

Project. Basic SQL Operations on University Database

(Due 5/14/2023 Sun)

Description

In this programming project, the main purpose is to get all the students familiar with the basic SQL operations and web programming techniques. It is expected that most of the students will use PHP and MySQL to do this project. You have 2 weeks to complete this project.

Requirements

1. Database

We will use the `university` database that was posted before. In this database, there are 5 tables: `course`, `grade_report`, `mysection`, `prerequisite`, and `student`.

2. Enter data

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

<u>Student</u>	<u>Course</u>	<u>Section</u>	<u>Grade Report</u>	<u>Prerequisite</u>
student_number	name	myclass	major	
17	Smith	1	CS	
8	Brown	2	CS	
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="button" value="Add"/>

You have the freedom to design your own user's interface, just allowing the values of all the fields in the current table to be entered.

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.

<u>Student</u>	<u>Course</u>	<u>Section</u>	<u>Grade Report</u>	<u>Prerequisite</u>
section_identifier	course_number	semester	myyear	instructor
85	MATH2410	Fall	07	King
92	CS1310	Fall	07	Anderson
102	CS3320	Spring	08	Knuth
112	MATH2410	Fall	08	Chang
119	CS1310	Fall	08	Anderson
135	CS3380	Fall	08	Stone
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="button" value="Add"/>				

4. Editing rows

Add an **Edit** button for each row, similar to the one below,

<u>Student</u>	<u>Course</u>	<u>Section</u>	<u>Grade Report</u>	<u>Prerequisite</u>
course_number	course_name	credit_hours	department	
CS1310	Intro to Computer Science	4	CS	<input type="button" value="Edit"/>
CS3320	Data Structures	4	CS	<input type="button" value="Edit"/>
MATH2410	Discrete Mathematics	3	MATH	<input type="button" value="Edit"/>
CS3380	Database	3	CS	<input type="button" value="Edit"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="button" value="Add"/>

- When you click the **Edit** button of the row to be edited, you will see the interface as follows,

<u>Student</u>	<u>Course</u>	<u>Section</u>	<u>Grade Report</u>	<u>Prerequisite</u>
course_number	course_name	credit_hours	department	
CS1310	Intro to Computer Science	4	CS	<input type="button" value="Edit"/>
CS3320	Data Structures	4	CS	<input type="button" value="Edit"/>
MATH2410	Discrete Mathematics	3	MATH	<input type="button" value="Update"/>
CS3380	Database	3	CS	<input type="button" value="Edit"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="button" value="Add"/>

- The user can edit some of the values in the fields, and click the **Update** button to change them in the database.

Note: The editing step could be implemented using the AJAX technology if you like to try it.

5. Deleting rows

When you click the **Del** button for each row, the corresponding row is deleted.

student_number	name	class	major		
8	Browna	2	CSb	Edit	Del
17	Smith	1	CS	Edit	Del
↑ ↓	↑ ↓	↑ ↓	↑ ↓		

6. Generating a report for transcript

Add two links at the top of the page as follows,

[Home](#)
[Transcript](#)







Student	Course	Section	Grade Report	Prerequisite
course_number	course_name	credit_hours	department	
CS1310	Intro to Computer Science	4	CS	Edit
CS3320	Data Structures	4	CS	Edit
MATH2410	Discrete Mathematics	3	MATH	Edit
CS3380	Database	3	CS	Edit

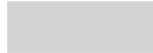
When a user click the link **Transcript**, you display the transcript view as follows using the existing data from the database.

TRANSCRIPT					
Student_name	Student_transcript				
	Course_number	Grade	Semester	Year	Section_id
Smith	CS1310	C	Fall	08	119
	MATH2410	B	Fall	08	112
	MATH2410	A	Fall	07	85
Brown	CS1310	A	Fall	07	92
	CS3320	B	Spring	08	102
	CS3380	A	Fall	08	135

7. Show maximum information for the first column

Use AJAX to implement a simple feature: When you click the **ShowMax** button, the maximum of the first column of the current table is displayed in the small gray box.

Student	<u>Course</u>	<u>Section</u>
student_number	name	class
8	Browna	2
17	Smith	1
 	 	 











Show Max

Extra Credit: Use jQuery to Implement 3 Features

1. Show the row input components in jQuery (1%)

When you click the **New Row** button, a few input fields are displayed:

student_number	name	class	major		
8	Browna	2	CSb	<input type="button" value="Edit"/>	<input type="button" value="Del"/>
17	Smith	1	CS	<input type="button" value="Edit"/>	<input type="button" value="Del"/>
 	 	 	 		
				<input type="button" value="New Row"/>	



Show Max

2. Implement the editing feature in jQuery (1%)

Convert the current regular AJAX implementation to jQuery implementation.

3. Implement the updating feature in jQuery (1%)

Convert the current regular AJAX implementation to jQuery implementation.

=====The End=====