



**TED UNIVERSITY**

CMPE 232

PROJECT FINAL PHASE  
MUSIC COMPANY COURSE  
GROUP 20

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## Descriptions of the tables in our DB

### • Entitiy - Relations

**1. Student:** There are 133 Students in the School and students are stored here with their unique ID numbers , names, ages, adresses, experiences and enrollment day given by the school. Each student's ID is unique.

The experience attribute indicates how many years the student has been studying.

**2. Instructors:** There are 35 Instructors and they are also stored in the database together with their ID numbers, names , salary, experience, expertise and adress. Each Instructor's ID number is unique. The Expertise attrirubute indicates which instrument they are a master of.

**3. Section:** A Section entity is the entity that has the most relationship with other entities in the database. Each section has an ID number and has 6 attributes named Classroom ID, Section ID, Day, Instrument Name , Clock and Instructor ID.

**4. Instruments:** Instruments entity has three attributes named Instrument Name,Department and Material. 15 different instruments are taught in the course and these instruments are combined under 5 categories in the database as stringeds,percussions,with keys,winded and bowed ones.

**5. Clasroom:** Clasroom entity has four attributes named Clasroom ID, Department Name and Capacity. Classrooms are identified by their ID numbers and they belong to a spesific department. Classes naturally have certain capacities and unique ID numbers. They also depend on specific departments. They are attached to the department according to the instrument taught in the classes.

**6. Departmant:** Department entity has two attributes named Department name and Budget. Departments take their names according to the names of the courses to be given within them. For example, the name of the department where percussion instruments are taught is Stringed Instruments Department.

### • Relationship - Relations

**1.Takes:** In Takes relationship relation we bond weak entity Section with our Student entity. This relationship occurs whenever a student wants to take any course such as guitar course or cello course at a specific section. Takes relationship relation includes students id, course that they are going to take and section.

**2.Teaches:** Teaches is required to specify a relationship relation and the relationship between section and instructors. It was created to show which teacher taught which lecture in the

database. It has three attributes named Instructor ID, Section ID and Instrument Name.

**3.Section-Classroom:** This relationship specifies the class in which section will occur. It takes three primary keys and three foreign keys. Which are Section\_ID, Instrument\_Name and Classroom\_ID. Section\_ID and Instrument\_ID comes from Section table. Classroom\_ID comes from Classroom table.

**4.Section Instrument:** It is a weak relationship between Section and Instruments tables. Because if there was no musical instrument, it could not have a section that would have occurred. So, there is a weak relationship between the Section and the Instruments tables.

**5.Instrument-Department:** Instrument-Department is a relationship relation and it is created to show the relationship between Instruments and departments. This relation has been created since the department names are given according to the name of the instrument in which the lesson is given.

## **Changes that we have made since Phase 1**

In the first stage, we evaluated the feedback from you. In this direction, we first made additions to our ER diagram.

- **ER Diagram:** We added our cardinalities that were not added in the first step in our ER diagram.

Then we brought our tables closer to daily life. In general, although our data contains a variety of features to support our queries, we have added new features to our three tables in order to expand our database. These are “Student”, “Instructor” and “Instruments” tables.

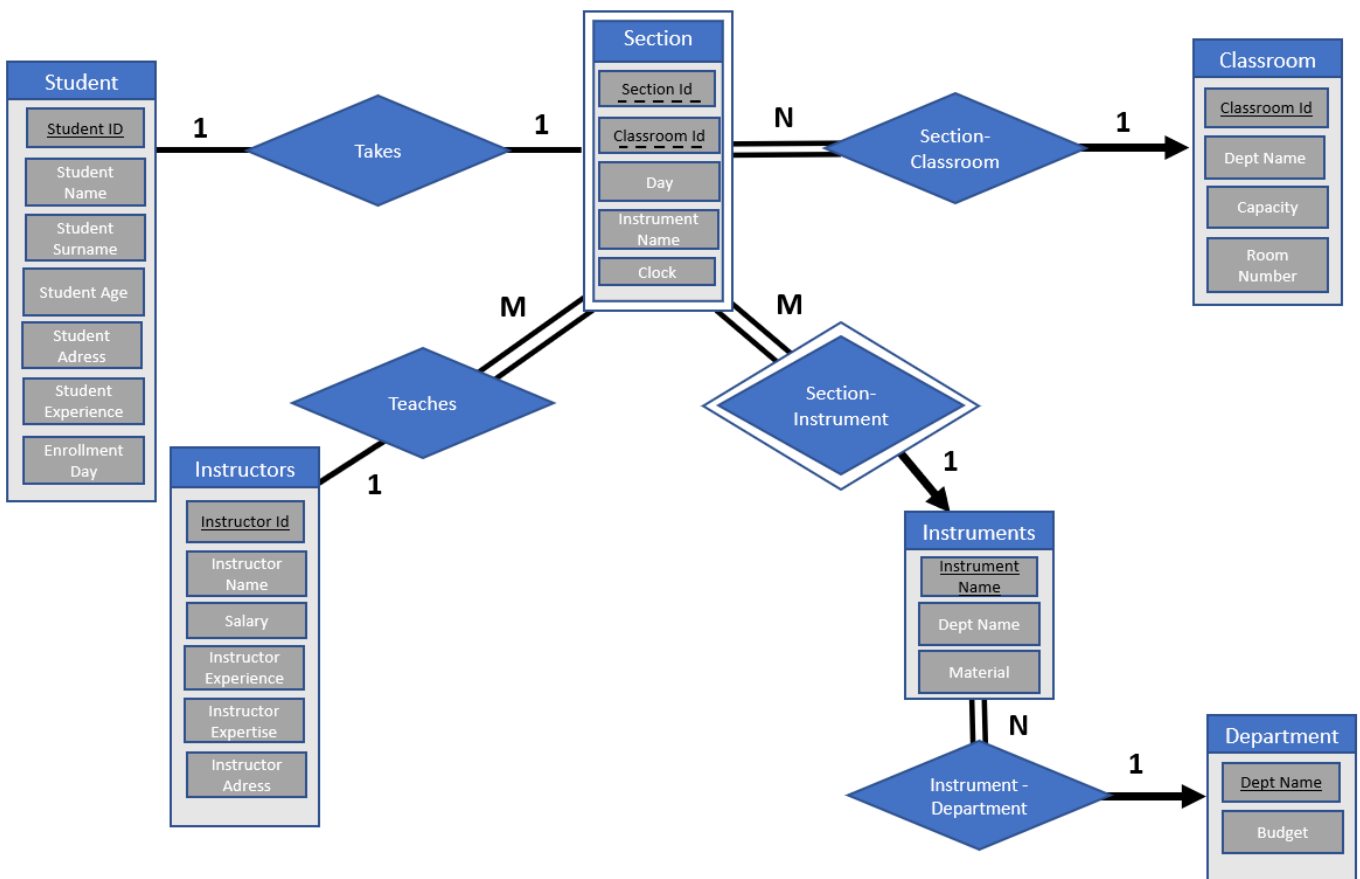
- **Student Table:** We added the surname, age, address, experience and registration date features to the student table, which we think a student can have in real life.
- **Instructors’ Table:** Likewise, we added experience, expertise and address features to the instructor table. While adding expertise, we thought that a music teacher in daily life could be more successful in a musical instrument even if he played more than one instrument.
- **Instruments’ Table:** We also added the material that the musical instrument is made of to the instruments table. Like wood, metal.

On the other hand, we made an important change in the schema.

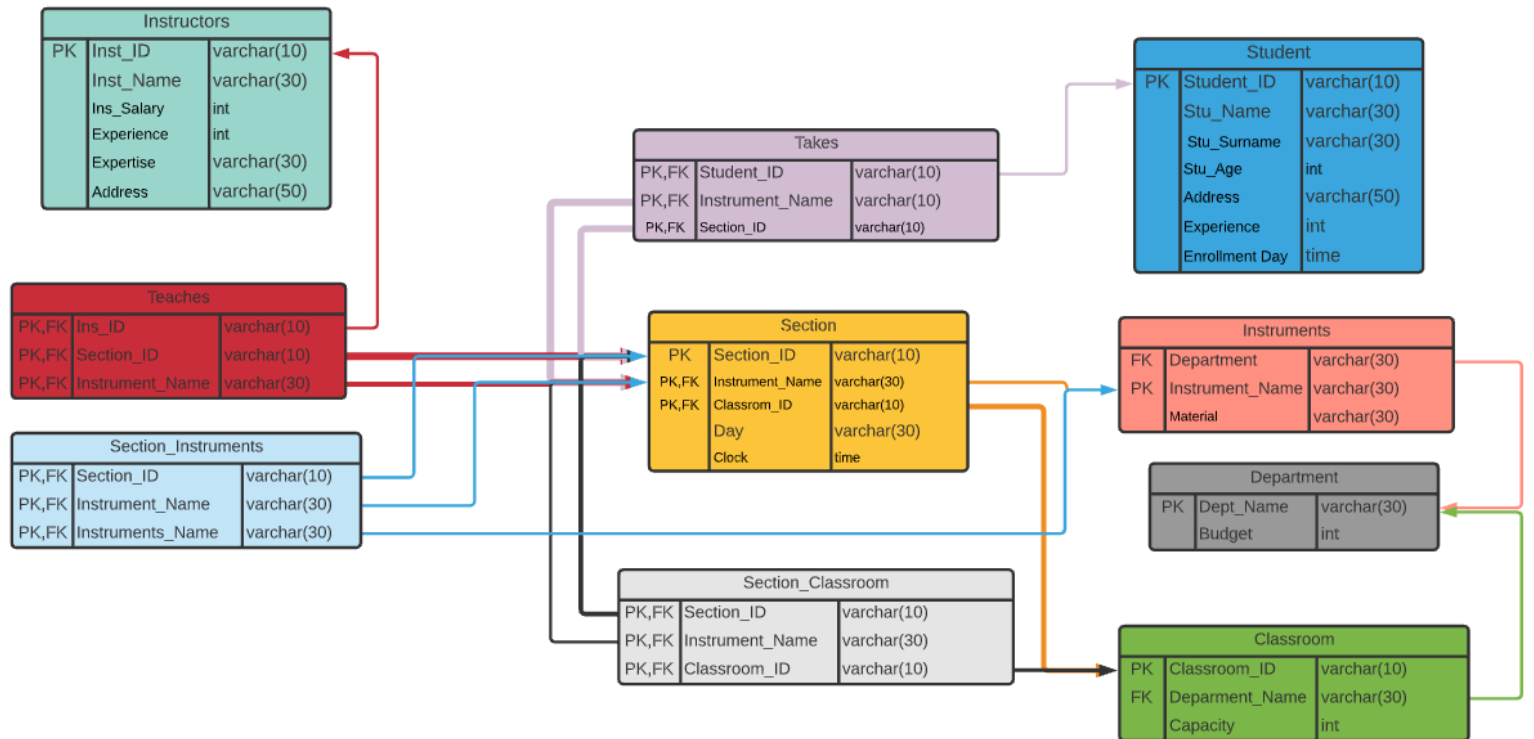
- **Schema**, we checked our table in order not to repeat our data, and we removed the "Instructor Name" feature in the "Section" table that we saw that it was repeating.

**As a slight change**, we increased the length of the "Instrument Name" to 30 characters. Since, the length of some musical instruments does not match the length when creating our table.

## Final version of our ER Diagram



## Final version of our Schema



## **Explanation of the Java Application Program**

In generally in our java application, firstly we try to connect our java application to our database, then we do the operations (deletion, listing, inserting, updating) as the user wants.

To detail the how application works, we try to initilize connection object to be connected our database, after the connection we print a menu to console to show what are the users' capabilities and we take these menu and operations into a while loop and in this loop we used switch-case method to make application more appropriate. Whenever user want to insert a data into our database, we get their detailed information for the table that they want to enter a data and we also need detailed information for deletion and updating a data for 2 different tables too. If user wants to quit from database and application, user will enter "q" and we exit from while loop. After then we get into finally method. In finally method we break our connection to database. We have also made changes in the method of listing datas (writeResultSet). In this method firstly we get column names for specified table name in a for loop and in the second loop we get every data for each column.