# Csci 4131
# Internet Programming: JavaScript, Continued

Lecture 9, February 13th

Spring 2018

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# Logistics

- HW 3, Google Maps and Form Update is due this **Friday, 2/16** at **11:55PM**
- *Remember* – late homework submissions accepted only until 11:55 PM the following day a penalty. See syllabus for details

# Last Time

- Regular Expressions
- Forms
- Arrays and Images
- Started automating behavior using setInterval, clearInterval

# Today

- A bit on Google Maps
- Finish our examples on automating Behavior with JavaScript
- A close look at closures in JavaScript
- A close look at how events are handled

# A bit on Google Maps

- Start to turn our focus from just the client (Browser), over to the server side (Web Services, HTTP Protocol, Server Side Scripting)

# Google Maps Examples

- Setting up and displaying a Google Map
- Putting a marker with an information window on a Google Map
- Using geocoding to look up an address, and then put a marker and information window on a Google Map

# How we devised our solution

- Note, each Browser has a Navigator object that you can use to get your location
- https://www.w3schools.com/jsref/obj_navigator.asp

# Note

- Geolocation (Browser)  != Geocoder (Google API)

- Not the same as google Geocoder – which we use to place markers for the places listed in your schedule on a google map

# To find nearby places and put them on a Map

- We use Google places service
- placeService = new google.maps.places.PlacesService(map);
- Service is used when “Search Near Me” Button is “clicked” by user
- Note, placeService is a global variable, initialized when the map is initialized

# For directions, we use

- Google Maps DirectionsRenderer
- Google Maps DirectionsService

```
directionsDisplay = new
google.maps.DirectionsRenderer;

directionsService = new
google.maps.DirectionsService;
```

- GetInfo, Calculate, and Display Route
- Services are used  when Get Directions button is “clicked” by user.
- Note, directionsService and directionDisplay are global variables, initialized when the map is initialized

# From Last Class

- Recall

  Select Random Pictures Manually

  Random Pictures\RandomPicture.html

- How would we alter our manual version of random pictures to do it automatically?

- Lets have a look at a  Window Method that can enable us to do that.

# Syntax and Description

```
setInterval(code,millisec,lang)
```

| Parameter | Description |
|---|---|
| code | Required. The function that will be executed |
| millisec | Required. The intervals (in milliseconds) on how often to execute the code |
| lang | Optional. JScript \| VBScript \| JavaScript |

```
clearInterval(id_of_setInterval)
```

# Example

- Let's Build a Simple Clock That Displays the time in the format

  HH:MM:SS AM/PM

With A Stop Button

# Lets have a look

Clock

# Exercise 1 – Hand in at the end of class Everyone Submits their own answer, (with name and x.500id) but you can consult with each other

- Add a start and clear button to the clock
  - Update the HTML -
    - add the start and clear buttons
  - Clear button should call a javascript function to clear the text field
  - Start button should start the clock anew.

  testclock.html

Hints:

The start button should now call a start function that uses setInterval the onclick event of the “Start” Button

The “clear” button should set the “value” attribute of the text element to “” (the empty string)

# JavaScript Closure Example: What is Printed???

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset = "utf-8">
    <title>Example of simple function closure</title>
                        <script>

                          function addN (x) {
                             return function (y) {
                                        return x + y;
                                        };
                          };

                           var add3 = addN(3);  // what object does add3 point to?
                           var result = add3(5);

                           alert(result);

                        </script>
  </head>
  <body>
  </body>
</html>
```

simpleclosure.html