**5.1 Business Description and Entity-Relational/Conceptual Database**

**-- Goal and the business description.**

1. record entry

After each examination, the teachers of each class enter the grades of the students, including the students' names, school numbers, subjects, grades, and date of entry.

1. Result inquiry

According to a number of key words for students' results, you can also count the average report of a class and the ranking of all the 3.students.Result modification

If there are mistakes in the examination, the students' achievements can be modified.

4. course inquiry

The teacher looks at his own curriculum and the students in the course.

**-- Detail descriptions of Entity Types and their attributes: their type, size and meanings**

Course includes

Courseid: the number of the course int(11)

name: the name of the course varchar(45)

advanced placement:course that must has been learned beford this course varchar(45)

academic credit: the credit of the course varchar(5)

elective: this course is elective or compulsory varchar(45)

category: this course is elective or professional varchar(45)

school hours: how long the course takes int(11)

Offering includes

Offeringid: term course int(11)

Courseid: the number of the course int(11)

Teacherid: the number of the teacher int(11)

year: course year varchar(45)

semester: spring or autumn varchar(45)

Teacher includes

Teacherid: the number of the teacher int(11)

name: the name of the teacher varchar(45)

gender: the sex of the teacher varchar(10)

age: the age of the teacher int(11)

Student includes

Studentid: the number of the student int(11)

name: the name of the student varchar(45)

gender: the sex of the student varchar(10)

age: the age of the student int(11)

Take includes

Takeid: the number when students take course int(11)

Studentid: the number of the student int(11)

Offeringid: term course int(11)

time: the time when entry records varchar(45)

score: score of the course double

**-- Detail Description of Each Relations: Meaning of the relations ship,descriptive data,Mapping constrations (1-1, 1-m, m-1, m-m)**

There are 4 tables in total:Course、Offering、Teacher、Student,and it can be seen from the diagram that there is a certain connection between the table and the table.

The relationship between tables and tables can be divided into three categories: one to one、one to many、many to many.

The connection is used to indicate the relationship between the two tables, and the digital tables on the line represent a specific correspondence.

The specific relationships between the tables are described as follows:

course-offering：A course can have multiple choices for students, for example, different term and different teachers can be regarded as different choices.But a specific choice only corresponds to one of the courses, so the relationship between the two is one to many.

offering-teacher: A class can be taught at different times by different teachers, and the same teacher can teach different classes at different times.So the relationship between the two is one to many.

offering-students：An optional course can be chosen by a number of students, and one student can choose a number of courses,So the relationship between the two is many to many.

    Because there are many attributes in tables, it is more complex, so on this basis, a new table take is abstracted to represent the information and grades of a student's selected courses,   mainly including Studentid、Courseid 、Takeid、time score.

**--E-R database diagram. Submit a picture or screenshot for the picture**

