

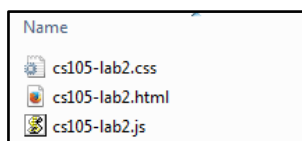
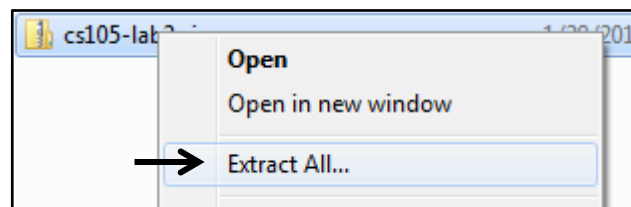
In lecture this week, you learned that the Scratch you have been doing can be easily translated to JavaScript – the most widely used language on the Internet. This week, you will write your first few bits of JavaScript!

Before you begin, you should pair up with your group members. Part of this lab is not only to teach you programming, but also to meet and work with your peers. As you are logging into the system, introduce yourself to your team members and get to know a little bit about them!

Getting Ready

For this lab, we have prepared a base set of files for you to use. You should download them from the CS 105 website under the “Lab #2” page. (You can find the CS 105 website by doing an internet search for “CS 105” or by going to <http://bit.ly/cs105sp14>.)

The file you just downloaded is a zipped file. You will need to **extract** all the files in it (simply double-clicking the file will open the zip file but not extract it). To extract the files in the ZIP, right click the ZIP file and click “Extract All...” (➔).



Selecting “Extract All” will bring up a dialog. The default options are fine, choose “Extract”, and then Windows will provide you a new folder with the extracted files (⬅).

Exploring the Web Interface

With the files extracted, double click `cs105-lab2-html.html`. This should open up a cookie order form in a web browser. (If the order form looks white and left-justified, unlike the picture to the right ➔, you did not extract the files and you simply opened the ZIP. If this is the case, carefully read the first section again.)

On the order form, you will notice that you can change the quantity of cookies, but the summary does not update. In this lab, you will complete the JavaScript code to update the summary information.

Cookie Order Form	
Cookie Type	Quantity
Thin Mints (\$4.00 /box)	<input type="text" value="0"/>
Caramel deLites (\$3.50 /box)	<input type="text" value="0"/>
Peanut Butter (\$3.50 /box)	<input type="text" value="0"/>
Shortbread (\$3.50 /box)	<input type="text" value="0"/>
Summary:	
Total number of cookies: 0	
Unique types of cookies: 0	
Total price: \$0.00	

Calculating the Total Number of Cookies

Using a **plain text editor** (such as Notepad++, available on the lab machines), open up the JavaScript file (`cs105-lab2-js.js`). Inside the JavaScript file, you will find three empty JavaScript functions with large comment blocks above each of them describing what each function should do. The first of these functions (➔) is designed to calculate the total quantity of cookies ordered. For this function, you can complete it with just one line of code. Specifically, your solution only needs to **return**

```

/**
 * This function should return the total number of cookies ordered.
 * The four function parameters (cookie1, cookie2, cookie3, and cookie4)
 * contain the values of each of the four types of cookies ordered.
 */
@param (Integer) cookie1
 * The quantity of "Thin Mints" cookies chosen by the user.
@param (Integer) cookie2
 * The quantity of "Caramel deLites" cookies chosen by the user.
@param (Integer) cookie3
 * The quantity of "Peanut Butter" cookies chosen by the user.
@param (Integer) cookie4
 * The quantity of "Shortbread" cookies chosen by the user.
 */
@return (Integer)
 * The sum of the quantity of cookies ordered.
 */
function sumCookieTypes(cookie1, cookie2, cookie3, cookie4)
{
}

```

the value of the sum of the four parameters. Your solution code only needs to fill in the blank in the following code, by typing your solution into your JavaScript file:

```
function sumCookieTypes(cookie1, cookie2, cookie3, cookie4)
{
    return _____;
}
```

Once you have finished this function, save your JavaScript file and **reload** the web page you opened earlier. Enter various values and make sure your **sumCookieTypes()** function worked!

Calculating the Unique Kinds of Cookies

The next function in the JavaScript file requires more than one line of code and the use of **conditionals**. For the **uniqueCookieTypes()** function, instead of calculating the quantity of cookies you will calculate the unique types of cookies ordered. For example, if the order contains only “Thin Mint” cookies, the number of unique cookie types is only one (1) regardless of how many boxes of “Thin Mint” cookies are on the order. Likewise, if three types of cookies are ordered, the unique cookie types is 3.

In calculating the number of unique cookie types, you should check if the number of cookies ordered for each type is zero (0). You will count only the cookies types that are non-zero. Your function should **return** the number of unique cookies.

Once you have finished this function, save your JavaScript file and **reload** the web page you opened earlier. Enter various values and make sure your **uniqueCookieTypes()** function works.

Calculating the Cost of the Order

The final function in the JavaScript file requires you to calculate the cost of the order. The table to the right (➔) shows the translation between the name of the cookie, the variable name used in the function, and the cost per box of cookies.

Cookie Name	Variable Name	Cost /box
Thin Mints	cookie1	4.00
Caramel deLites	cookie2	3.50
Peanut Butter	cookie3	3.50
Shortbread	cookie4	3.50

The **totalPrice()** function should **return** the total cost of the order (as a **Number**, do not add a “\$” symbol or anything). Once you have finished this function, save your JavaScript file and **reload** the web page you opened earlier. Enter various values and make sure your **totalPrice()** function works.

Submitting Your Lab

After you have tested your code to make sure all three functions work, you have completed this lab assignment and created your first interactive piece of JavaScript! Make sure to save your JavaScript file and you will need to upload that JavaScript file to the Lab #2 page on the course website.

(The cookie types in this lab are the four most popular types of cookies sold by Girl Scouts of America. Apparently, there are two different types of Peanut Butter cookies – who knew?)

Cookie Order Form	
Cookie Type	Quantity
Thin Mints (\$4.00 /box)	<input type="text" value="30"/>
Caramel deLites (\$3.50 /box)	<input type="text" value="0"/>
Peanut Butter (\$3.50 /box)	<input type="text" value="42"/>
Shortbread (\$3.50 /box)	<input type="text" value="20"/>
Summary:	
Total number of cookies: 92	
Unique types of cookies: 3	
Total price: \$337.00	