Lab 3 – Simple Tip Calculator – 75 points

Introduction

This lab will have you write a very simple HTML and CSS UI for a tip calculator and add the JavaScript needed to make it work.

Requirements

Use the included wireframe mockup as a guide to what components should be in the app UI and a general layout. You need to include everything in the mockup, but you may lay it out differently. Just make sure it is clear to understand how it would work. The extra credit (EC) is optional and not a requirement. To earn the extra credit all other requirements MUST be complete, which means none of the requirements received a 0%. No partial credit for EC.

- **User Interface (UI) input types – 5 pts:** The UI needs 4 text inputs, 1 range slider input, and the appropriate labels and text. Make sure you use actual <label> elements to label your form controls with either the explicit or implicit method. You need to wrap all form controls inside a form tag, but you do not need to set the method or action attributes, JavaScript will process it.
    - The Tip field should use an input of range type with a min value of 0 and max value of 100. Look up input type of range. **Negative numbers are not allowed**.

- **External files (CSS and JS) and URL – 10 pts**: Submit both your GitHub Repository and your GitHub Pages hosted file URLs in the canvas assignment text field. CSS and JS files.

- **User Interface (UI)/Design – 10 pts:** Make sure the form has some CSS styling, so it stands out and doesn't just blend into the background. Borders, background colors, or images. It should be neat and easy to read. You will lose points if anything is hard to see or read.
You are free to style it how you want but you must apply enough CSS so that the HTML doesn't look like it would by default. Graduate students read your additional requirements below.

- **Disabled Fields – 10 pts:** The Tip Percentage, Tip Amount, and Total Bill with Tip boxes should be disabled so a user cannot type in any values. You will put the values in these with JavaScript. Style them differently to show this too. Look up disabled attribute on a form control.

- **The Input – 20 pts:** The Bill Total field should be a text field the user can type a number in. You should also do validation to make sure if someone enters **a non-number or negative number** in the Bill Total field, they get some kind of notice or error message.

- **Output – 20 pts:** You should be able to keep changing values in Bill Total or the Tip Slider and the form will keep updating. The values you output in the Tip Amount or Bill Total with Tip should only use 2 decimal places. Look up the toFixed() method on a number object. **When testing make sure all values make sense. For example, a bill of 100 with a tip of 10% should have a tip amount of 10 and a total with tip of 110.**

Earn Extra Credit – 3 Pts

To earn extra credit on this project, a currency conversion feature must be added. This feature allows users to select their preferred currency (such as Dollar, Yen, or Rupee) from a dropdown menu. It dynamically updates the values of both the "Tip Amount" and "Total Bill" labels based on the selected currency.

For example:
- Bill Amount: $100
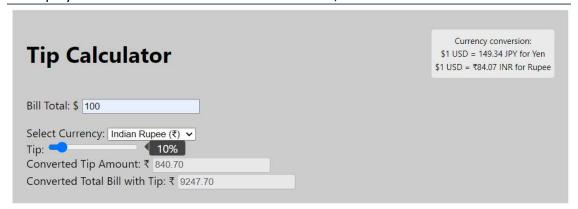- Selected Currency: Indian Rupees (₹)
- Tip Percentage: 10%

First, the tip amount is calculated as 10% of $100, which is $10. After converting $10 to Indian Rupees at a rate of ₹84.07 per dollar, the tip amount becomes ₹840.70.

Next, the total amount (bill + tip) is calculated:
- Bill in Rupees: ₹8,407 (100 dollars converted to rupees)
- Tip in Rupees: ₹840.70
- Total Amount: ₹9,247.70

The currency conversion rates (e.g., $1 USD = ₹84.07 INR or $1 USD = 149.34 JPY for Yen, ₽ for Ruble) should be displayed somewhere in the form for reference, so users can see the conversion values being applied.

Additional Information

The app needs to listen for an "input" or "change" event on the form element. Either will fire anytime any of the form's controls are changed. Input fires continuously, change only fires after moving to another field.
- When you hear the event, you should read the value out of the Bill Total field and the value in the tip input slider. Then you should write the value of the tip slider into the Tip Percentage field and calculate the other two fields.
- Tip Amount should be the Tip Percentage of the Bill Total and Total Bill with Tip is the Bill Total field plus the Tip Amount field.
- Use the disabled inputs value property to write those numbers in them.

- You may use a CSS framework if you like.
- Publish your finished work to your GitHub repository and GitHub Pages.
- Test the GitHub Pages URL in your browser to ensure it all works before you submit.
- Submit both your GitHub Repository and your GitHub Pages hosted file URLs in the canvas assignment text field.

Graduate Additional Requirements

If you are involved in **any section of 541** you need to complete the additional requirements listed here.

==Make sure the user interface works as well on mobile phone sized screens. You can do this with responsive CSS or with a creative way of laying out the UI, so it works well on both desktop and mobile. Use browser dev tools to test on mobile. Also, there is a higher expectation on the quality of CSS used for 541 students. You must put extra effort into your design. This is part of your design grade.==

README File

Not Required for this Lab

Due Date / Late Policy

This assignment is due ==**Thursday, October 31st by 11:59 PM Chicago Time**. **Tuesday, November 5th by 11:59 PM Chicago Time is the last day to submit the lab for late credit (8 points will be deducted)**==

Submission Guidelines

You must upload your submission to the canvas assignment by the due date. The submission must be in the following format and structure. If you do not submit your assignment exactly as specified under the requirements, you will lose points.

Submission Format Specification:

==**Commit all files used to your main class GitHub Repository in a separate directory or a new repository just for this lab and submit to the Canvas assignment the URLs to both your GitHub repository and the GitHub Pages hosted page.**==

Mockup Example

==**Add title line as shown**==
- ==**Class name**==
- ==**Lab 3**==
- ==**Your Name**==

ITMD 4/541 - Lab 3 - Your Name

Tip Calculator

Bill Total: _____

Tip: ●━━━━━━

Tip Percentage: _____

Tip Amount: _____

Total Bill with Tip: _____