CSci 4131: Internet Programming
Assignment 3: JavaScript & Google Map
Posted on 10/06/2015 Due: 10/12/2015

Objective: The objective of this assignment is to learn use of Google Map API with JavaScript in developing Web documents with geographic information.

Background: In the previous assignment, we built a slide-show webpage to display different venues in campus using JavaScript functions. But, the more intuitive way to show this information is to place them on a map. As a result, in this assignment, we will present the same information using a Google map. You will place on the campus map icons at the locations of various buildings, and when a user clicks on an icon the information for the corresponding will be displayed in an information window. You will place markers on your map and find directions between any 2 points.

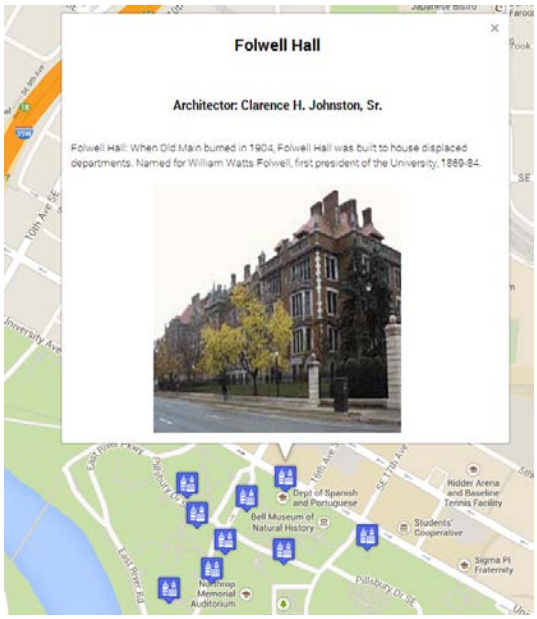
Part I: Place markers on the map

We will place the venue on the Google map using the corresponding information. Each venue will be given a set of information as: Name, Architects, and Coordinates

- **Requirements:**
  1. Display the venue as a marker at the correct location.
  2. Use the provided icon image for the marker on the map. (File name: icon.png)

     
  3. When clicking on the marker on the map, a small information window should pop up and show the corresponding information.
  4. The information window should include: a) the name of the venue as the title. b) the architect of the building, and) a general description.
  5. The information window should show the corresponding venue image.

- **Example:**



- **Supplemental information**

Name	Architects	Coordinates*
Armory	Charles Aldrich	44.977276, -93.232266
Pillsbury Hall	Leroy Buffington with Harvey Ellis	44.977018, -93.234444
Folwell Hall	Clarence H. Johnston, Sr.	44.978354, -93.234409
Jones Hall	Charles Aldrich	44.977995, -93.235415
Pillsbury Statue	Daniel C. French, sculptor	44.978239, -93.236964
Wesbrook Hall	Frederick Corser	44.976662, -93.236310
Nicholson Hall	LeRoy Buffington with Harvey Ellis	44.977197, -93.235973
Eddy Hall	LeRoy Buffington	44.977679, -93.236707
Music Education	Warren H. Hayes	44.971201, -93.241777
Wulling Hall	Allen Stem and Charles Reed	44.976306, -93.237437

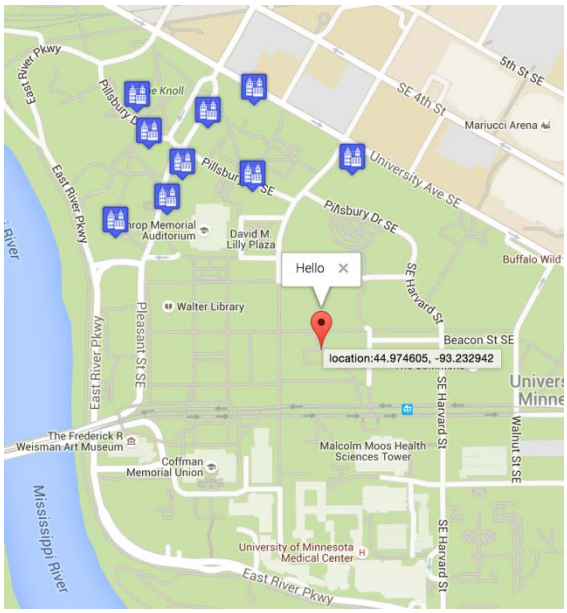
*Coordinates are in latitude, longitude format.

*general descriptions, building pictures and the icon image can be downloaded.

PART II: PLACE A MARKER USING MOUSE CLICK

In this part, we want to place a marker based on our mouse click and show some dynamic information (i.e., the clicked GPS coordinates).

- **Requirements:**
  1. Place one single marker at mouse clicks (left click)
  2. Show the coordinates when moving the mouse over (as the marker title)
  3. When click on the corresponding marker on the map, a small information page should pop up showing “Hello”.
- **Example:**



PART III: DISPLAY DIRECTIONS BETWEEN 2 POINTS ON THE MAP

In this part, we want to display the directions between one of the buildings and the marker you place on mouse click

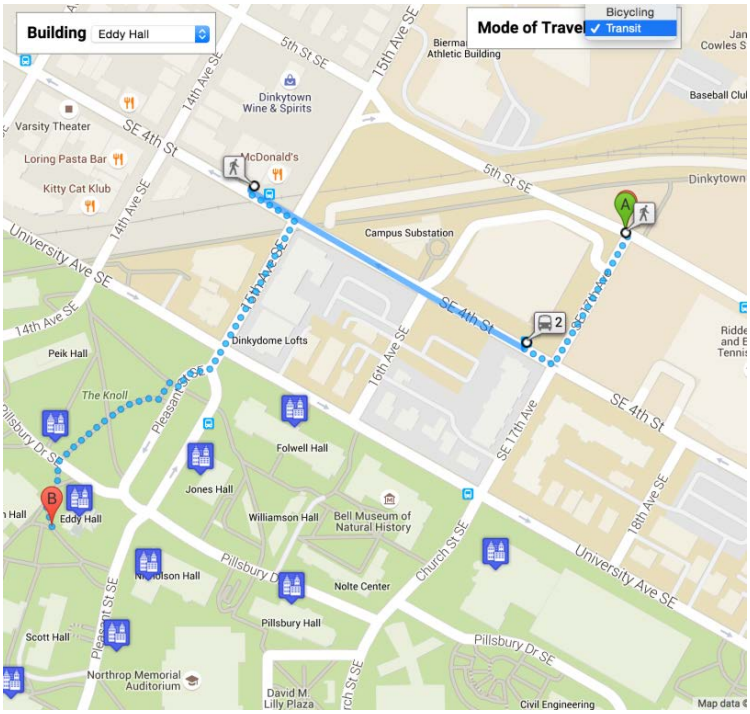
- **Requirements**

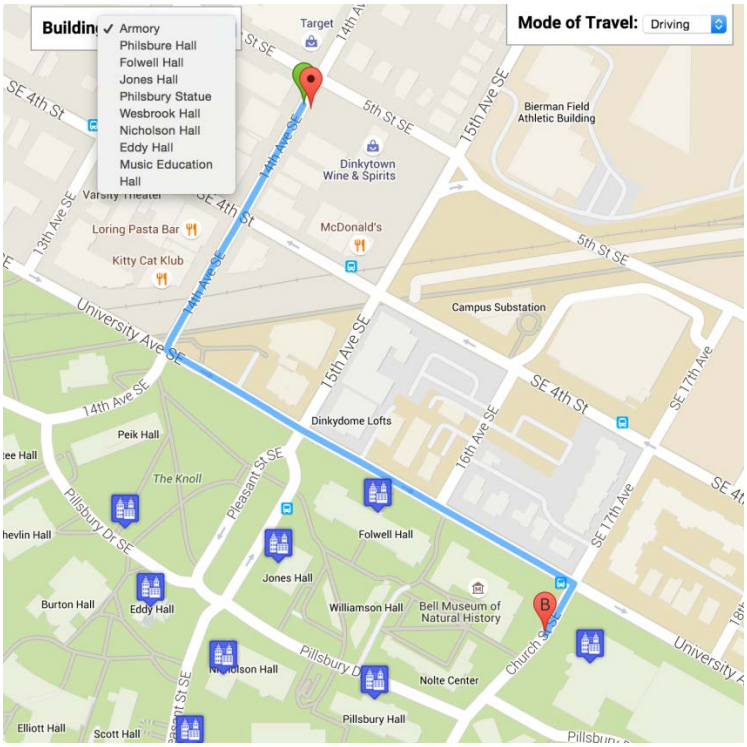
1. Create a select list with the buildings added in Part I
2. Create a select list for 4 different modes of travel (Driving, Walking, Bicycling, Transit)
3. Display the path between the building selected from the list and the marker you place on mouse click, using the mode of travel selected
4. The path should automatically change when you
   a) Change the building selection

b) Change the mode of travel

c) Change your marker through mouse click from Part II

- **Examples:**





PART IV: REFERENCES

To accomplish the above task, you may need to read some of the following document about Google Map APIs:

1. Get a JavaScript API key for Google Maps

https://developers.google.com/maps/documentation/javascript/get-api-key

2. How to include a Google map

https://developers.google.com/maps/documentation/javascript/examples/map-simple

3. How to place a marker

https://developers.google.com/maps/documentation/javascript/examples/marker-simple

4. How to write something in the information window
https://developers.google.com/maps/documentation/javascript/examples/infowindow-simple

5. How to capture the event on a Google Map

https://developers.google.com/maps/documentation/javascript/events

6. How to use directions services of the Google Maps API

https://developers.google.com/maps/documentation/javascript/examples/directions-simple

7. How to use traveling modes in directions

https://developers.google.com/maps/documentation/javascript/examples/directions-travel-modes

PART V: GRADING RUBRIC

1. Part I : 50% (Each requirement equals 10%)
    a. Display the venues as markers at the correct locations
    b. Use of the customized icon image for the markers on the map
    c. When click on the marker on the map, a small information window should pop up.
    d. The information window should include name of the venue as a title, the architects and the description as the content.
    e. The information page should show the corresponding building image.

2. Part II : 15% (Each requirement equals 5%)
    a. Display a marker at the mouse click location
    b. Show the coordinates when moving the mouse over (as the marker title)
    c. When click on the corresponding marker on the map, a small information page should pop up showing “Hello”.

3. Part III: 30%
    a. Select list to show list of buildings (5%)
    b. Displaying directions between the selected building and the clicked marker (15%)
    c. Displaying directions based on mode of travel (5%)
    d. Displaying directions for every selection of building and mode of travel (5%)

4. Proper coding style with indentations (5%)