Project 1. Manage Data in University Database

(Due 02/25/2020 11PM)

Description

First, I will use the following university database (link to the university database) to help you with this project assignment. In this programming project, we will practice several basic features both in SQL and web programming. As a first project this can be challenging for beginners, but for those of you that find it easy, you can also consider the bonus question which is worth an additional 10Pts (total 110 Pts out of 100).

You have four weeks to do this first project. Thus, plan to work on it early so you don't use any of your flex days on this project.

We will practice the following features in this project:

- *SQL Features*

    1. Basic `Select` statements
    2. Insert new data into the tables.
    3. Update old data in the tables based on the row numbers.
    4. Delete records from the tables based on the row numbers.
    5. Find the primary key of the current table through `information_schema`.

- *Web Programming Features*

    1. Use `Bootstrap` (Glyphicons) on the buttons.
    2. Use `CSS` to adjust the styles of GUI components.
    3. Pass data through hidden parameters.
    4. Invoke PHP programs from JavaScript functions.
    5. Change GUI components using JavaScript functions.
    6. Send data to the server through HTML forms or parameters.
    7. Use a uniformed way to access data in different tables
    8. Use a single file for all tables. For instance index.php is used to dispaly all tables.

Requirements

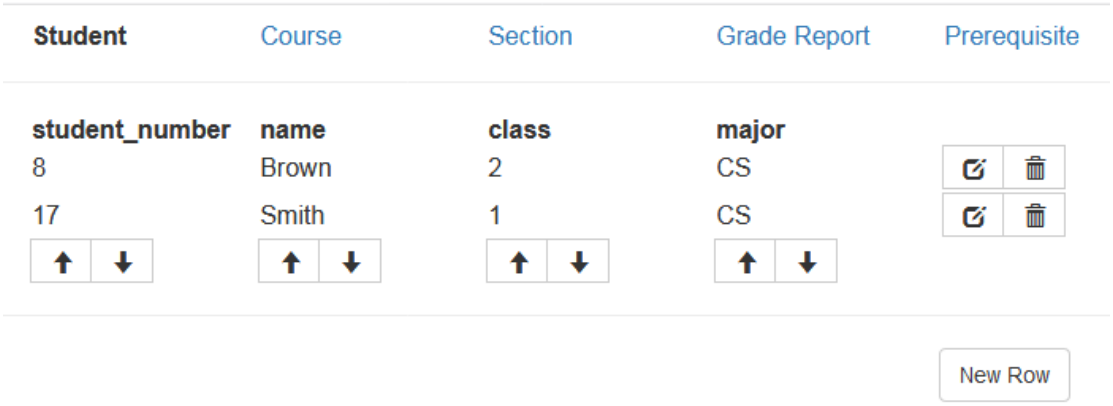
1. **Database**

    We will use the `university database`. In this database, there are 5 tables: `course`, `grade_report`, `section`, `prerequisite`, and `student`. From the SQL script, you can see that three tables have a primary key: `course`, `section`, and `student`. The remaining two tables do not have any primary key. How do we identify the records in them?

Note: We cannot modify the tables.

2. **Enter data**

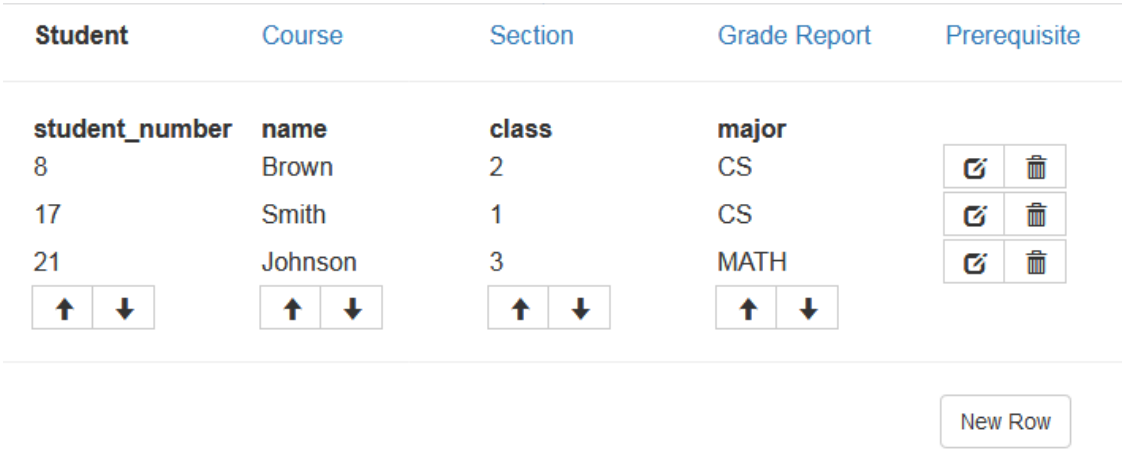
We need to insert new records into each table through a simple User Interface as follows.



When you press the **New Row** button, you will see

Then you can enter data as follows,

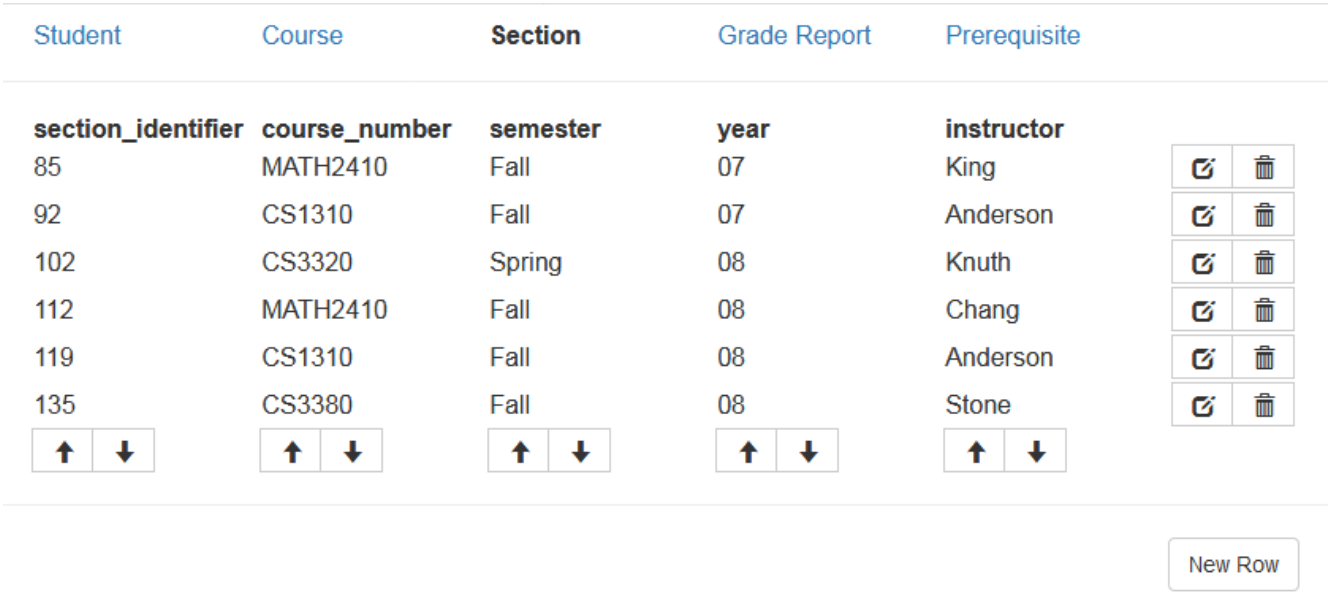
After you press the **Enter** button, you will see a new row is added.



Similarly, you can enter new rows into all the other tables.

3. **Switch tables**

   Click the hyperlink of a table to switch to it, then you can enter data in this table through a similar interface as above.



4. **Data validation not required**

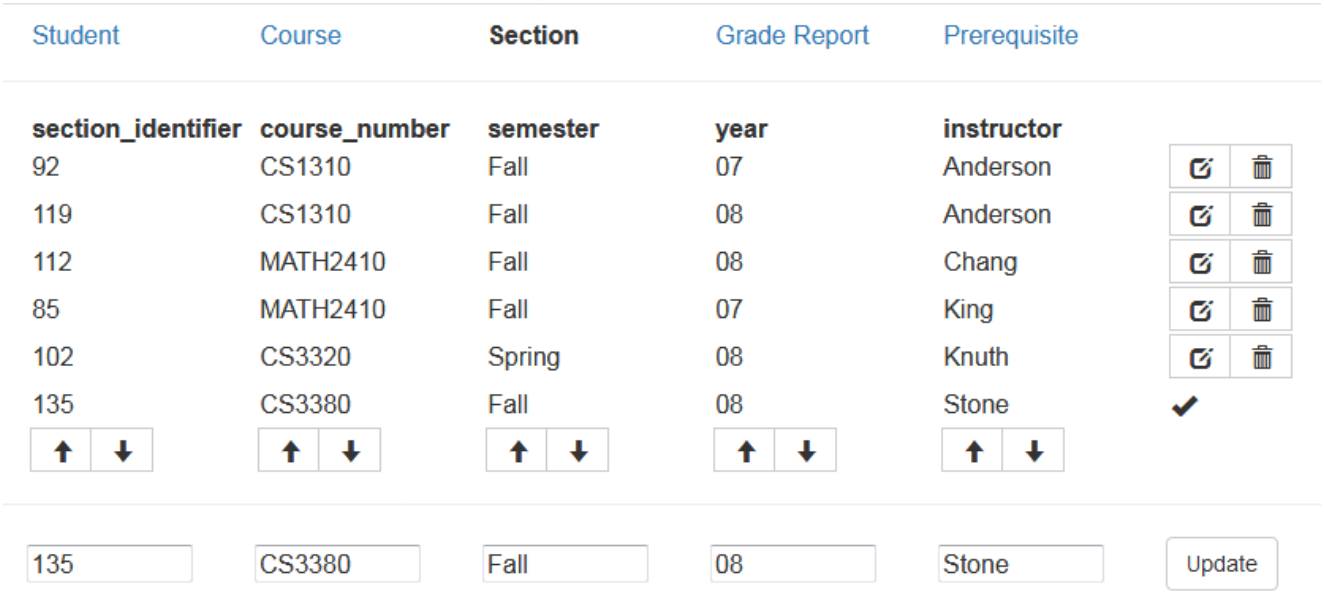
   In order to make our first project as simple as possible, we assume that all the data entered is valid. We will leave the data validation part to our second project.

5. **Sort the tables based on the selected column**

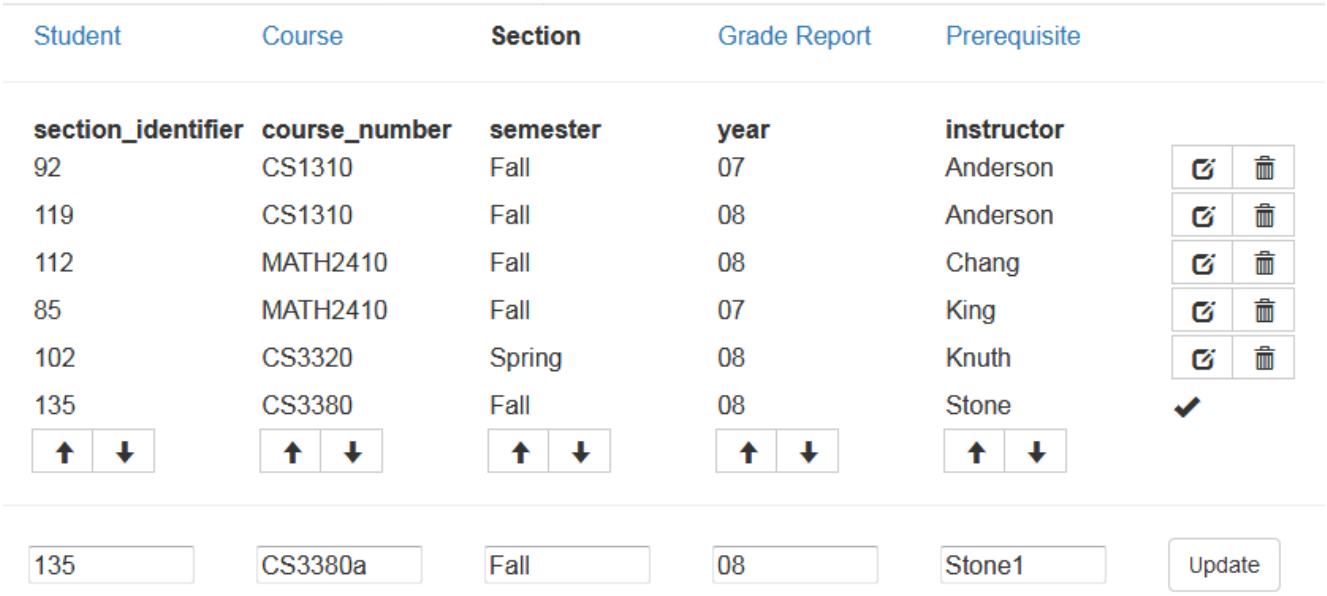
   You can use the arrow buttons at the bottom of each column to sort the data.

6. **Edit a row in any table**

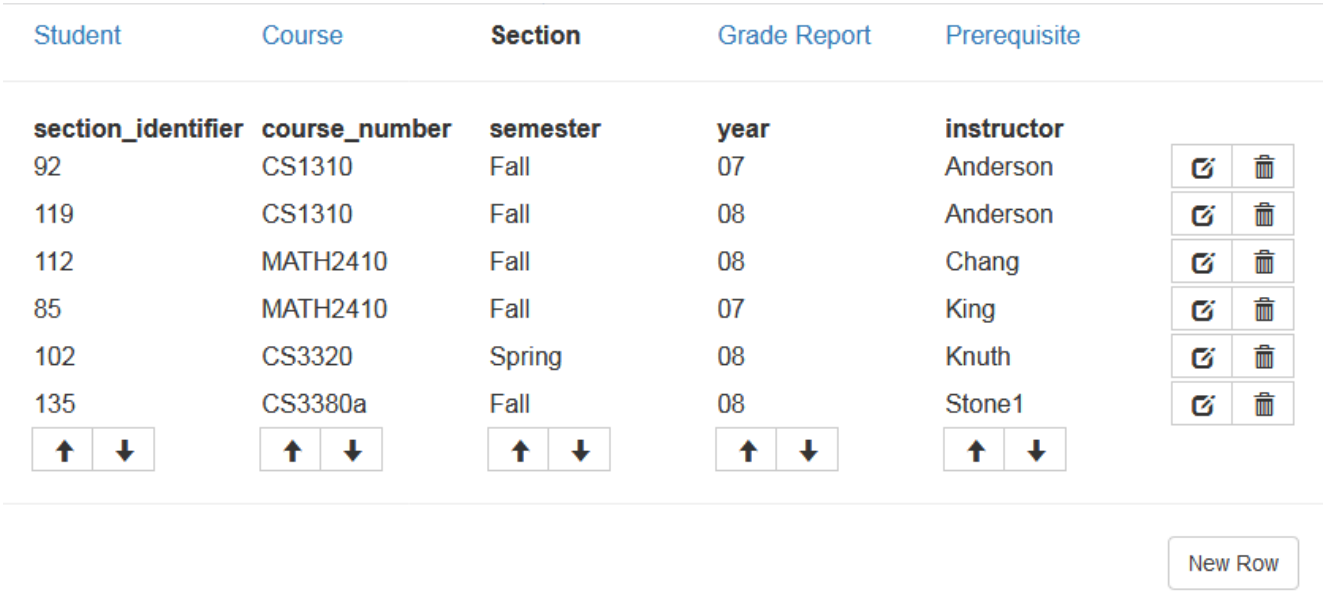
   When you click the **Edit** button associated with each row, you can see that the old values are displayed at the bottom of the table.



Then you can change the data as follows,



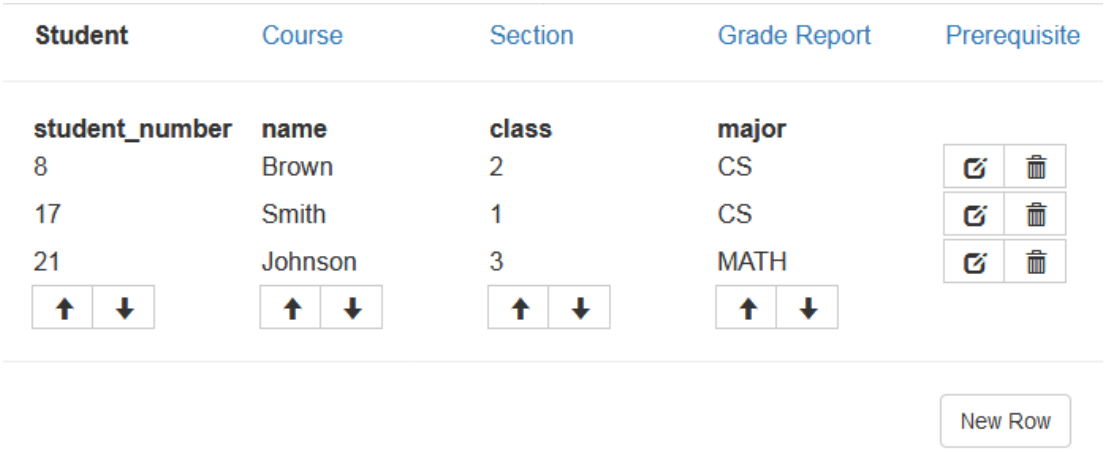
After you click the **Update** button, you modify the row.



7. **Delete a row in any table**

   When you click the **Delete** button associated with each row, you delete the row immediately.

   Before deletion:



   After deletion:

Grading Rubrics

You have your freedom to design the look of your pages. The bottom line is to implement the above features as described.

1. [20pts] View Tables (Database fetching)
2. [15pts] Sort Columns (two way sort)
3. [15pts] Insert a row into a table
4. [15pts] Delete a row
5. [15pts] Edit a given row
6. [10pts] Single PhP file for all tables (See T3 for details/sample)
7. [10pts] Readability (comments, buttons, design, page height, width, and alignment, etc.)
8. **[10pts] Bonus Question**

   Build an admin interface that allows changes in the table structure. For instance, if we would like to edit table STUDENT to include a dependant contact number. Make sure that you can also insert values to all entries if necessary. If you have questions, regarding the requirements for this bonus, do not hesitate to contact me.