)) r ON
employee.teacher_id = r.teacher_id) r1 USING (subject_id);
```



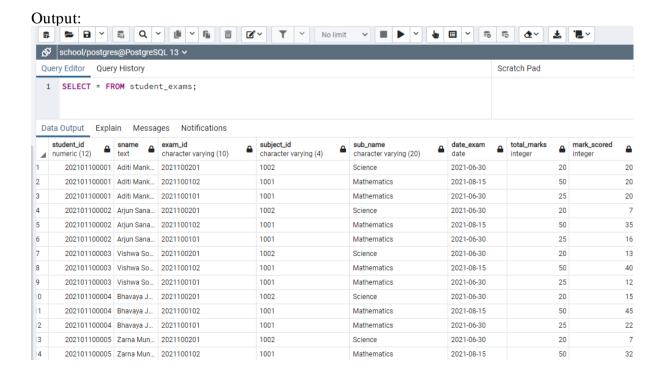
View-2). View which shows marks obtained by students in some examination of some subject. This view can be used by manager to check what all exams of different subjects are taken and what marks students scored in it.

CREATE VIEW student exams as

SELECT student_id,fname ||' '|| lname as

sname,exam_id,subject_id,sub_name,date_exam,total_marks,mark_scored FROM student NATURAL JOIN

(SELECT * FROM result_exam NATURAL JOIN (SELECT * FROM examination NATURAL JOIN subject) as R) as R1



View-3). View which shows marks obtained by students in some examination of some subject and maximum, minimum, average marks of that examination. This view can be used by manager to check what all exams of different subjects are taken and what is the performance of students. This view can also be used by parents to check where their child lies and what progress is required. This view can also be used by teachers to each child's weak points.

CREATE VIEW student_mark_comparison as SELECT * FROM student_exams NATURAL JOIN (SELECT exam_id,MIN(mark_scored),MAX(mark_scored),round(AVG(mark_scored),2) from student_exams GROUP BY exam_id) as R;

Dashboard Properties SQL Statistics Dependencies Dependents 🕏 school/postgres@PostgreSQL 13 * S B Q V B V B B V S S & X L L School/postgres@PostgreSQL 13 v uery Editor Query History 1 SELECT * FROM student_mark_comparison; Data Output Explain Messages Notifications 202101100001 Aditi Mank... 1001 Mathematics 25 20 2021100101 25 18 22 2021-06-30 2 2021100101 202101100002 Arjun Sana... 1001 2021-06-30 18.22 Mathematics 16 Mathematics 202101100003 Vishwa So... 1001 2021100101 2021-06-30 12 25 18.22 Mathematics 2021100101 202101100004 Bhavaya J., 1001 2021-06-30 22 18.22 Mathematics 202101100005 Zarna Mun... 1001 202101100006 Gaurang Li... 1001 2021100101 2021-06-30 25 18.22 Mathematics 2021100101 2021-06-30 18.22 Mathematics 2021100101 202101100007 Harsh Pith... 1001 2021-06-30 15 18.22 Mathematics 8 2021100101 202101100008 Dhyey Mak... 1001 2021-06-30 18.22 Mathematics 202101100009 Krisha Me... 1001 2021100101 2021-06-30 18 22 Mathematics 10 2021100101 202101100010 Krisha Modi 1001 2021-06-30 18 22 202101100011 Rohan Lim... 1001 11 2021100101 Mathematics 2021-06-30 18.22 202101100012 Aayush Ch... 1001 Mathematics 12 2021100101 2021-06-30 19 25 18 22 202101100013 Daksh Rat... 1001 2021-06-30 13 2021100101 Mathematics 25 Mathematics 14 2021100101 202101100014 Karan Gosai 1001 2021-06-30 25 202101100015 Krish Pand... 1001 15 2021100101 Mathematics 2021-06-30 25 16 2021100101 202101100016 Krish Gudh... 1001 2021-06-30 22 202101100017 Mihir Akbari 1001 17 2021100101 2021-06-30 202101100018 Mihir Raval 1001 202101100001 Aditi Mank... 1001 2021-08-15 202101100002 Arjun Sana... 1001 202101100002 Arjun Sana... 1001 202101100003 Vishwa So... 1001 22 2021100102 202101100004 Bhavaya J... 1001 Mathematics 202101100006 Gaurang Li... 1001 Mathematics

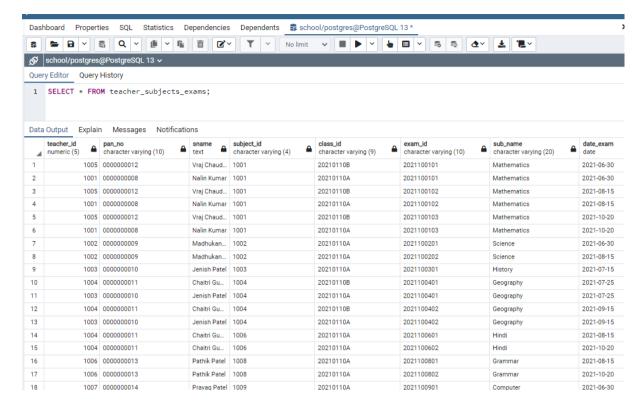
View-4). View which shows examinations taken for different subjects by teachers. This view can be used by manager to check what all exams of different subjects are taken and what all subjects a teacher teaches in which class.

CREATE VIEW teacher_subjects_exams as

SELECT teacher_id,pan_no,fname ||' '|| Iname as

sname,subject_id,class_id,exam_id,sub_name,date_exam FROM employee NATURAL JOIN (SELECT * from teaches NATURAL JOIN

(SELECT subject_subject_id,sub_name,exam_id,date_exam FROM subject LEFT OUTER JOIN examination ON (subject_subject_id=examination.subject_id)) as R1



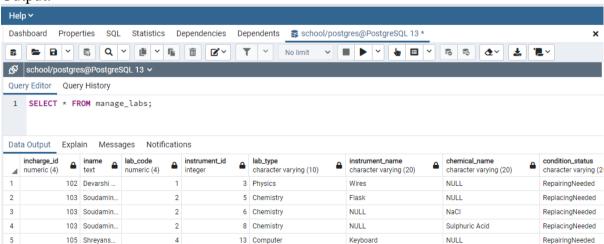
View-5). View which shows instruments which are not in good condition. Through this view manager can enlist list of instruments or chemicals which are either to be repaired or new ones are to be brought for a particular library. Also one can find the name of incharge who is handling all these records.

CREATE VIEW manage_labs as

SELECT incharge_id,fname||''||lname as

iname,lab_code,instrument_id,lab_type,instrument_name,chemical_name,condition_status FROM employee NATURAL JOIN

(SELECT * FROM lab NATURAL JOIN (SELECT * FROM instruments WHERE(condition_status!='Good')) as R) as R1



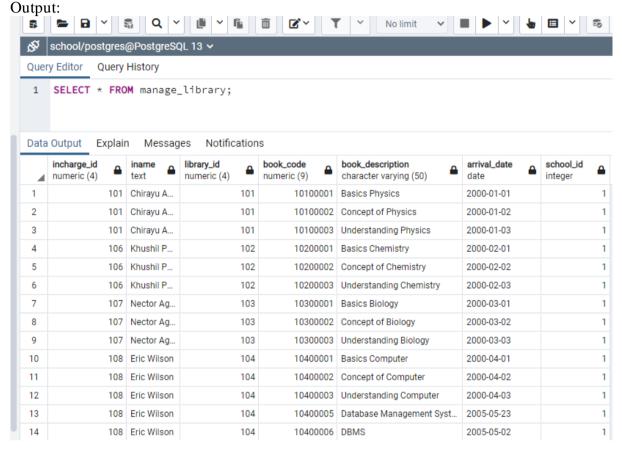
View-6). View which shows list of books present in different school libraries and their arrival dates. By this view library incharge or manager can make list of books which are not available in school library and are required.

CREATE VIEW manage_library as

SELECT R1.incharge_id,fname||' '||Iname as

iname,library_id,book_code,book_description,arrival_date,R1.school_id FROM employee JOIN

(SELECT * FROM library1 NATURAL JOIN books) as R1 ON (employee.incharge_id=R1.incharge_id)



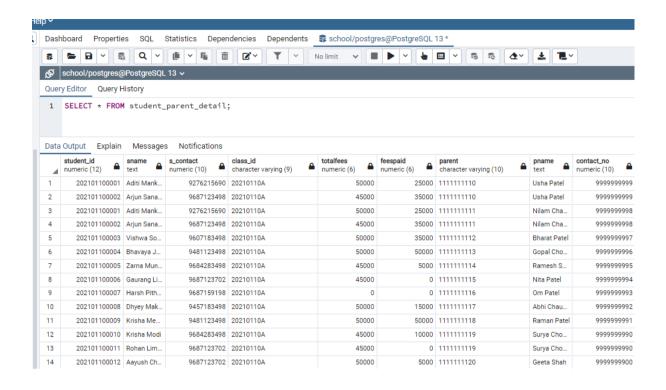
View-7). View which shows student contact details and parent details of that student. This view can be used by manager to get contact details of a student.

CREATE VIEW student_parent_detail as

SELECT student_id,fname||' '||Iname as sname,student.contactno as

s_contact,class_id,totalfees,feespaid,parent,pname,contact_no FROM student JOIN (SELECT parent,student,fname ||' || lname as pname,contact_no FROM relation JOIN

(SELECT * FROM parent JOIN parent_contact ON(pan_no=parent_id)) as R ON (parent=parent_id)) as R1 ON (student_id=student);



Functions

Function). Find information of employees whose salary is more than 30000 by creating a function.

CREATE OR REPLACE function more_salary(sal integer)

RETURNS SETOF employee AS \$BODY\$

DECLARE

e employee% rowtype;

BEGIN

FOR e IN SELECT * FROM employee

LOOP

IF e.salary > sal THEN -- could be more complex filter

RETURN NEXT e:

-- return basically appends a row to result-set, and builds it for return

END IF:

END LOOP:

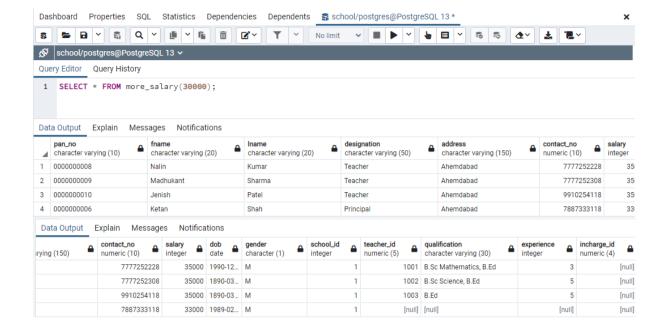
RAISE NOTICE '%',e;

RETURN; -- this is actual return

END

\$BODY\$ LANGUAGE plpgsql;

SELECT * FROM more_salary(30000);



Function). Calculate the percentage of student with student_id=202101100002.

CREATE OR REPLACE function percentage(s_id numeric(12,0))

RETURNS numeric AS \$BODY\$

DECLARE

r record;

x numeric(6,3);

y numeric(6,3);

z numeric(6,3);

BEGIN

x = 0.00;

y = 0.00;

z = 0.00;

FOR r IN SELECT * FROM student_exams WHERE student_id = s_id

LOOP

x:=x+r.mark scored;

y:=y+r.total_marks;

END LOOP;

z:=x/y;

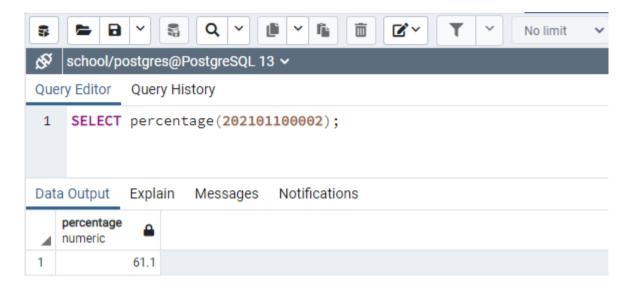
z := z * 100;

RETURN z;

END;

\$BODY\$ LANGUAGE plpgsql;

SELECT percentage(202101100002);



Function). Create a function which increaments salary of employee with given pan number by given percentage.

SET SEARCH_PATH TO school_management;

create or replace function increament_sal(percent numeric(5,2), p_num VARCHAR(10)) returns bool as \$BODY\$

declare

Q varchar(1000);

rows_affected integer;

BEGIN

 $\label{eq:Q:='UPDATE EMPLOYEE SET salary = salary + salary * ' || percent || ' where pan_no = ' || QUOTE_LITERAL(p_num);$

execute Q;

GET DIAGNOSTICS rows_affected := ROW_COUNT;

RAISE NOTICE 'Rows Found: total rows: %', rows affected;

return true;

EXCEPTION

WHEN undefined table THEN

raise exception 'Table Name is invalid';

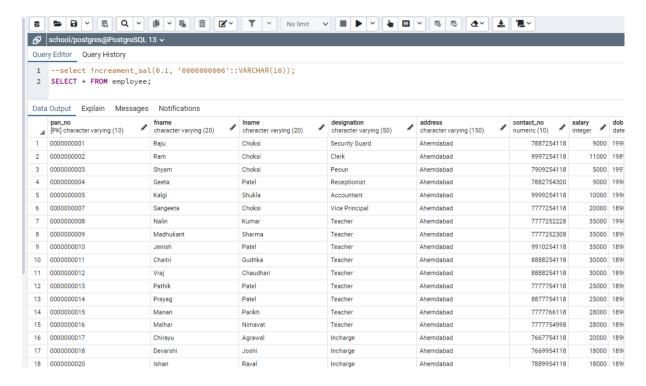
return false;

end \$BODY\$ LANGUAGE 'plpgsql';

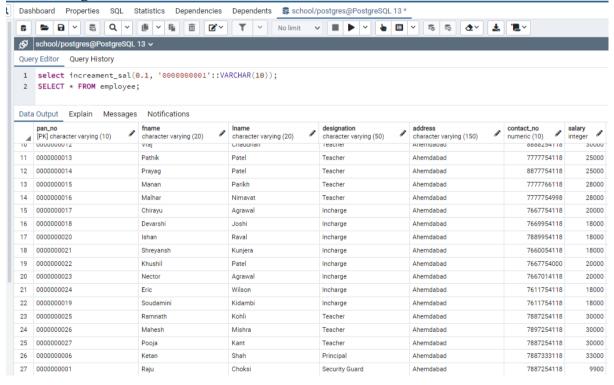
select increament_sal(0.1, '0000000006'::VARCHAR(10));

Output:

Before calling Function



After calling Function:



Triggers

Trigger) To derive age attribute of employee from dob attribute whenever record inserted or updated.

create or replace function add_age_employee() returns trigger as \$emp_audit\$ begin New.age=(CURRENT_DATE-new.dob)/365;

return new; end; \$emp_audit\$ language plpgsql;

create trigger add_age
before insert or update on employee
for each row execute procedure add_age_employee();

Output: \$ | 출 | 급 | v | 특 | 급 | v | 특 | 面 | 면 v | 작 | v | No limit | v | ■ | ▶ | v | 늘 | 面 | v | 등 등 | 선 v | 날 | 별 v 1 SET SEARCH_PATH TO school_management; INSERT INTO employee(pan_no, fname, lname, designation, address, contact_no, salary, dob, gender, school_id) VALUES ('00000000029', 'Anil', 'Singh', 'Assitant', 'Ahemdabad', 9871243210, 25000, '1995-3-21', 'M', 1); SELECT * FROM employee Data Output Explain Messages Notifications pan_no [PK] character varying (10) contact_no numeric (10) salary integer fname character varying (20) designation character varying (50) character varying (150) 17 0000000020 Ishan Raval Rajnagai 7889954118 18000 18 Incharge 18 0000000021 Kunjera Incharge Rajnagar 7660054118 18000 18 19 7667754000 20000 19 0000000022 Khushil Patel Rajnagar Incharge 20 0000000023 Nector Incharge Rainagar 7667014118 20000 19 7611754118 18000 19 21 0000000024 Eric Wilson Incharge Rajnagar 22 0000000019 Soudamini Kidambi Incharge Rajnagar 7611754118 18000 19 23 Ramnath Kohli 7887254118 30000 19 Rajnagar 24 0000000026 Mahesh Mishra Teacher Rainagar 7897254118 30000 19 Pooja 25 0000000027 Kant Teacher Rajnagar 7887254118 30000 19 26 0000000006 Ketan Shah Principal Rajnagar 7887333118 33000 19 27 0000000001 Raju 9000 19 Choksi Security Guard Rajnagar 28 0000000028 Malini Singh Assitant Ahemdahad 9876543210 20000 19 Dashboard Properties Statistics Dependencies Dependents school/postgres@PostgreSQL 13 * S C V S Q V I V I I I I I V V V V V No limit Query Editor Query History 1 SET SEARCH_PATH TO school_management; INSERT INTO employee($\verb"pan_no", fname", lname", designation", address, contact_no", salary, dob, gender, school_id)$ VALUES ('0000000029', 'Anil', 'Singh', 'Assitant', 'Ahemdabad', 9871243210, 25000, '1995-3-21', 'M', 1); 5 SELECT * FROM employee Data Output Explain Messages Notifications 18000 1890-09... M [null] [null] [null] 104 131 7660054118 18000 1890-01... M Inull Inull [null] 105 131 7667754000 20000 1990-01... M [null] [null] [null] 31 7667014118 20000 1990-08... M [null] [null] 107 31 [null] 7611754118 18000 1990-08... M [null] [null] [null] 108 31 7611754118 18000 1990-08... M [null] [null] [null] 7887254118 30000 1990-04 M 1010 B. Ed. M.Ed 15 fnull1 31 30000 1990-05... M 1011 B.Sc [null] 31 7887254118 30000 1990-04 E 1012 B.Sc. M.Sc 10 [null] 31 33000 1989-02... M [null] [null] [null] [null] 7887254118 9000 1990-04... M [null] [null] [null] [null] 31 20000 1998-03... F 23 [null] 9871243210 25000 1995-03... M Inulii Inulii 26 [null] fnull1