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| **Create a brand new document using the naming convention HWX-MUid.docx (example: HW10-johnsok9.docx).**  **Objective**: The objective of this exercise is to:   1. Continue working with Ajax 2. Understand external web API documentation 3. Write web client using JavaScript/jQuery/Ajax   **Submit**: screenshots, your word document, html files and links to your web page(s)  You **may** discuss the concepts with your fellow students  You **may** **not** show or share code with your fellow students  You **may** **not** show or share code with internet sources  You **may** discuss this with your instructor or TA. |

# Part #1: Create GitLab project

*Estimated time: 10 minutes*

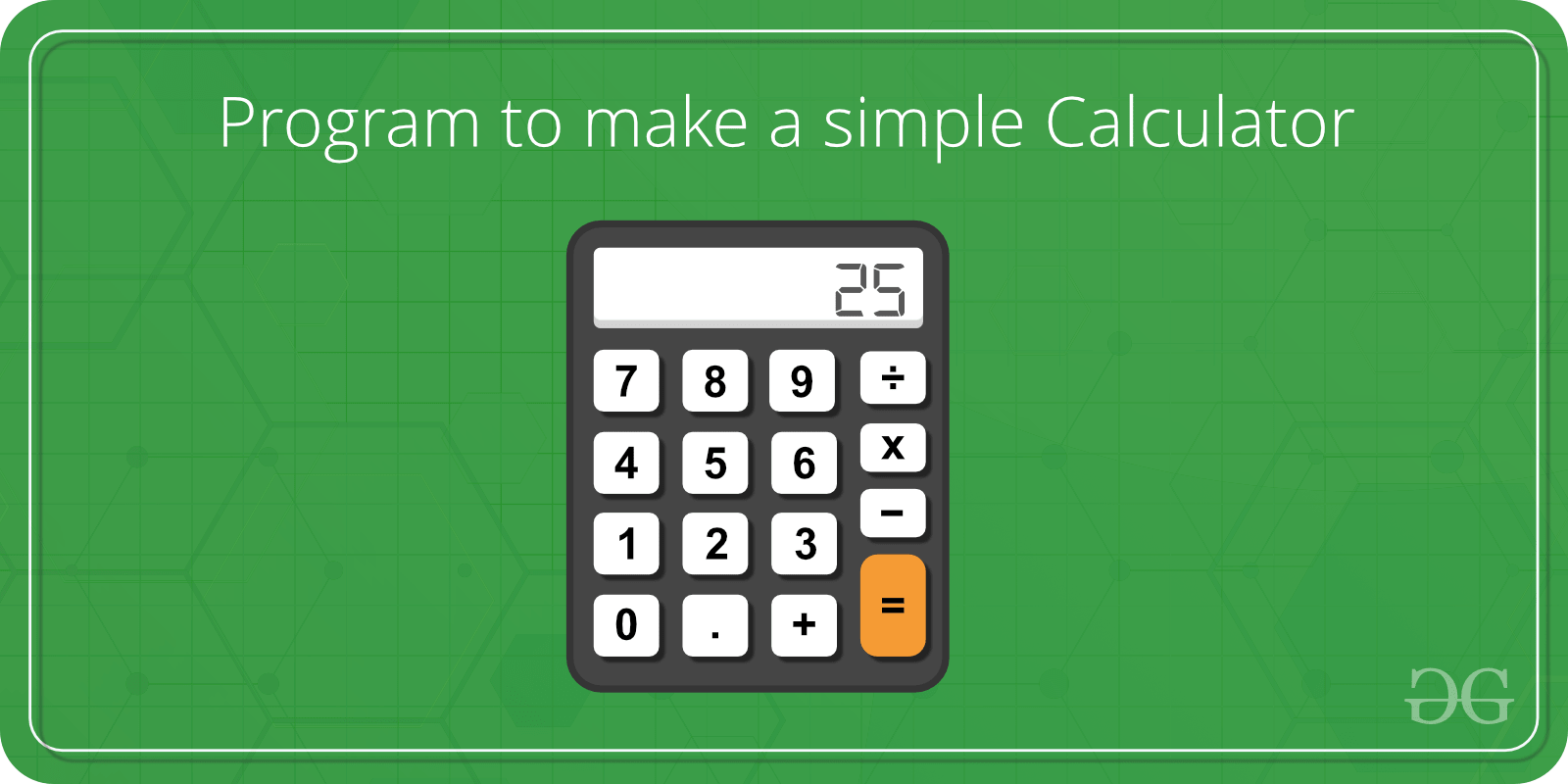
**Exercise:**

* Gitlab
  + Make a new directory in your cse383 projects directory.

# Part #2: Calculator

*Estimated time: 2-4 hours*

**Exercise:**



Your job is to create a good looking 4 (+ - \* / =) function calculator using bootstrap (style and colors are up to you). **All code to access the DOM, form fields etc. must be done using jQuery syntax.**

**You will create an html file with external CSS and external JavaScript.**

As the operator presses the digit or . buttons, it should add them to the display. Once they press the + - \* / buttons, it should store the first number, keep track of which operation, clear the screen, and allow for the next entry.

Pressing the = button initiates your JavaScript ajax routine to call the api described below. It will package up the request and send it by ajax to a cloud based api server which will respond with the answer, which you will display. The remote api call will (and must) do all the math for you. It will respond with a value which you will then display in the screen. You must manage all errors returned by the api in some manner (don’t blow up or stop working) (divide by zero for example).

**This is an example for the Add function. Notice the word Add right before the ? and then the values of n1 and n2.**

<https://api.clearllc.com/api/v2/math/Add?api_key=bed859b37ac6f1dd59387829a18db84c22ac99c09ee0f5fb99cb708364858818&n1=4&n2=5>

**Summary:**

* 1. Math Operations
     1. Web
        1. Create 2 numbers using buttons
        2. Select math operation
        3. Call ajax routine and display answer
     2. Process
        1. Call cloud math server
        2. Base url https://api.clearllc.com/api/v2/math/
        3. Commands (case insensitive)
           1. Add
           2. Subtract
           3. Multiply
           4. Divide
        4. Arguments (case insensitive)
           1. N1
           2. N2
           3. Required api\_key bed859b37ac6f1dd59387829a18db84c22ac99c09ee0f5fb99cb708364858818
        5. Example Call (note this is only one line, it wrapped in word)

<https://api.clearllc.com/api/v2/math/Add?api_key=bed859b37ac6f1dd59387829a18db84c22ac99c09ee0f5fb99cb708364858818&n1=4&n2=5>

* + - 1. Returns
         1. Result (if good)

{"result":9}

* + - * 1. Error (if bad request)

{"error":{"code":400,"context":null,"message":"Invalid or missing resource name.","status\_code":400}}

* + - * 1. Math Error (divide by zero for example)

{"error":{"code":400,"context":null,"message":"Divide by zero error.","status\_code":400}}

# Part #3: Write New Word Document

*Estimated time: 15 minutes*

**Exercise:**

* Always make sure it includes your name, class, assignment etc.
* Explain in complete sentences (relating to this assignment):
  + what worked
  + what didn’t
  + how long it took
  + What you liked
  + What you didn’t

# SUBMIT:

* Word Document
* Screenshots (may be inside word or separate)
  + Attach a screenshot showing GitLab with changes submitted
  + Attach a screenshot of your fully functional web page (including output)
* Files
  + Attach the html, CSS and JavaScript files
* Paste the URL of your page into the submission as a comment

Graphical user interface

Description automatically generated

Graphical user interface

Description automatically generated with medium confidence

Table

Description automatically generated with medium confidence