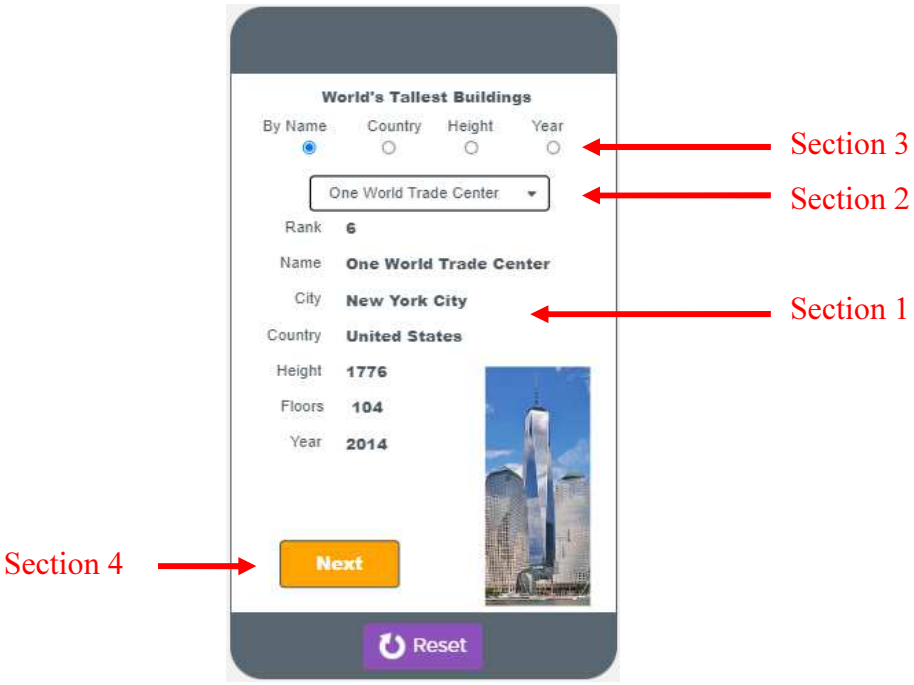
Final Project

1. Introduction

Create an app to display information on the world's tallest buildings. Below is the user interface.



2. App Functionality

The user interface can be divided into four (4) sections. Each section has a specific functionality and level of difficulty to program as labeled in the user interface shown above. The section numbers are ordered from easy to hard. Section 1 is the easiest to program and Section 4 is the hardest to program.

i) **Section 1** contains all the labels and an image for displaying the information obtained from a record in the database table. The labels used are the column names in the table.

ii) **Section 2** is the dropdown list. If you do not have Section 3 implemented then you will just display the building names in this dropdown list. When the user clicks on an item in the dropdown list, the program will read the record from the database table for the selected building name and display the information in Section 1.

You should at least be able to do i) and ii) because this is almost exactly like what we have done in class.

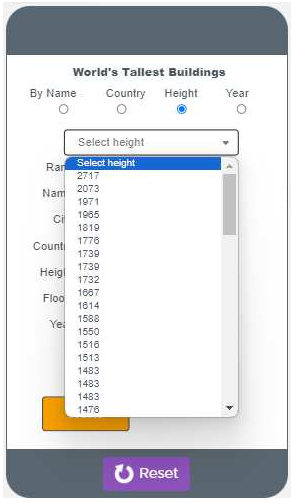
iii) **Section 3** is the radio buttons. The four radio buttons allow the user to select one of four lists to display in the dropdown list.

- If the Name button is selected then the dropdown list will show all the building names from all the records in the database table as shown next.

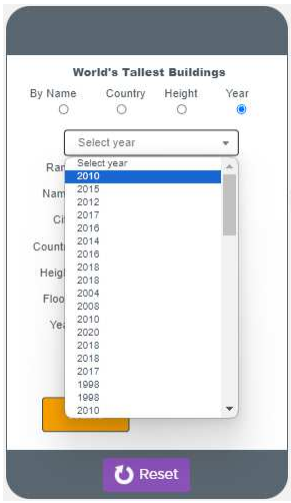
This is basically the part from Section 2

- If the Country button is selected then the dropdown list will show the countries from all the records in the database table as shown next.

- If the Height button is selected then the dropdown list will show the heights from all the records in the database table as shown next.



- If the Year button is selected then the dropdown list will show the years from all the records in the database table as shown next.



Again, just like in ii) above, when the user clicks on an item in the dropdown list, the program will read the record from the database table for the selected record and display the information in Section 1. The difference between iii) and ii) is that in iii) you have four different dropdown lists so the program will have to determine which dropdown list is currently being displayed and read the correct record from the database table.

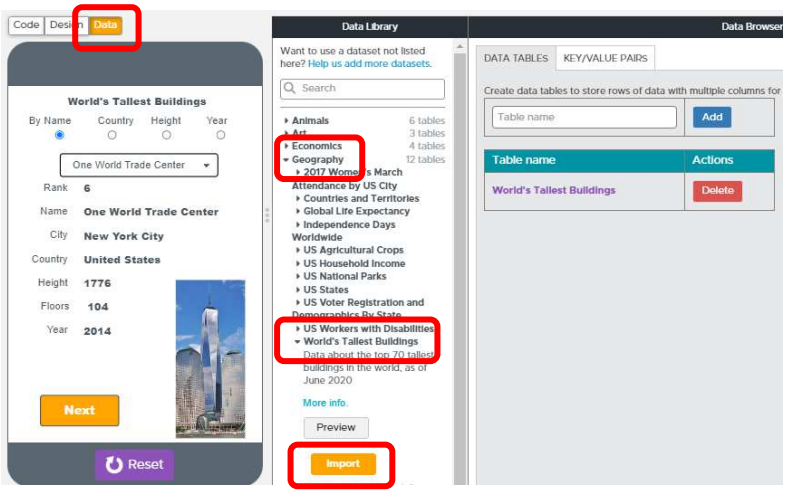
Notice that in the Country and the Year lists, and maybe also in the Heights list, there are many duplicate records. For example, in the Country list, there are many buildings in China. So if the user selects China then the program will always display the first record which is records[0].

iv) **Section 4** is the Next button. The problem from iii) above is that when there are duplicate records such as from selecting China for the Country, the program will always display the building information for the first record. The Next button allows the user to display the next record with the matching criteria. So clicking Next the first time will display the

second building from China, and clicking Next again will display the third building from China, etc. until the end of all the buildings for China.

3. Database Table

The database table with all the information on the world's tallest buildings is given. Here's how to import the table:

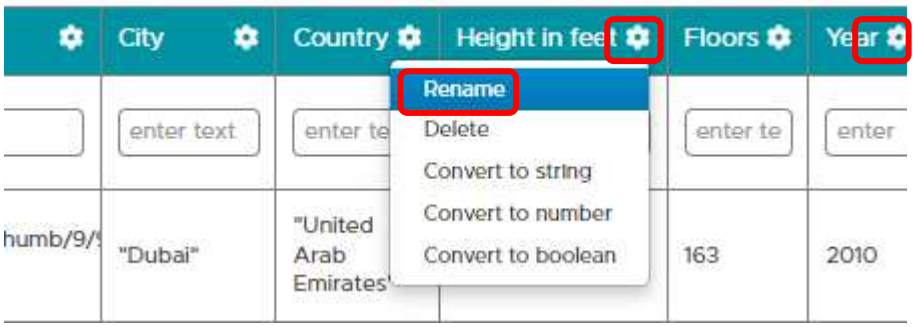


Click on the **Data** tab. Click on **Geography**. Click on **World's Tallest Buildings**. Click the **Import** button.

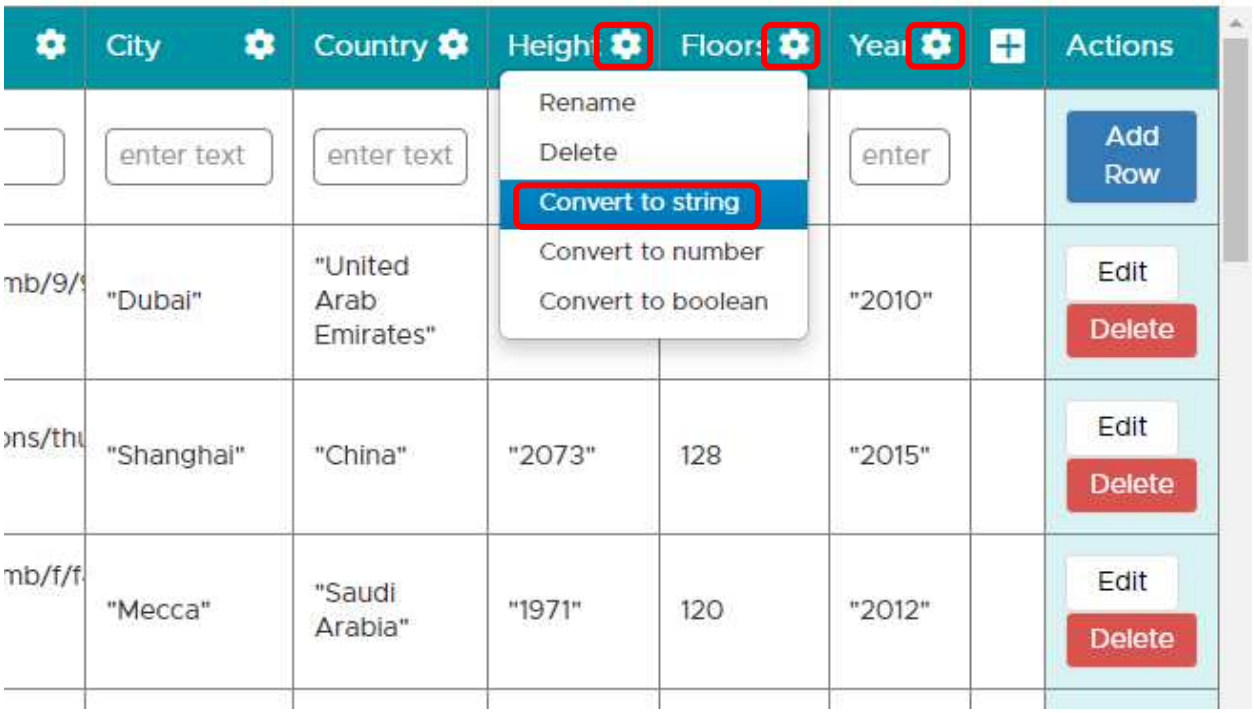
The table has the following column names:

- Rank
- Name
- City
- Country
- Height in feet
- Floors
- Year opened

After importing the database table into your program, you'll need to manually rename the "Height in feet" to just "Height" and "Year opened" to just "Year." To do this, first open the table. Click on the **gear icon** for the "Height in feet" column. Click on **Rename** and change the name. Do the same thing for the "Year opened."



You'll also have to convert the data for the three columns, Height, Floors and Year, to string. To do this, Click on the **gear icon** for each of the three columns and click on **Convert to string**.



4. Grading

Your grade will be based on how much functionality and Sections (as described above in App Functionality) you have implemented in your app.

F – App has bugs and cannot run properly.

D – Implemented Section 1 only.

C – Implemented Sections 1 and 2.

B – Implemented Sections 1, 2 and 3.

A – Implemented Sections 1, 2, 3 and 4.

5. Code Snippets

Here are some code snippets to help you get started.

```
var index = 0;
function Clear() {
  setText("rank", "");
  setText("name", "");
  setText("city", "");
  setText("country", "");
  setText("height", "");
  setText("floors", "");
  setText("year", "");
  setImageURL("image1", "");
}
onEvent("byName", "click", function() {
  readRecords("World's Tallest Buildings", {}, function(records) {
    var list = ["Select name"];
    for (var i =0; i < records.length; i++) {
      appendItem(list, records[i].Name);
    }
    setProperty("dropdown1", "options", list);
    setProperty("dropdown1", "index", 0);
    Clear();
  });
});
```