**Quiz 1**

**BEFORE YOU DO ANYTHING: LOOK OVER THE ENTIRE QUIZ, THEN READ THE LIST BELOW THOROUGHLY. THEN READ IT AGAIN. THEN READ IT A THIRD TIME. THEN CONTINUE ON. GOOD LUCK!**

Remember:

1. Read all instructions *carefully*. Reread them a few times just to make sure. I am expecting you to match whatever I have asked for as I have asked for it. Don’t lose points because you misnamed a file or you forgot to answer a part of a question.
2. Answers to long-form questions should be written in Word/LibreOffice or Google Docs and saved as a Word document or PDF; code should be written in your IDE of choice.
3. You must be in Lally 102 (*i.e.*, in attendance today) to take the quiz.

**Part 1**

Copy these four questions into a new Word document and answer them in **long-form**.

* 1. Describe in your own words how the web works! In as much detail as you can, describe **all** the sequences of events that take place from the time a user presses Enter on the keyboard after typing in [www.rpi.edu](http://www.rpi.edu) into the address bar to when the webpage is finished rendering in the browser. Specifically, tell me in great detail the protocols in action. (10 points)

When you type in [www.rpi.edu](http://www.rpi.edy), your computer needs to find the IP address. They do not know it in advance so they send a request to resolve a domain name. They first search through the DNS cache and any available external source. Next, the computer loads the local DNS cache database; however, because its not always there, the next step would be to contact the Internet Service Provider and its DNS to resolve a domain name. The resolver looks for the correct IP addresss, once its in the cached record, the computer gets the IP address and connects to the website. If the ISP’s server cannot resolve the domain name with its DNS, it contacts other DNS. This process can continue to happen until the IP address is resolved. Once the DNS gets the IP address of the first web server, your browser establishes TCP connection with the IP address. The client then sends the HTTP request to the web server. The client than waits for a response. The server will either provide the information to the client or refuse to provide the info. Once this happens you will be able to view the request site and either party can then terminate the function. In order to view the page a DNS resolution and the HTTP protocol occur.

1.2 What is the difference between a property and a method in JavaScript? (3 points)

Properties are associated with javascript objects. A property of an object is like a variable attached to that object. The properties of an object define the characteristics of theobject and you can access those properties by using dot-notation with an object.

A method is also associated with an object; however, a method is a function. Methods are defined like normal functions, exceot that they have to be assigned as a property of an object.

A method is a property of an object that is a function.

* 1. Explain how your browser chooses which CSS rule to apply to a tag in the case where there are multiple rules that could apply. (3 points)

Your browser chooses which CSS rule to apply based on its specificity. The order it sees the rules follow the order of external CSS, internal CSS and in-line CSS. In line CSS being the highest specificity. For external, the browser will cache only once, but for internal it will cache the CSS every time it sees a call.

1.4 State **four** total advantages of “separation of concerns,” for any permutations of that term we discussed in class. (4 points)

Separation of concern can refer to the ability to separate HTML, CSS, JS, etc. without putting everything in one file. One advantage is that this breaks a large application into smaller units of encapsulation. By separate the structure out, we allow for screen reader users to better read web pages as they rely HTML. It also means that if a user interacts with your site with a less-capable device, they can still access your code because the device will ignore what it can’t read. Separation of concern also allows for easier collaboration of your code because it can more clearly be separate into different parts. Separation of concern reduces code complexity as well. By separating file.s,

**Part 2**

Here is documentation for a totally free, no sign-up required, API: <https://www.frankfurter.app/docs/>

You are going to make me an app to display the monetary conversion rate from Euro to many other currencies.

You must use the /latest endpoint (<https://api.frankfurter.app/latest>). You may make an API call or you may download the data to your hard drive (make sure the file name ends in .json) to then be served. In either case, you must use an AJAX request to retrieve the JSON data when displaying it in your app.

You must create buttons for **at least 5** of the different currency conversions that the API request gave you. When clicking on a button, an event must trigger that toggles display of that particular currency conversion.

Be creative! In the grading rubric, half of the score for HTML/CSS and JS is creativity. The other half is implementing the above correctly. I want to see a lot more than black text on a white background.

Finally, write a README.md file explaining everything you did and documents your creativity. This file should be several paragraphs in length, at a minimum. Good long-form paragraphs have at least 4 sentences in them.

**Submission**

1. Create a new **branch** in your individual lab repo on GitHub named **quiz1**.
2. Push everything you want us to grade into your **quiz1** branch.
3. **Do not** merge that branch into main.
4. Failure to use a separate branch will result in a 15 point reduction from your quiz grade.
5. Failure to name the branch correctly will result in a 20 point reduction from your quiz grade.
6. Merging the quiz1 branch into main will result in a 30 point reduction from your quiz grade.
7. The above 3 items are cumulative in the case of multiple errors.
8. **Pushing to your quiz1 branch with a timestamp after 2:00 PM (Section 1) or 4:00 PM (Section 2) will result in an automatic 0 for the quiz.**

**Rubric**

* Part 1: 20 points
* Part 2: HTML & CSS (35 points), Javascript (35 points), README.md (10 points)
* **TOTAL: 100 points**

**Extra Credit (+5 points)**

1. In what year did Prof. Plotka graduate from RPI? What was his major?