

CSCE 120: Learning To Code

Hacktivity 1.1: Getting Started

Introduction

We will be using various web technologies throughout this course, including JavaScript. To make development easier, we will be using an Integrated Development Environment (IDE) called Light Table. In this hacktivity, we'll install the necessary software and orient ourselves with their usage.

This hacktivity is written under the assumption that you will be installing software on your personal laptop. The necessary software has already been installed on the lab computers which you can use if you do not have a laptop.

Since this is an orientation, you will still be assigned a partner for this hacktivity and will work with them throughout. However, you should both do the work on your respective laptops so that you both have the necessary software.

1 Administrivia

You will receive a CSE account and will need to agree to the usage policy. Your instructor will help you with this process. To recover your account or reset your password, you can always go to <http://cse.unl.edu/check>.

2 Install-Fest

If you are using your own computer, we'll need to install some software. If you are using a lab computer, these pieces of software should already be installed.

2.1 Light Table

Light Table is a lightweight Integrated Development Environment (IDE) which offers several features to facilitate software development. Install Light Table by pointing your browser to the following URL:

<http://www.lighttable.com/>

Follow the instructions for installing Light Table to your personal computer.

2.2 FileZilla

FileZilla is an FTP client (File Transfer Protocol) that allows you to transfer files between your computer and other computers, in particular the CSE server. If you already have an FTP client installed and are familiar with its usage, you may skip this step.

Point your browser to the following URL:

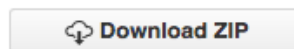
<https://filezilla-project.org/>

Download and install the *FileZilla Client*.

3 Getting Started

Let's get some practice using our new IDE. To get started, we'll download, open, and modify a preexisting project. The project is a small application that calculates how old you are when you enter your birthdate. The project is hosted on [GitHub](#), a popular code/project hosting repository service.

1. Point your browser to the following URL:
<https://github.com/cbourne/BirthdayApp>
2. Download this project by clicking the “Download ZIP” button in the lower-right:



3. Unzip the file in a location in which you'll store all of your projects for this class. You'll want to create a new folder somewhere on your computer. If you are using a lab computer, be sure to create this new folder in your Z: drive.
4. Rename the folder to `BirthdayApp` (remove the `-master` part)
5. Start Light Table and click View → Workspace to make your “workspace” viewable at the left. This is essentially a way to browse files in your projects.
6. Add your new folder to your workspace by dragging and dropping it into your

workspace.

7. Expand your folder and open both the HTML and JavaScript files in Light Table
8. “Evaluate” the HTML file to open it up as a browser in Light Table by viewing the file and pressing:
 - Shift-Command-Return for Mac
 - Shift-Control-Enter for Windows

This opens the HTML inside Light Table and renders it as it would appear in a browser.

9. You may want to create a separate “tabset” (right click tabs select New tabset) so that you can view files side-by-side
10. Interact with the page by entering a date and clicking the “Calculate” button
11. With your partner, take a look at the HTML code and try to identify at least three relations between code elements and the elements displayed in the rendered page.

3.1 Making Changes

You may have noticed several mistakes in the page. In particular, there are a few misspellings. Work with your partner to do the following:

1. Fix all spelling mistakes by exploring and hunting for these errors and correcting them. Note that some of the mistakes are in the HTML file while others are in the JavaScript file. Take care that when you correct these mistakes that you don’t inadvertently cause other mistakes by deleting or adding too much.
2. When the page loads, you are presented with a “default” date of October 14th, 1908. Find the code responsible for this default and change it to today’s date.

3.2 Making Your App Better

The page is rather drab and plain looking. We’ll make it look a bit better by pulling in a few libraries and frameworks which provide some basic styling and functionality to a web page.

3.2.1 jQuery

1. We’ll first include the jQuery (<http://jquery.com/>) library. Copy and paste the following lines into the HTML file after the `<title>` element:

```
<script src="https://ajax.googleapis.com/ajax/libs/jquery/2.1.4/jquery.min.js"></script>
<link rel="stylesheet"
href="https://ajax.googleapis.com/ajax/libs/jqueryui/1.11.4/themes/smoothness/jquery-ui.css">
<script src="https://ajax.googleapis.com/ajax/libs/jqueryui/1.11.4/jquery-ui.min.js"></script>
```

This essentially “imports” the jQuery library by “hotlinking” it from a Content Delivery Network (CDN) hosted by Google.

2. Now let’s use jQuery’s “Date Picker” widget that will add a popup calendar to the textbox. Add the following lines of code after the code you just inserted:

```
1 <script>
2   $(function() {
3     $('#birthDate').datepicker();
4   });
5 </script>
```

Reload your page and observe the results.

3.2.2 Bootstrap

1. We will now include another library called Bootstrap (<http://getbootstrap.com/>). Created by Twitter, the Bootstrap library provides many stylistic elements that make a web page look and feel more modern. To include the necessary files, add the following lines after the previous code (but before the closing *tag*, `</head>`)

```
<link rel="stylesheet" href="http://maxcdn.bootstrapcdn.com/bootstrap/3.3.4/css/bootstrap.min.css">
<link rel="stylesheet" href="http://maxcdn.bootstrapcdn.com/bootstrap/3.3.4/css/bootstrap-theme.min.css">
<script src="http://maxcdn.bootstrapcdn.com/bootstrap/3.3.4/js/bootstrap.min.js"></script>
```

2. Now let’s modify a few of the elements in your page to give them different display properties. Modify the `<body>` element by adding a primary *division* (div) element as follows:

```
1 ...
2 <body>
3 <div class="container">
4 ...
5 </div>
6 </body>
7 ...
```

This adds some margins to the page and changes the basic fonts.

3. Second, change the `class=""` attribute of the calculate button. Find the code in the HTML file that corresponds to the button and change the class to:

```
class="btn btn-lg btn-primary"
```

This changes the appearance of the “Calculate” button.

4. Refresh or reevaluate your page to see the changes.

4 Publishing Your Project

The files you've been working with only exist on your computer. We will now make them available to anyone in the world by uploading them and making them available on the CSE webserver. Once completed, anyone will be able to access your starter project.

1. Open FileZilla and connect to the CSE server using the following:

- Host: `sftp://cse.unl.edu`
- Username: your cse login
- Password: your cse password

You should see, among other things, your local file system on the left and the remote (CSE) file system on the right.

2. Create a new directory on the CSE server that will host all of your web files. Right-click on the right-side and select "Create directory"; name it `public_html`.
3. Drag and drop your `BirthdayApp` folder (and thus all of its contents) to the `public_html` folder you created
4. You will need to change permissions on these files so that the world can read them. To do this:
- a) Right-click the `public_html` folder and select "File Attributes" (or "File Permissions")
 - b) Enter `755` for the numeric value
 - c) Click "Recurse into Subdirectories"
 - d) Click "Okay"

5. Point your browser to the following url:

<http://cse.unl.edu/~cselogin/BirthdayApp>

Where `cselogin` is replaced with *your* login.

From now on, any project you build in Light Table can be uploaded to the CSE server and it is available to everyone through any browser. Take care that you change the URL depending on the folder/directory name.