PROJECT REPORT

DBMS

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USE CASE DIAGRAM

Admin

User

School

Authority

ERD (Barker’s Foot Notation)

SPECIALIZATION

#SP\_Id

\*SP\_Name

SCHOOL

#School\_Id

\*School\_Name

\*School\_Type

\*School\_Category

\*School\_Address

\*D\_Id

DIVISION

#D\_Id

\*D\_Name

has have

belong to comes under

TEST

#Test\_Id

\*Test\_Name

\*School\_Id

\*Max\_Mark

\*Test\_Date

conduct

conducted by

contains recieves

submitted to

PREFERENCE

#PR\_Id

\*App\_Id

\*PR\_No

\*School\_Id

O Status

APPLICATION

#App\_Id

\*F\_Name

\*L\_Name

O M\_Name

\*Dob

\*Address

\*Pin

\*Phone

O Email

\*App\_Date

O Final\_Status

o Remark

\*D\_Id

linked with

MARK

#Test\_Id

#App\_Id

\*Mark

has

associated

with

Relational Schema

DIVISION (D\_Id, D\_Name)

SCHOOL (School\_Id, School\_Name, School\_Type, School\_Category, School\_Address, Pin, Phone, Email, D\_Id)

SCHOOL\_TYPE (ST\_Id, ST\_Name)

SCHOOL\_CATEGORY (SC\_Id, SC\_Name)

SPECIALIZATION (SP\_Id, SP\_Name)

SCHOOL\_SPECIALIZATION (School\_Id, SP\_Id)

APPLICATION (APP\_Id, F\_Name, L\_Name, M\_Name, DOB, Address, Pin, Phone, Email, App\_Date, FinalStatus, Remarks)

PREFERENCE (APP\_Id, Pref\_No, School\_Id, SP\_Id, Admission\_Status)

TEST (Test\_Id, School\_Id, Test\_Name, Total\_Marks, Test\_Date)

Test\_Mark (Test\_Id, App\_Id, Mark)

**Note: Blue color represents the primary key**

**Green color represents the foreign key**

**Red color represents the composite key**

Queries

**A Query that uses ORDER BY:**

**This query will return the name, concatenated address, phone number and email address in alphabetically descending order of school name:**

SELECT SCHOOL\_NAME AS SCHOOL, SCHOOL\_ADDRESS||','||SCHOOL\_PIN AS

ADDRESS, SCHOOL\_PHONE AS PHONE, SCHOOL\_EMAIL AS MAIL

FROM SCHOOL

ORDER BY SCHOOL\_NAME DESC;



**A Query that uses INNER JOIN:**

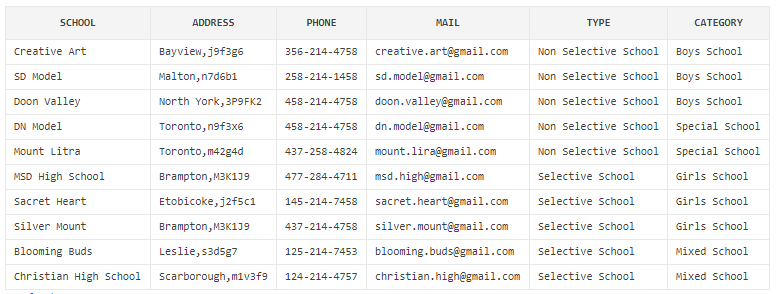
**This query will return the detailed information about table from four different tables:**

SELECT S.SCHOOL\_NAME AS SCHOOL,S.SCHOOL\_ADDRESS||','||S.SCHOOL\_PIN AS ADDRESS,S.SCHOOL\_PHONE AS PHONE, S.SCHOOL\_EMAIL AS MAIL,ST.ST\_NAME AS TYPE,SC.SC\_NAME AS CATEGORY

FROM SCHOOL S INNER JOIN SCHOOL\_TYPE ST ON S.ST\_ID=ST.ST\_ID

INNER JOIN SCHOOL\_CATEGORY SC ON S.SC\_ID=SC.SC\_ID

ORDER BY ST.ST\_NAME,SC.SC\_NAME;



**A Query that uses aggregate functions:**

**This query will return the total number of applications for each school in descending order:**

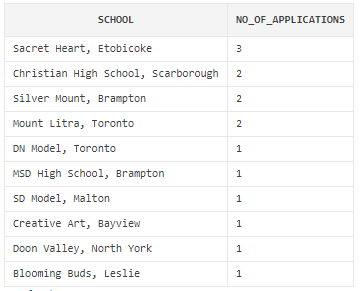
SELECT S.SCHOOL\_NAME||', '||S.SCHOOL\_ADDRESS AS SCHOOL,COUNT(\*) AS NO\_OF\_APPLICATIONS

FROM PREFERENCES P INNER JOIN SCHOOL S

ON P.SCHOOL\_ID=S.SCHOOL\_ID

GROUP BY S.SCHOOL\_NAME,S.SCHOOL\_ADDRESS

ORDER BY NO\_OF\_APPLICATIONS DESC



**A Query that uses GROUP BY and HAVING clauses:**

**This query will return the name of the school which received the highest number of applications:**

SELECT S.SCHOOL\_NAME||', '||S.SCHOOL\_ADDRESS AS SCHOOL,COUNT(\*) AS NO\_OF\_APPLICATIONS

FROM PREFERENCES P INNER JOIN SCHOOL S

ON P.SCHOOL\_ID=S.SCHOOL\_ID

GROUP BY S.SCHOOL\_NAME,S.SCHOOL\_ADDRESS

HAVING COUNT(\*)=(SELECT MAX(COUNT(SCHOOL\_ID)) FROM PREFERENCES GROUP BY SCHOOL\_ID)

ORDER BY NO\_OF\_APPLICATIONS DESC



**A Query that uses a sub-query as a relation:**

**This query will return the marks of every test of a particular student by providing the applicant id:**

SELECT S.SCHOOL\_NAME SCHOOL,R.TEST\_NAME EXAM,R.TEST\_DATE,A.FNAME||' '||A.MNAME||''||A.LNAME NAME,R.MARK SCORED,R.TOTAL\_MARK MAX\_MARK

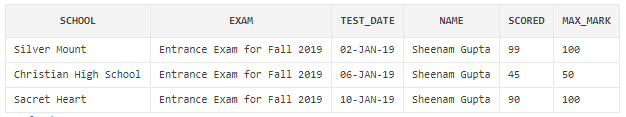
FROM SCHOOL S INNER JOIN (SELECT T.\*,TM.APP\_ID,TM.MARK

FROM TEST T INNER JOIN TESTMARK TM

ON T.TEST\_ID=TM.TEST\_ID) R ON S.SCHOOL\_ID=R.SCHOOL\_ID

INNER JOIN APPLICATION A ON R.APP\_ID=A.APP\_ID

WHERE R.APP\_ID=1



**A Query uses a sub-query in WHERE clause:**

**This query will update the admission status of applicant’s preference based on the school id and available seats in that school. (We supposed school id=101 has total 20 seats for admission)**

**Additional Note: Non-selective schools give admission based on FCFS bases and selective school will give admission based on test marks of the applicant)**

UPDATE PREFERENCE SET ADMISSION\_STATUS='CONFIRMED'

WHERE APP\_ID IN

(SELECT APP\_ID

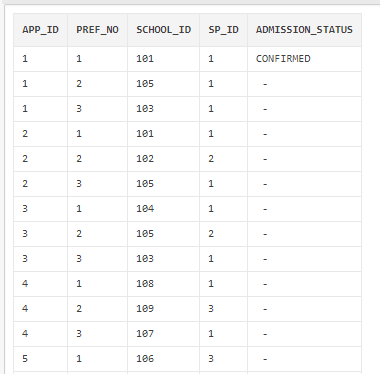
FROM (SELECT P.APP\_ID,P.SCHOOL\_ID

FROM APPLICATION A INNER JOIN PREFERENCE P ON A.APP\_ID=P.APP\_ID

WHERE P.SCHOOL\_ID=101

ORDER BY APPLIED\_DATE)

WHERE ROWNUM<=20) AND (SCHOOL\_ID=101)

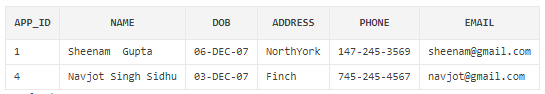


**A query stored as a VIEW**

**This query will create the view of the applicant detail**

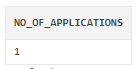
CREATE VIEW ApplicantsInSameDivision AS  
SELECT APP\_ID,FNAME||' '||MNAME||' '||LNAME AS NAME,DOB,ADDRESS,PHONE,EMAIL  
FROM Application  
WHERE  App\_Div\_Id=1;

SELECT \* FROM ApplicantsInSameDivision



**View as a relation**

SELECT COUNT(\*) AS NO\_OF\_APPLICATIONS  
FROM PREFERENCES WHERE SCHOOL\_ID=101  
AND APP\_ID IN (SELECT APP\_ID FROM ApplicantsInSameDivision) AND PREF\_NO=1



**A query that uses partial matching in the WHERE clause**

SELECT APP\_ID,FNAME||' '||MNAME||' '||LNAME AS NAME,DOB,ADDRESS,PHONE,EMAIL  
FROM Application  
WHERE  FNAME LIKE 'E%';



**A query that uses a self-JOIN**

SELECT A.FNAME||' '||A.MNAME||' '||A.LNAME AS  
NAME,A.DOB,A.ADDRESS,A.PHONE,A.EMAIL,S.SCHOOL\_NAME,P.PREF\_NO  
FROM PREFERENCE P INNER JOIN APPLICATION A ON P.APP\_ID=A.APP\_ID  
INNER JOIN SCHOOL S ON P.SCHOOL\_ID=S.SCHOOL\_ID  
WHERE SP\_ID=1

