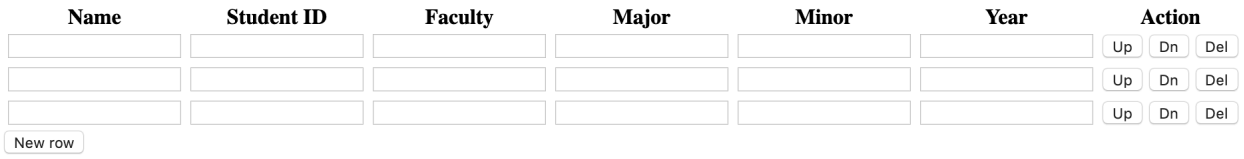
COMP 307 Assignment 3

This assignment is to be completed individually.

Introduction

In this assignment you will be creating a simple spreadsheet application using HTML, CSS, and JavaScript. Start by downloading **spreadsheet.html** which is given to you. Open it in the browser and you will see the following:



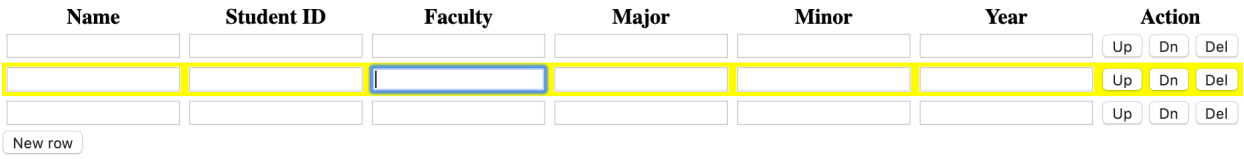
This is a spreadsheet for entering information about students. The **New row** button at the bottom is for adding new rows to the spreadsheet. Each row has 3 action buttons on the right:

- The **Up** button moves a row up
- The **Dn** button moves a row down
- The **Del** button deletes a row

If the Up button is clicked for the first row or if the Dn button is clicked for the last row, then nothing happens.

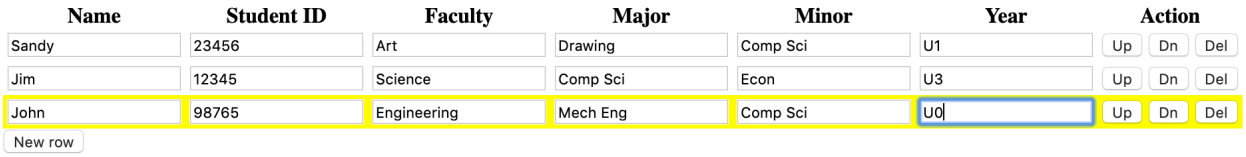
Currently, these buttons do not do anything. It is your job to implement these row operations using JavaScript.

In addition to these row operations, you must implement a row highlighting functionality. When the user clicks anywhere on a row (i.e. inside the text field of a row), the background color of that row needs to turn yellow, and no other row's background color should be yellow. For example, if the second row is clicked, then we should see

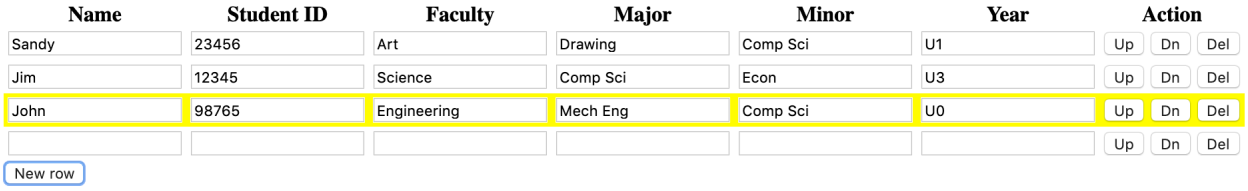


Example Use Case

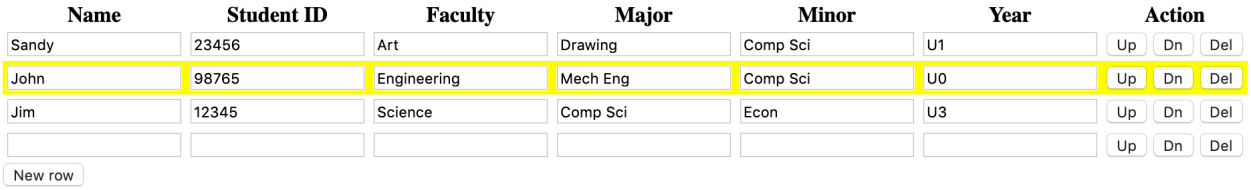
Below we present an example use case. Suppose the user starts by entering some data into the spreadsheet.



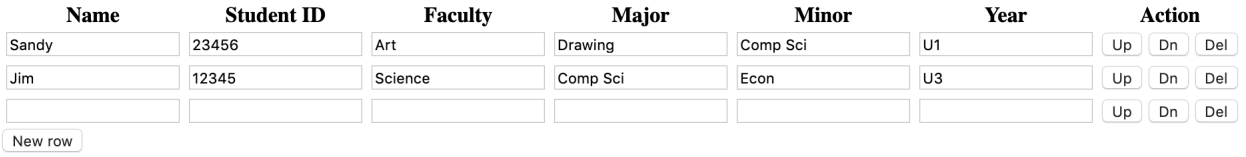
Now, suppose the user clicks on **New row**. Then a new row is added to the bottom, which can be used to add an additional entry.



Suppose the user then clicks on the **Up** button for the 3rd row, then this row moves up and becomes the second row.



Finally, suppose the user clicks on **Del** for the second row. Then the second row is removed.



Requirements and Restrictions

- You are **not allowed** to use any JavaScript libraries (i.e. jQuery) for this assignment. Directly work with the DOM API provided by JavaScript.
- You must write all of your code inside spreadsheet.html. Do not use any external CSS or JavaScript file.
- Feel free to modify the HTML code provided in spreadsheet.html in any way that you think would be helpful. Also feel free to write additional CSS rules inside spreadsheet.html

Methods to Read About

Before starting on the assignment, you need to understand the difference between each pair of DOM methods listed below. We discussed childNodes vs children during class. The other pairs follow a similar idea. You can find information and examples for all of these methods at

https://www.w3schools.com/jsref/dom_obj_all.asp. These methods will be helpful to you for this assignment, and you need to know these methods for the final exam.

- childNodes vs children
- parentNode vs parentElement
- nextSibling vs nextElementSibling
- previousSibling vs previousElementSibling

Suggestion

You should keep the console in the developer tools open when doing this assignment. We have discussed the developer tools several times in the lectures. In chrome, you can open it with Ctrl-Shift i (Windows, Linux) or Cmd-Option-i (Mac). You can use the console.log() method to print things out to the console, and you can see errors on the console when your program throws an exception.

What to hand in

Hand in the completed **spreadsheet.html**