## CPSC 473 - Web Programming and Data Management

### Homework Assignment 5 - Spring 2016

#### Section 02 - due March 21, Section 01 - due March 23

In this assignment, you will build a Web Service API for flipping a coin. Use [Node.js](https://nodejs.org/) and [Express](http://expressjs.com/) to build a server to the following specification:

1. Your server should respond to the following HTTP requests:
   * POST /flip
   * GET /stats
2. A POST to /flip should include a JSON payload with attribute call and value heads or tails, e.g.

{ "call": "heads" }

1. In response to a POST to /flip, the server should randomly choose heads or tails, compare that value to the user’s choice, and respond with a JSON object with attribute result and value win or lose, e.g.

{ "result": "win" }.

1. Keep track of the number of wins and losses. A GET to /stats should return these values, e.g.

{

"wins": 3,

"losses": 2

}

1. Take screenshots of the results of several coin tosses. (See *Notes* below for how to test your code.)

#### Working with Other Students

You may complete this exercise on your own, but you are encouraged to work together with another student.

If you choose to work with a partner:

* Submit only a single assignment.
* Include both names on the submission.
* Each student in a pair will receive the same grade.
* You may discuss the assignment with other pairs, but each pair must submit its own work.
* You may choose to work with a different partner on future assignments.

#### Submission

E-mail the following to [csuf.kenytt.net@gmail.com](mailto:csuf.kenytt.net@gmail.com) by 11:59p on the date indicated:

1. The URL of a new GitHub repository containing your server.
2. Screenshots showing your API in action

Include your name and your partner’s name (if you have one) in your e-mail.

Set the Subject: line of your e-mail to

[CPSC 473-02] Assignment 5  
or  
 [CPSC 473-01] Assignment 5

as appropriate. Monday night is Section 02; Wednesday night is Section 01.

You may submit multiple times before the deadline; I will only grade the most recent submission before the deadline, unless your e-mail indicates that I should do something else. Late work will not be accepted after the deadline.

#### Grading

This exercise is worth 10 points: 2 points for each feature from the list above.

A point may be deducted each time you fail to follow the instructions as given. This includes submission instructions.

#### Notes

* Use the [cURL](https://curl.haxx.se/) utility and the Python [json](https://docs.python.org/2/library/json.html) module to test your code, e.g.

$ curl --silent --request POST \  
 --header 'Content-Type: application/json' \  
 --data '{ "call": "heads" }' \  
 '<http://localhost:3000/flip>' | python -m json.tool

* Your code must pass JSHint with no errors or warnings using [this](https://gist.github.com/ProfAvery/c5db1692c457c526601c) [configuration](https://github.com/ProfAvery/node-box/blob/master/provisioning/files/jshintrc).
* Your code must be properly formatted. If you don’t know how to do this, use [JS Beautifier](http://jsbeautifier.org/).