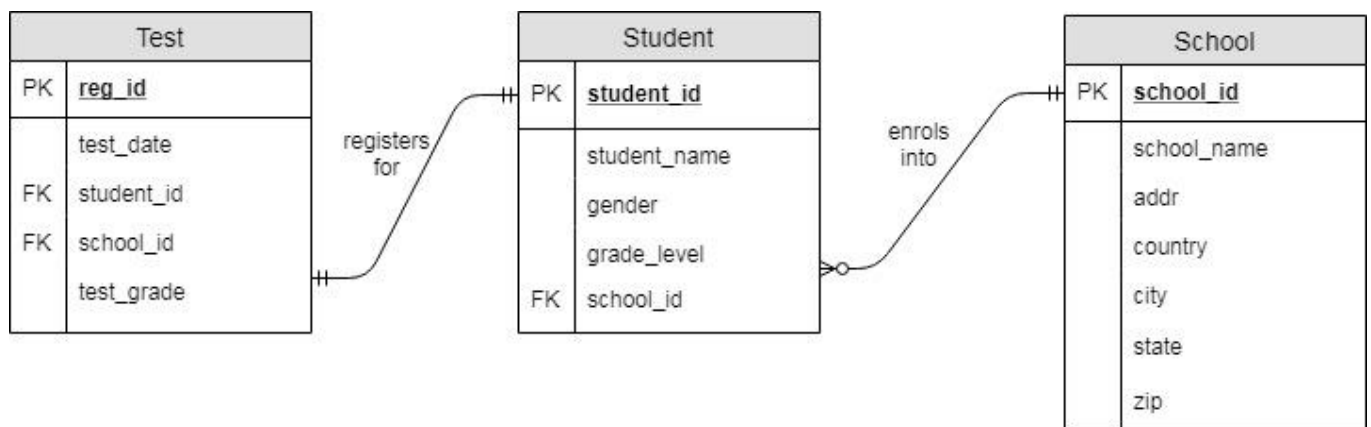# MySQL – Semester Project

Introduction:

This is a database for 'Elementary Students' of 5th grade in five different schools in Texas. There are 3 schools in Austin, 1 in Dallas and 1 in Houston. There is a common Test for each of the students and based on the results, only those students who pass with A, B and C grades advance to the 6th grade, others who get a D and F stay back and repeat 5th grade.

The database contains three tables: Student, School and Test.

The Crow's Foot ERD for elementary_students Database:

Business Rules:

1. Each test can be taken by only one student
2. Each student can register only for one test
3. At least zero and at most many students can enroll into each school
4. Each student attends at least one and at most one school

SQL Code to create and populate tables:

```
Create database elementary_students;

use elementary_students;


create table school

(school_id int(5) not null,

school_name char(50) not null,

addr varchar(50) not null,

county char(20) not null,

city char(20) not null,

state char(20) not null,

zip int(5) not null,

primary key (school_id)

);


insert into school

(school_id, school_name, addr, county, city, state, zip)

values

(100, 'Graham Elementary School', '11211 Tom Adams Dr', 'Hays', 'Austin', 'Texas', 78753),

(101, 'Live Oak Elementary School', '8607 Anderson Mill Rd', 'Travis', 'Austin', 'Texas', 78729),

(102, 'Lakeway Elementary School', '1701 Lohmans Crossing Rd', 'Travis', 'Austin', 'Texas', 78734),

(103, 'Rosemont Elementary School', '719 N Montclair Ave', 'Dallas', 'Dallas', 'Texas', 75208),

(104, 'Carroll Academy', '423 W Gulf Bank Rd', 'Galveston', 'Houston', 'Texas', 77037);
```

```sql
create table student

(student_id int(5) not null,

student_name char(30) not null,

gender char(6) not null,

grade_level int(5) not null,

school_id int not null,

foreign key (school_id) references school(school_id),

primary key (student_id)

);
```

```sql
create table test

(reg_id int(5) not null,

student_id int not null,

foreign key (student_id) references student(student_id),

school_id int(5) not null,

foreign key (school_id) references school(school_id),

test_date date not null,

grade char(1) not null,

primary key (reg_id)

);
```

```sql
insert into test

(reg_id, student_id, school_id, test_date, grade)

values

(1, 221, 100, '2018-05-18', 'A'),

(2, 222, 100, '2018-05-18', 'B'),

(3, 223, 100, '2018-05-18', 'F'),

(4, 224, 100, '2018-05-18', 'D'),

(5, 225, 100, '2018-05-18', 'A'),

(6, 201, 101, '2018-05-18', 'C'),

(7, 202, 101, '2018-05-18', 'A'),

(8, 203, 101, '2018-05-18', 'F'),

(9, 204, 101, '2018-05-18', 'B'),

(10, 205, 101, '2018-05-18', 'A'),

(11, 206, 102, '2018-05-18', 'A'),

(12, 207, 102, '2018-05-18', 'F'),

(13, 208, 102, '2018-05-18', 'A'),

(14, 209, 102, '2018-05-18', 'F'),

(15, 210, 102, '2018-05-18', 'D'),

(16, 211, 103, '2018-05-21', 'A'),

(17, 212, 103, '2018-05-21', 'F'),

(18, 213, 103, '2018-05-21', 'B'),

(19, 214, 103, '2018-05-21', 'F'),

(20, 215, 103, '2018-05-21', 'F'),

(21, 216, 104, '2018-05-22', 'A'),
```

```sql
(22, 217, 104, '2018-05-22', 'B'),

(23, 218, 104, '2018-05-22', 'C'),

(24, 219, 104, '2018-05-22', 'A'),

(25, 220, 104, '2018-05-22', 'D');


insert into student

(student_id, student_name, gender, grade_level, school_id)

values

(201, 'Everett Thibodeau', 'Male', 5, 101),

(202, 'Gustavo Chavez', 'Male', 5, 101),

(203, 'Terisa Trogdon', 'Female', 5, 101),

(204, 'Brandi Cowans', 'Female', 5, 101),

(205, 'Jesenia Nicoll', 'Female', 5, 101),

(206, 'Shery Eicher', 'Female', 5, 102),

(207, 'Ciara Kunkle', 'Female', 5, 102),

(208, 'Mirna Bremner', 'Female', 5, 102),

(209, 'Herschel Keil', 'Male', 5, 102),

(210, 'Stacey Clampitt', 'Male', 5, 102),

(211, 'Edison Kuether', 'Male', 5, 103),

(212, 'Stanford Amaral', 'Male', 5, 103),

(213, 'Lacy Doom', 'Male', 5, 103),

(214, 'Nikia Cullinan', 'Female', 5, 103),

(215, 'Mike Lapointe', 'Male', 5, 103),

(216, 'Margo Diggins', 'Female', 5, 104),
```

(217, 'Shirleen Wainright', 'Female', 5, 104),

(218, 'Piedad Mcjunkin', 'Female', 5, 104),

(219, 'Sparkle Silveria', 'Female', 5, 104),

(220, 'Gilda Hanselman', 'Female', 5, 104),

(221, 'Quincy Synder', 'Male', 5, 100),

(222, 'Alberto Vo', 'Male', 5, 100),

(223, 'Jefferson Strassburg', 'Male', 5, 100),

(224, 'Warner Vicini', 'Male', 5, 100),

(225, 'Renato Evert', 'Male', 5, 100);

ALTER TABLE test CHANGE grade test_grade char(1);

Project Reports:

1. General report of all the Students with their School Name, County, City and Grade:

SQL Query:

SELECT student_name as 'Student Name', school_name as 'School Name', county as 'County', city as 'City', test_grade as 'Grade'

from student INNER JOIN school using(school_id)

inner join test using(student_id);

Result:

Student Name	School Name	County	City	Grade
Quincy Synder	Graham Elementary School	Hays	Austin	A
Alberto Vo	Graham Elementary School	Hays	Austin	B
Jefferson Strassburg	Graham Elementary School	Hays	Austin	F
Warner Vicini	Graham Elementary School	Hays	Austin	D
Renato Evert	Graham Elementary School	Hays	Austin	A
Everett Thibodeau	Live Oak Elementary School	Travis	Austin	C
Gustavo Chavez	Live Oak Elementary School	Travis	Austin	A
Terisa Trogdon	Live Oak Elementary School	Travis	Austin	F
Brandi Cowans	Live Oak Elementary School	Travis	Austin	B
Jesenia Nicoll	Live Oak Elementary School	Travis	Austin	A
Shery Eicher	Lakeway Elementary School	Travis	Austin	A
Ciara Kunkle	Lakeway Elementary School	Travis	Austin	F
Mirna Bremner	Lakeway Elementary School	Travis	Austin	A
Herschel Keil	Lakeway Elementary School	Travis	Austin	F
Stacey Clampitt	Lakeway Elementary School	Travis	Austin	D
Edison Kuether	Rosemont Elementary School	Dallas	Dallas	A
Stanford Amaral	Rosemont Elementary School	Dallas	Dallas	F
Lacy Doom	Rosemont Elementary School	Dallas	Dallas	B
Nikia Cullinan	Rosemont Elementary School	Dallas	Dallas	F
Mike Lapointe	Rosemont Elementary School	Dallas	Dallas	F
Margo Diggins	Carroll Academy	Galveston	Houston	A
Shirleen Wainright	Carroll Academy	Galveston	Houston	B
Piedad Mcjunkin	Carroll Academy	Galveston	Houston	C
Sparkle Silveria	Carroll Academy	Galveston	Houston	A
Gilda Hanselman	Carroll Academy	Galveston	Houston	D

2. Report of all the Students who have passed and eligible to move to 6th grade (middle school) with their School Name, County, City and Grade:

#Considering only A, B and C as Passing grades

SQL Query:

SELECT student_name as 'Student Name', school_name as 'School Name', county as 'County', city as 'City', test_grade as 'Grade'

from student INNER JOIN school using(school_id)

inner join test using(student_id)

where test_grade != 'D' and test_grade !='F';

Result:

	A	B	C	D	E
1	Student Name	School Name	County	City	Grade
2	Mirna Bremner	Lakeway Elementary School	Travis	Austin	A
3	Jesenia Nicoll	Live Oak Elementary School	Travis	Austin	A
4	Gustavo Chavez	Live Oak Elementary School	Travis	Austin	A
5	Margo Diggins	Carroll Academy	Galveston	Houston	A
6	Sparkle Silveria	Carroll Academy	Galveston	Houston	A
7	Renato Evert	Graham Elementary School	Hays	Austin	A
8	Edison Kuether	Rosemont Elementary School	Dallas	Dallas	A
9	Quincy Synder	Graham Elementary School	Hays	Austin	A
10	Shery Eicher	Lakeway Elementary School	Travis	Austin	A
11	Alberto Vo	Graham Elementary School	Hays	Austin	B
12	Shirleen Wainright	Carroll Academy	Galveston	Houston	B
13	Brandi Cowans	Live Oak Elementary School	Travis	Austin	B
14	Lacy Doom	Rosemont Elementary School	Dallas	Dallas	B
15	Everett Thibodeau	Live Oak Elementary School	Travis	Austin	C
16	Piedad Mcjunkin	Carroll Academy	Galveston	Houston	C

3. Count of Grade A's in each school

SQL Query:

select school_id as School_ID, school_name as 'School Name', county, city, count(test_grade) as Count_Grade_A

from school inner join test using(school_id)

where test_grade = 'A'

Group by school_id

Order by school_id;

Result:

	A	B	C	D	E
1	School_ID	School Name	county	city	Count_Grade_A
2	100	Graham Elementary School	Hays	Austin	2
3	101	Live Oak Elementary School	Travis	Austin	2
4	102	Lakeway Elementary School	Travis	Austin	2
5	103	Rosemont Elementary School	Dallas	Dallas	1
6	104	Carroll Academy	Galveston	Houston	2