# BASIC LEGAL CITATION

NOVEMBER 6, 2015

FOR LEGAL INFORMATION INSTITUTE

# Basic Legal Citation

*for Legal Information Institute*

# Report 3

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# 1 INTRODUCTION

## 1.1 PROJECT GENERAL OVERVIEW

### 1.1.1 Purpose and Scope

Writing a book as complex as **Introduction to Basic Legal Citation**, and maintaining the book updated every year is a high demanding endeavor. If only the book was maintained as a website, would the workload of updating it be a matter of writing an HTML file with the contents of legal writing. However, the author Prof. Peter Martin has another three formats for his book, and each format has its own specific characteristics. Therefore, he has to re-write the same book another three times, one for each format. He also needs to keep track of his progress, so that all versions would be consistent. These tasks are accomplished manually. Furthermore, when the book was published as a webpage, there was not a concern to create a mobile-friendly and interactive design, which is almost a necessity nowadays. That's where our team enters.

Our objective is to design and build a modern, mobile-friendly version of the Basic Legal Citation site that improves the display of explanatory text, and adds a greater interactivity to the presentation of examples and supplementary information. We're also improving the content maintenance process to support efficient updating and output of the website and various eBook formats, in which the client only needs to write the content once and have it updated in all formats.

### 1.1.2 Objectives and Goals

The main objective of this project is to design a website with good user experience, and a mobile friendly version has to be implemented. The website should also provide functionality for the user to search for a citation/keyword in the website.

The secondary objective is provide an editor interface to the author which can allow him to edit the content of the website. The updated content is supposed to be reflected in the other three formats: ePub, mobi and PDF. The changes can be done only by the author and none other. The author can have an option to reflect the changes to in any other formats without manually having to repeat the updating process. On the other side, the application also should allow user to view the content hosted on the website and should be able to generate different formats of the same content (HTML, ePub, mobi and PDF).

## 1.2 CURRENT SYSTEMS

There is a website hosted at https://www.law.cornell.edu/citation/, that provides users with the ability to view the legal citation content, in HTML format, written by Prof. Martin. The current system is outdated in its design aspects and interactivity. Also it is not mobile-friendly.

The content presented on the website is also available in three different formats:

1. A pdf version
2. A version in mobi format designed for use on the kindles as well as other e-readers or apps using this format
3. A version in ePub format for e-readers or apps that work with it

However, since the website is not written in a generic markup language that's fully compatible with the three formats, there's no generic framework available that can do instant conversion of the HTML, in which the website is written, to the different formats. Hence, the content has to be updated for each different format of the book manually. By updating manually, the author needs to keep track himself of the changes made in each version, which is time consuming and prone to errors.

# 2 PROPOSED SYSTEM REQUIREMENTS

## 2.1 OVERVIEW

The project involves the following two major tasks that can be implemented individually, and the requirements for both these tasks are detailed in the further sections.

1. Website redesign and implementation
2. Conversion of the documentation from HTML to other formats

## 2.2 FUNCTIONAL REQUIREMENTS

### 2.2.1 Task 1: Website

1. Redesign the layout of the website to make it look more modern and user friendly.
2. The website has to be responsive to different screen sizes, i.e., it has to be mobile-friendly.
3. The display of explanatory text, interactive presentation examples, and supplementary information has to be improved. This subtask will involve the following features
    - change webpage color scheme
    - add tabbed panes
    - add navigation tabs
    - add pop-up menus for examples
    - add clickable keywords
    - transform the tables into a more interactive presentation
4. The website has to be crawlable. This is to say that the website should allow its pages to be indexed by a search engine.
5. The following are the **optional** features that we have agreed upon:
    - An effective search box
    - An interface for author's content management

### 2.2.2 Task 2: Conversions

1. It must be possible to convert the HTML files on the website to one file of the following output format:
    - PDF
    - ePub
2. The author interface may not need to be web-based.
3. Conversion to the other formats such as mobi format, either from HTML or ePub is **optional**.

## *2.3* USABILITY REQUIREMENTS

The application will have two interfaces, the author side and the user side. The author is the person who owns the content on the website and is also responsible for the perpetual updating of the same. The user base would be thousands of law students or legal professionals who use this website as a resource to understand the legal writing and learn how to cite the legal sources.

### *2.3.1* Author View

The author will edit or create new content on the website using a WYSIWYG editor such as Dreamweaver. Once complete, he will be able to publish the latest files to the server. The author is familiar with using this scheme to update changes to his current site and we intend to keep the same solution for his ease of use.

Once the author decides to publish these changes into other formats, he must login to the "author view" of the web application. Here, he will have an option to reflect the changes in any of the other formats, without manually having to repeat the updating process.

### *2.3.2* User View

This view allows the user to view the Basic Legal Citation documents hosted on the website. These users typically use screen-readers to access the Internet. The user can access the document from any browser on a computer or a hand-held device. The user interface can be either a website, eBook on kindle, a mobile document reader or a pdf file.

The web application will have hyperlinks/buttons to aid the user in one of the following functionalities:

- The ability to navigate to the index/help page
- To open a new page that contains detailed description of a citation
- To download the document in any of the available formats
- To navigate among the different pages within the website
- To navigate to any external references. Example: A blog post.

To download the Basic Legal Citations document, the following requirements have to be met from the user side:

- The user's computer/device has to be relatively up-to-date to perform the download.
- The computer/device should have enough space to store the document.
- It is the user's responsibility to download the relevant software in order to read the downloaded format. For example, to read the PDF format, a PDF reader such as Adobe Reader might be required.

## 2.4 NON-FUNCTIONAL REQUIREMENTS

1. **Reusability and Maintenance**: The website must be easily maintainable once it is handed over back to the client with a descriptive user manual.
2. **Scalability**: The website already has up to a million users. The website must be scalable enough to cater to an even larger number of users in future.
3. **Consistency**: One of the major concerns of the client is to maintain consistency among the different formats. Although the website has more interactivity than the other three formats, the interactivity will be maintained in a different presentation in other formats.
4. **Extensibility**: The application has to be extensible so as to allow administrators to add features not available in the initial release. The possible extensions in this project is to support conversion of more formats of the document.
5. **Compatibility**: The application must function correctly when ported to the Cornell Law School server and be compatible with mainstream browsers including Safari, Chrome, Firefox, IE9, Edge, etc.

# 3 REQUIREMENT MODELS

## 3.1 USE CASE DIAGRAMS

As discussed above, there are two different user roles: a visitor and the author. In general, a visitor will view the content, download one or more formats of the e-book, even buy a mobi format eBook if the visitor would like to. Meanwhile, the author will manage the content, like add, edit, or delete the content, generate e-books, and public content updates. This is described in Figure 1. The detailed use case specifications and use case scenarios are listed in the following section.

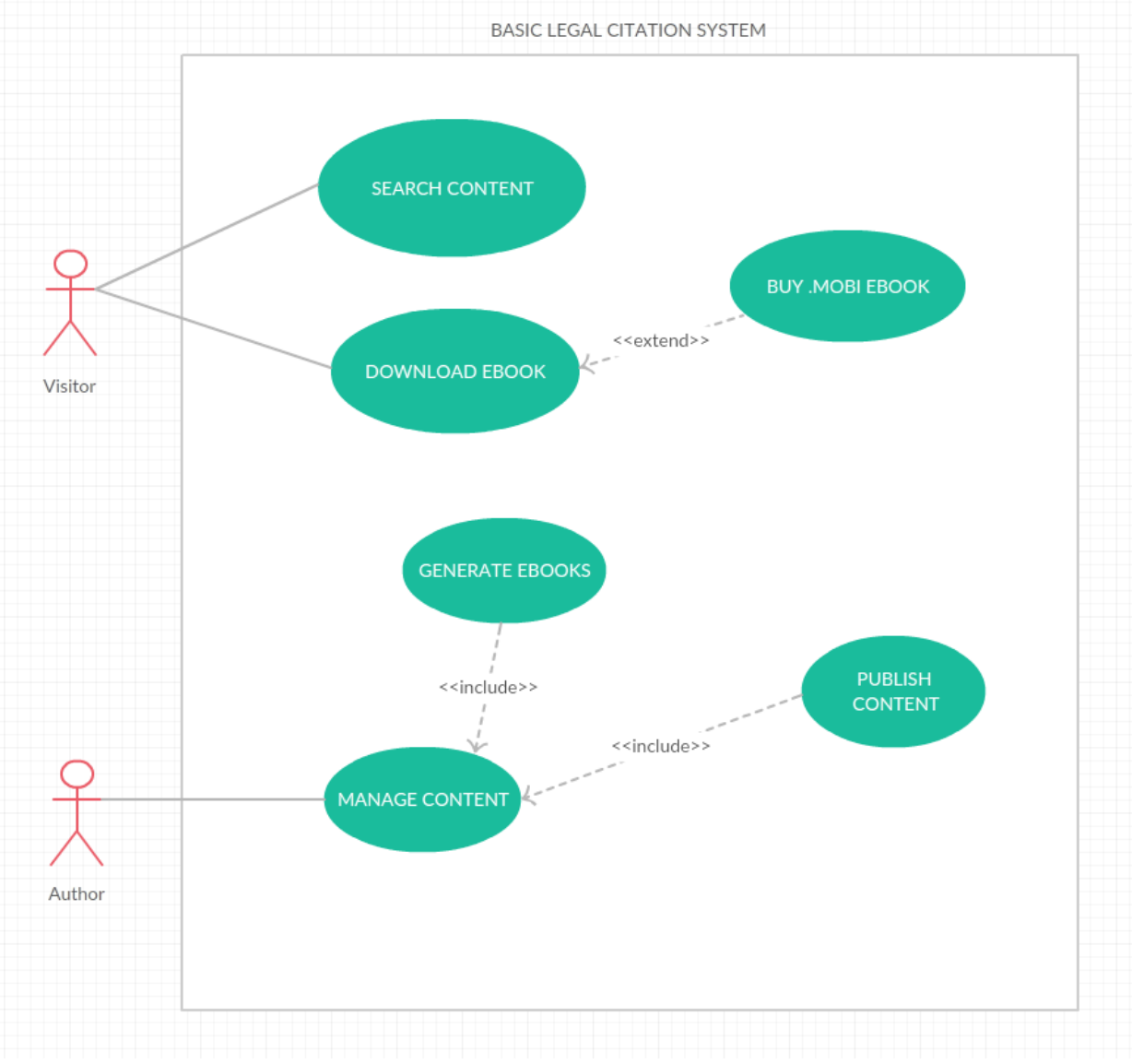



*Figure 3-1 Use Case Diagrams for Basic Legal Citation*

## *3.2* USE CASE SPECIFICATIONS

### *3.2.1* Search Content

**Summary**: The visitor performs a search for content on the Basic Legal Citation website using keywords and phrases.

**Preconditions**: The Basic Legal Citation must be open in a compatible browser. The visitor must be able to type a keyword for search purposes.

**Trigger**: The visitor clicks on the search button or press enter after inputting a keyword or phrase on the search bar.

**Course of Events**

1. The Basic Legal Citation website displays a field for text-based search.

2. The user enters the search terms into the field and confirms the search by clicking a button or pressing the enter button.

3. The Basic Legal Citation search bar determines the appropriate results based on the terms used for searching.

4. The Basic Legal Citation website displays the search results with relevant information in metadata.

5. The visitor selects the search result to jump to.

6. The Basic Legal Citation website displays the page associated with that result.

**Alternate paths -** *No results*

2b. The basic legal citation search bar cannot find any search results matching the terms.

3b. The basic legal citation displays an error page indicating that the terms match no result in the website.

4b. The visitor search for a new term on the search bar or cancels the search by navigating to another section of the website.

**Alternate paths -** *Cancel search*

This could occur in step 4b chiefly.

1c. The visitor cancels the search by clicking in a link on the website or hitting the back button on the browser.

2c. The basic legal citation website displays the appropriate page.

### 3.2.2 Download eBook

**Summary**: The visitor selects from a dropdown menu which eBook format they want to download and click on the link to finish downloading.

**Preconditions**: The Basic Legal Citation must be opened in a compatible browser, the visitor must own a compatible reader device for the book format downloaded.

**Trigger**: The visitor clicks on the download link

**Course of Events**

1. The visitor goes to the menu and selects the format he wants to download - mobi, PDF or ePub.

2. The Basic Legal Citation website redirects the visitor to the download page.

3. The visitor completes the download of the e-book to a local directory on his laptop.

### 3.2.3 Buy .mobi eBook

**Summary**: As a convenience, the visitor can have the mobi eBook sent directly to their Kindle. To do this the visitor selects buy mobi on the menu, and they're redirected to Amazon to purchase the eBook for kindle.

**Preconditions**: The Basic Legal Citation must be opened in a compatible browser, the visitor must have or create an Amazon account, the visitor must own a Kindle.

**Trigger**: The visitor clicks on buy mobi eBook

1. The Basic Legal Citation website redirects the visitor to the amazon purchase page for the mobi eBook.

2. The visitor logs into their account using their amazon credentials.

3. The visitor makes a payment to amazon for the mobi eBook.

4. The amazon website sends the mobi eBook to the visitor's kindle.

### 3.2.4 Edit Content

**Summary**: Using an HTML editor, the author can edit the content from the book.

**Preconditions**: The author must use HTML5 as a markup language. The author must have access to the original HTML5 files, the system and the server. The author must use an HTML5 editing tool compatible to his machine.

**Trigger**: The author opens a selected HTML5 file in the editor.

1. The author selects an existing HTML5 file from the server.

2. The author opens the HTML5 file in any editing tool.

3. The author makes the appropriate changes using HTML5 as markup language and save those changes to the files.

4. The author publishes those changes in the website and update eBooks on the website and on Amazon.

### *3.2.5* Add Content

**Summary**: Using an HTML editor, the author create new content for the eBook.

**Preconditions**: The author must use HTML5 as a markup language. The author must have access to the system and the server. The author must use an HTML5 editing tool compatible to his machine.

**Trigger**: The author opens the editing tool and creates an HTML5 file.

1. The author selects an existing HTML5 file from the server.

2. The author opens the HTML5 file in any editing tool.

3. The author makes the appropriate changes using HTML5 as markup language and save those changes to the files.

4. The author publishes those changes in the website and update eBooks on the website and on Amazon.

## *3.3* USE CASE SCENARIOS

### *3.3.1* Scenario 1 – A law student using the website.

**Primary Actor:** Andrew, The law student

**Precondition:** Active Network Connection

**Basic flows of Events:**

- Andrew accesses the website.
- Andrew goes to the home page.
- Andrew navigates through the website and finds the topic he wants to study.
- To study the various examples, he uses the markup tags on the website to understand better.
- Once the studying is done, he closes the website.

### *3.3.2* Scenario 2 – The author edits content on the website.

**Primary actors:** Prof Martin, author

**Preconditions:**

- Web browser on a system connected to the internet.
- Author has appropriate credentials to log in to the server.

**Basic flow of events:**

1. The author must access the server using his credentials.
2. The author will access the pages to which he has to make edits.
3. The author uses the markup language (based on HTML5) to make the changes.
4. The author publishes the changes to the website.
5. Our system will automatically pull the newest HTML5 from the website and convert it to other formats like PDF, ePub and mobi and the website will be updated with the links for downloads.

### *3.3.3* Scenario 3 – Visitor wishes to download an e-book

**Primary Actor:** Gordon, The law student

**Precondition:** Active Network Connection

**Basic flows of Events:**

1. Gordon accesses the website.
2. Gordon goes to the home page.
3. Gordon clicks on download e-books.
4. Based on the the type of e-book Gordon clicks on one of the following
    a. basic_legal_citation.mobi
    b. basic_legal_citation.epub
    c. basic_legal_citation.pdf
5. The corresponding e-book is downloaded in the format clicked on.

### 3.3.4 Scenario 4 – Author, Prof Martin wants to generate all formats of e-books

**Primary Actor:** Prof Martin, the author

**Precondition:**

- Active Network Connection
- A table of content in HTML
- Metadata, CSS, and a cover for the eBook

**Basic flows of Events:**

1. Prof Martin accesses the website.
2. Prof Martin logs in using his credentials which verifies he has edit rights to the content.
3. Prof Martin clicks on generate files.
4. The application responds with an alert (Successful or Unsuccessful).

**Alternative Flow:**

1. The author, Prof Martin is not validated
    a. The application responds with an error alert.
2. The generation for various formats fail.
    a. The application responds with an appropriate error alert.

# 4 PRELIMINARY DESIGN

## 4.1 SYSTEM ARCHITECTURE

The system has been designed as a client-server architecture. For this system, the clients are the mobile or desktop browsers viewing the HTML5 pages on the server. The author can also create new HTML5 pages and upload them to the server. The visitors of the site can then see the most recently updated content on the site. Additionally, the clients can also request to download different publishing formats - PDF, ePub, etc., stored on the server.

## 4.2 WORKFLOW

The author uses DreamWeaver, a web design tool and HTML and CSS editor, to add or edit pages stored on the server. Additionally, the server allows the author to trigger a creation of PDF, ePub or mobi format from the HTML5 content hosted on the site.

Once the files have been uploaded to the server, the Visitors of the web site can download or view the contents.

The choice of DreamWeaver was made because the author is already familiar with it and he's used to uploading HTML5 pages to the server.

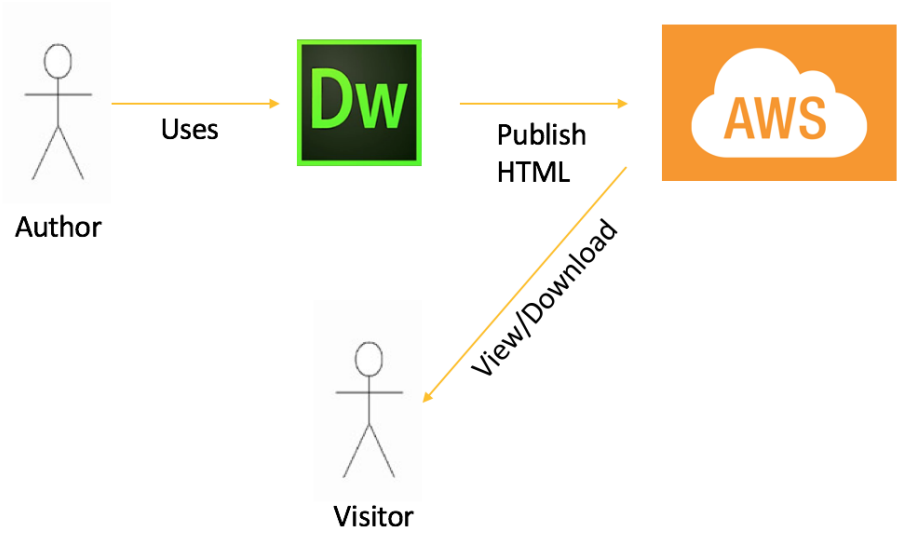



*Figure 4-1 Overview of the Workflow*

## 4.3 WEBSITE DESIGN CONSIDERATIONS

The revamped website currently has 2 navigation bars - one on the top right part of the page and the other on the left pane. The navigation layout is similar to the current legal citation website. This was intentionally designed to aid the frequent users of the site by trying to maintain a consistent layout.

However, the color scheme of the website has been changed to make the website look more appealing and modern. In additional to these, the navigation panes have been designed to be more interactive by expanding or collapsing upon a click.

The entire website is more responsive and screen size independent now. The website dynamically rearranges its navigation panes and content depending upon the screen size of the client devices. Also, the site rearranges the layout and content when the browser is resized.

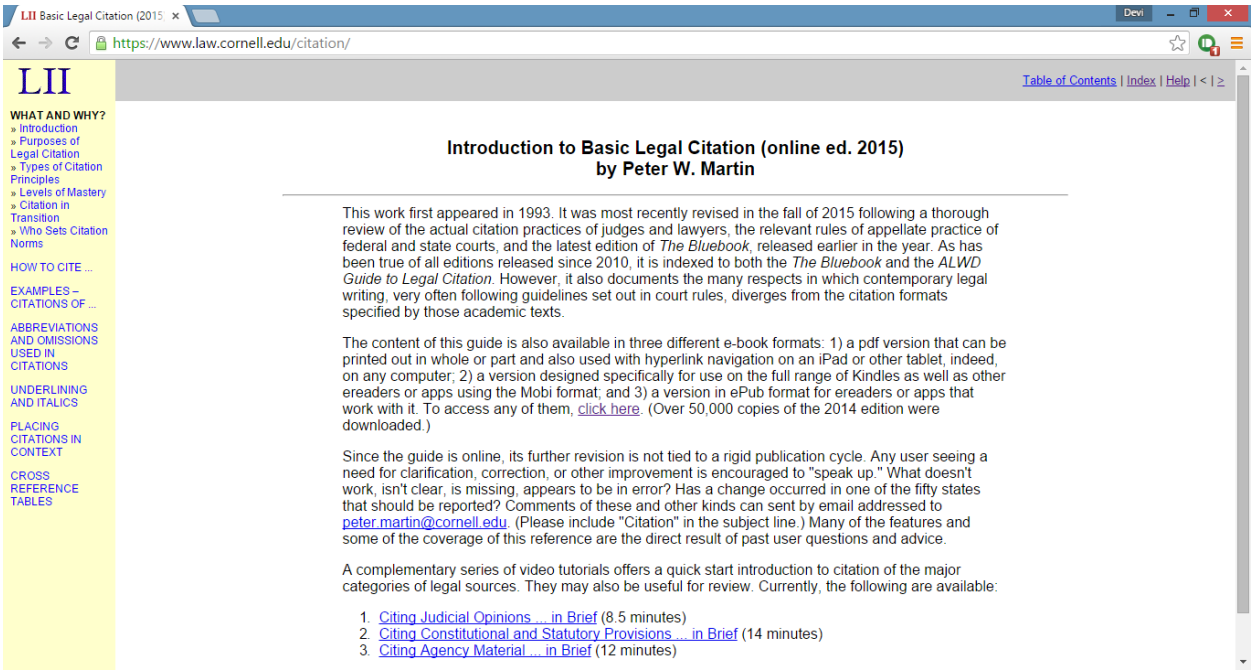



*Figure 4-2 Current Basic Legal Citation Website*

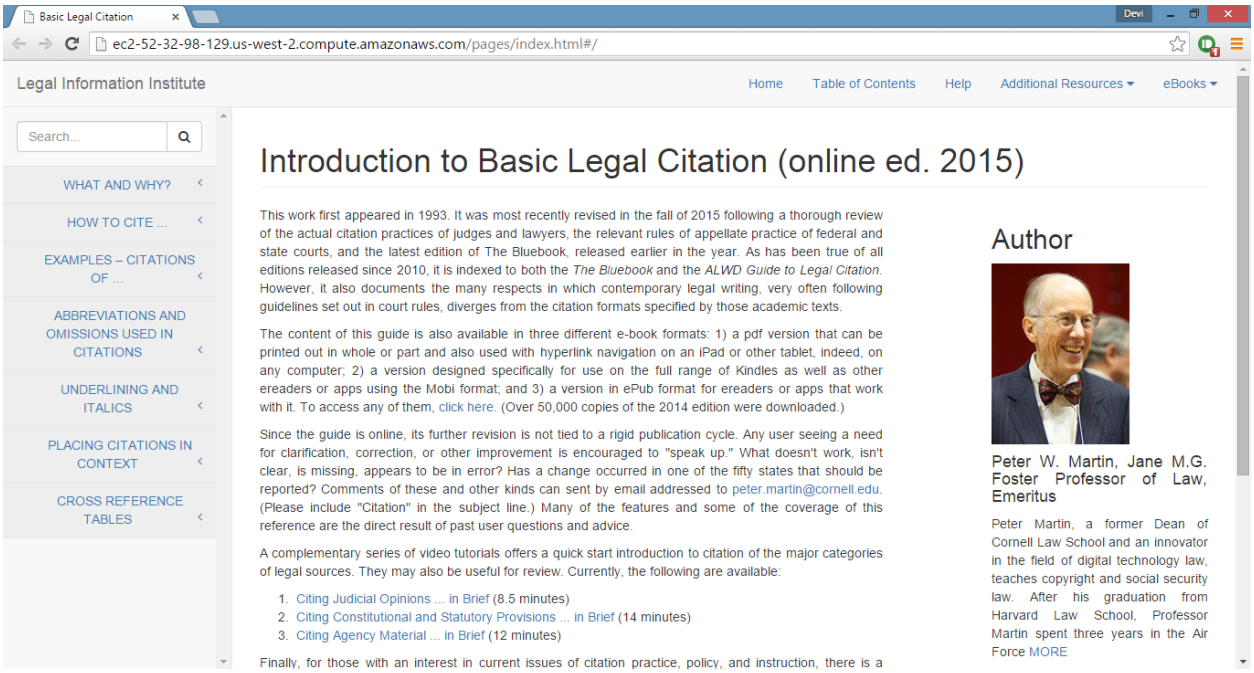



*Figure 4-3 New Version of the Website*

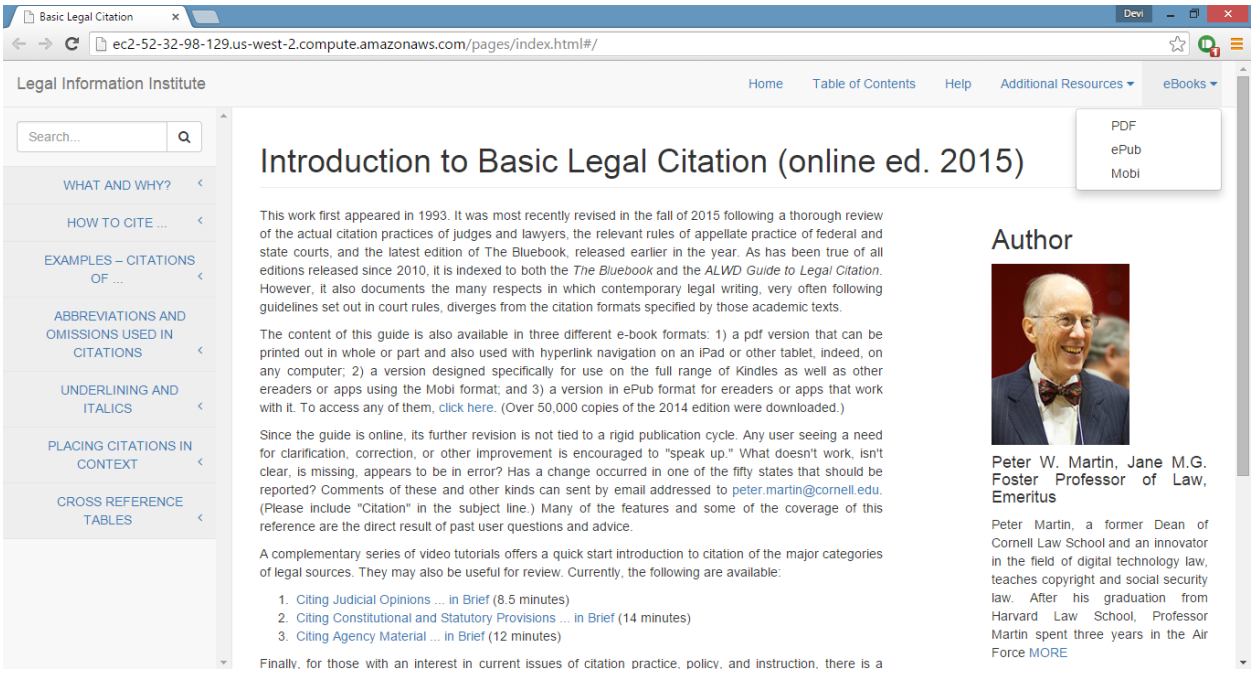



*Figure 4-4 Demo of the Dropdown Menu for Downloading eBooks*

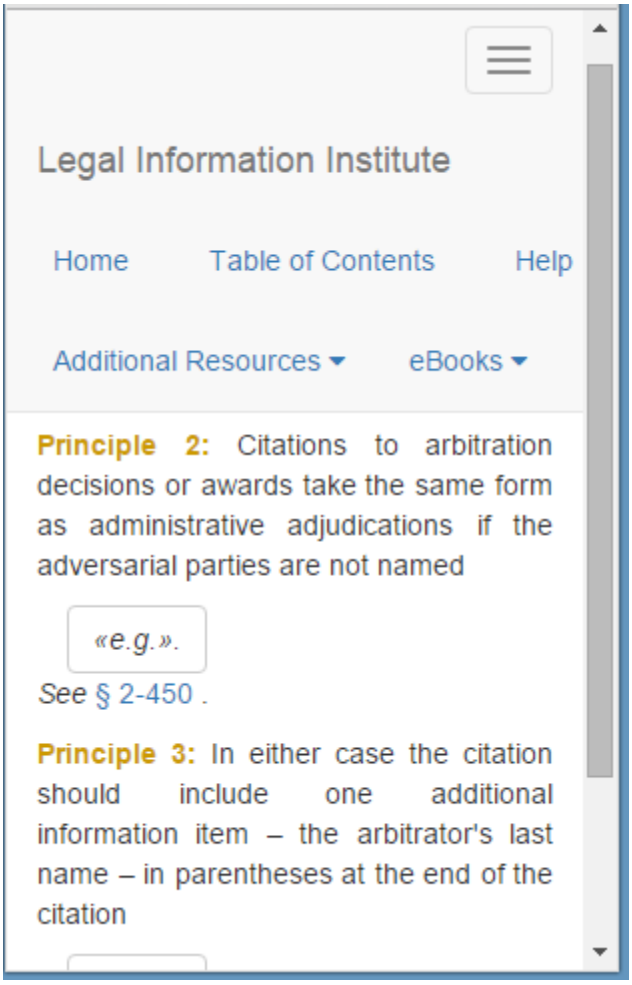



*Figure 4-5 Demo of the Website Content Layout on a Resized Screen*

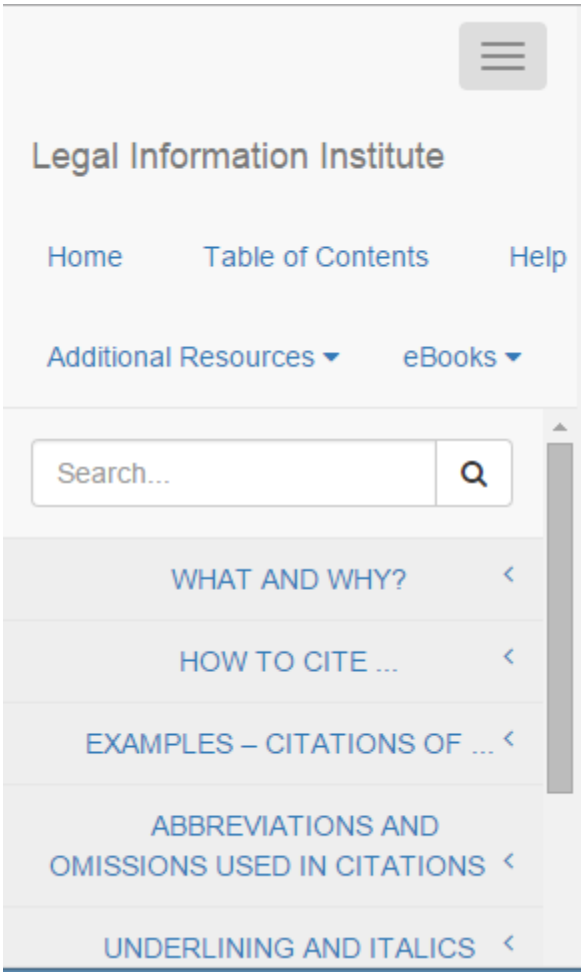



*Figure 4-6 Demo of the Navigation Bar on a Resized Screen*

## 4.4 Conversion To Mobile Reader Formats

A file converter is used to convert HTML5 pages hosted on the site into various publishing formats, viz. PDF and ePub.

After thorough research on various converters, we're completely convinced to use the following tool:

- Calibre http://calibre-ebook.com/

Though the tool can't be used as-is, we've written interfacing scripts that would eliminate the interactive parts of the website, such as dynamic search fields and popups, from being converted into mobile reader formats.

In addition to these, we have to also define new tag types and define a markdown language using HTML5. This will aid tagging various objects in the existing site. For instance, the keyword "BB" in the site refers to "Blue book - a book on uniform system of citation". Such keywords have to be tagged using a schema so that we can implement efficient searching based on such tags.

# 5 PROJECT PROGRESS

## 5.1 FIRST ITERATION

As we have decided earlier, we are following spiral development model for our current standing. The team is on the expected schedule. In the first iteration, the team has clear understanding of the requirements defined by consultation with the client to establish the application. In addition, the team has implemented a few pages to build a prototype for an interactive and mobile friendly website and a converter from XHTML files to PDF and ePub files. To create interactivity, the team removed the <iframes> from the website and created a new expand-collapse panel instead, to display citation examples. A user testing was scheduled in the week of October 26th to 31th to provide more feedback for the second iteration.

### 5.1.1 User Testing

The group invited the client Professor Martin and another student from law school to perform user testing. The user testing was performed remotely, by sending files of the prototype to the testers. There was no prior demonstration or training on how to navigate through the website or citation examples. Both the client and the student were required to evaluate the left and the upper navigation bar, and the citation examples, and report any changes that they would like to have. The feedback was collected through emails as well.

**The feedback:**

- A pop-up instead of expand-collapse feature to show citation examples. It is also required to fade the backdrop and to display only the content on the popup. This, according to the client, will help capture and focus the user's attention on the examples.
- To use a different highlighting color for citation examples, instead of the traditional yellow.
- To make the <<e.g.>> clickable links look more "button-like".
- "Resources" in the top navigation tab must be re-named as "Additional Resources".
- The 3 videos, whose links have been provided in the home page, must also be under the header "Additional Resources".

## 5.2 SECOND ITERATION

**Refinement based on feedback:**

In the second iteration, the group has analyzed the input from the client regarding the changes made in the website.
As a consequence,

- We replaced the expand-collapse feature with popups and with a button to display the examples.
- Used a more vivid color for the citation's highlighting (Figure 5-1), as required by the client.

The other feedbacks received after *Iteration 1* were also honored and apt. changes were made.

**New features:**

- Implemented an early version of the search bar, in which we use our tags to make a proper metadata search for the list of states table (Figure 5-2).
- Replaced the previous XHTML tags with HTML5 tags, to make them future ready and compliant to upcoming W3C standards.
- Furthermore, with inputs from Dr. Sylvia, we changed tag names and reduced the number of tags to facilitate future maintenance.

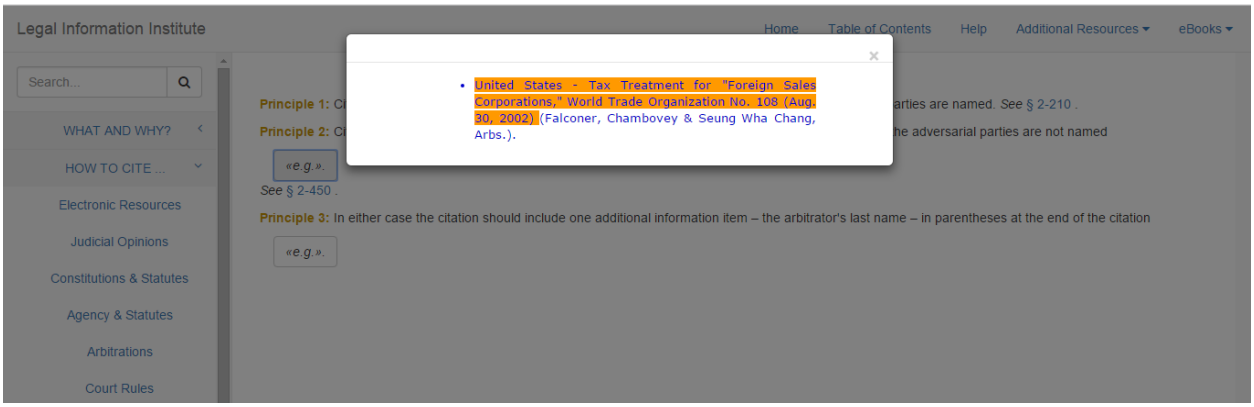



*Figure 5-1 Example Popup*

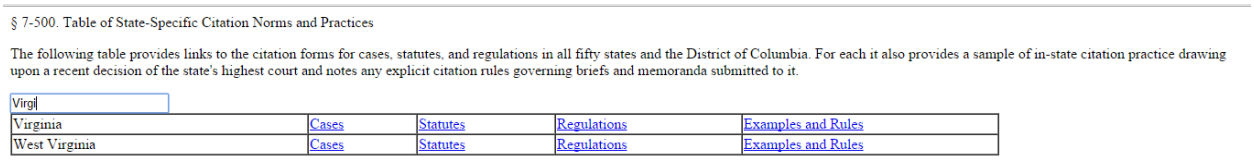
§ 7-500. Table of State-Specific Citation Norms and Practices

The following table provides links to the citation forms for cases, statutes, and regulations in all fifty states and the District of Columbia. For each it also provides a sample of in-state citation practice drawing upon a recent decision of the state's highest court and notes any explicit citation rules governing briefs and memoranda submitted to it.

Search states

| | | | | |
|---|---|---|---|---|
| Alabama | Cases | Statutes | Regulations | Examples and Rules |
| Alaska | Cases | Statutes | Regulations | Examples and Rules |
| Arizona | Cases | Statutes | Regulations | Examples and Rules |
| Arkansas | Cases | Statutes | Regulations | Examples and Rules |
| California | Cases | Statutes | Regulations | Examples and Rules |
| Colorado | Cases | Statutes | Regulations | Examples and Rules |
| Connecticut | Cases | Statutes | Regulations | Examples and Rules |
| Delaware | Cases | Statutes | Regulations | Examples and Rules |
| District of Columbia | Cases | Statutes | Regulations | Examples and Rules |
| Florida | Cases | Statutes | Regulations | Examples and Rules |
| Georgia | Cases | Statutes | Regulations | Examples and Rules |
| Hawaii | Cases | Statutes | Regulations | Examples and Rules |
| Idaho | Cases | Statutes | Regulations | Examples and Rules |
| Illinois | Cases | Statutes | Regulations | Examples and Rules |
| Indiana | Cases | Statutes | Regulations | Examples and Rules |
| Iowa | Cases | Statutes | Regulations | Examples and Rules |
| Kansas | Cases | Statutes | Regulations | Examples and Rules |
| Kentucky | Cases | Statutes | Regulations | Examples and Rules |
| Louisiana | Cases | Statutes | Regulations | Examples and Rules |
| Maine | Cases | Statutes | Regulations | Examples and Rules |
| Maryland | Cases | Statutes | Regulations | Examples and Rules |

*Figure 5-2 Search Box on Lists of States*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Virgi

| | | | | |
|---|---|---|---|---|
| Virginia | Cases | Statutes | Regulations | Examples and Rules |
| West Virginia | Cases | Statutes | Regulations | Examples and Rules |

*Figure 5-3 Demo of Search Result*

### 5.2.1 User Testing

The second version of the site was hosted on Amazon's AWS and the link was given to the client and a law student for testing.

**The feedback:**
**Client:**

- The examples to be first displayed as-is, without any special formatting or highlighting. Only when the user clicks on a button, must specific sections within the example get highlighted.

**Student:**

- The clicked item on the left navigation pane must be bolded/embossed, so that the user has a frame of reference of his current page.
- Different fonts.
- Different color and organization schemes.

The client's feedback will be implemented in the next iteration. The student's feedback will be subject to client's review and approval.

## 5.3 PLAN FOR THE THIRD ITERATION

- Improve the compatibility of the new website with caliber.
- Finish the implementation of the search bar and the tagging of the website.
- Enhance the website interactivity, based user testing feedback.

We plan on having the system completed and tested by the third iteration.

## 5.4 GANTT TABLE & GANTT CHART

The schedule as proposed in the feasibility study has been slightly changed. The Gantt table and Gantt chart has been updated accordingly.

| No | Task | Start Date | End Date | Duration | Slack | Status |
|---|---|---|---|---|---|---|
| 1 | Feasibility Study | 18-Sep-15 | 25-Sep-15 | 6 | 2 | Completed |
| 2 | Study of structure of files | 25-Sep-15 | 5-Oct-15 | 8 | 3 | Completed |
| 3 | User Interface Design - Phase 1 | 26-Sep-15 | 2-Oct-15 | 5 | 2 | Completed |
| 4 | Iteration #1 | 2-Oct-15 | 20-Oct-15 | 15 | 4 | Completed |
| 5 | Website implementation - Phase 1 | 2-Oct-15 | 15-Oct-15 | 11 | 3 | Completed |
| 6 | Convert existing website files | 10-Oct-15 | 20-Oct-15 | 9 | 2 | Completed |
| 7 | Presentation #1 Report #1 | 20-Oct-15 | 21-Oct-15 | 2 | 0 | Completed |
| 8 | Client/User Testing #1 | 21-Oct-15 | 24-Oct-15 | 3 | 1 | Completed |
| 9 | Iteration #2 | 24-Oct-15 | 9-Nov-15 | 14 | 3 | Completed |
| 10 | Website implementation - Phase 2 | 24-Oct-15 | 3-Nov-15 | 9 | 2 | Completed |
| 11 | Convert new website files | 30-Oct-15 | 4-Nov-15 | 4 | 2 | Completed |
| 12 | Presentation #2 Report #2 | 3-Nov-15 | 5-Nov-15 | 2 | 1 | In progress |
| 13 | Client Testing #2 | 4-Nov-15 | 9-Nov-15 | 5 | 1 | In progress |
| 14 | User Testing #2 | 4-Nov-15 | 9-Nov-15 | 5 | 1 | In progress |
| 15 | Iteration #3 | 5-Nov-15 | 28-Nov-15 | 20 | 4 | In progress |
| 16 | Website implementation - Phase 3 | 5-Nov-15 | 15-Nov-15 | 9 | 2 | In progress |
| 17 | Integrate conversion on the | 10-Nov-15 | 20-Nov-15 | 9 | 2 | New |
| 18 | Client Testing #3 | 18-Nov-15 | 28-Nov-15 | 9 | 2 | New |
| 19 | User Testing #3 | 18-Nov-15 | 28-Nov-15 | 9 | 2 | New |
| 20 | Final presentation #3 Report #3 | 28-Nov-15 | 3-Dec-15 | 5 | 1 | New |
| 21 | Delivery of project | 3-Dec-15 | 4-Dec-15 | 2 | 0 | New |

*Figure 5-4 Gantt Table*

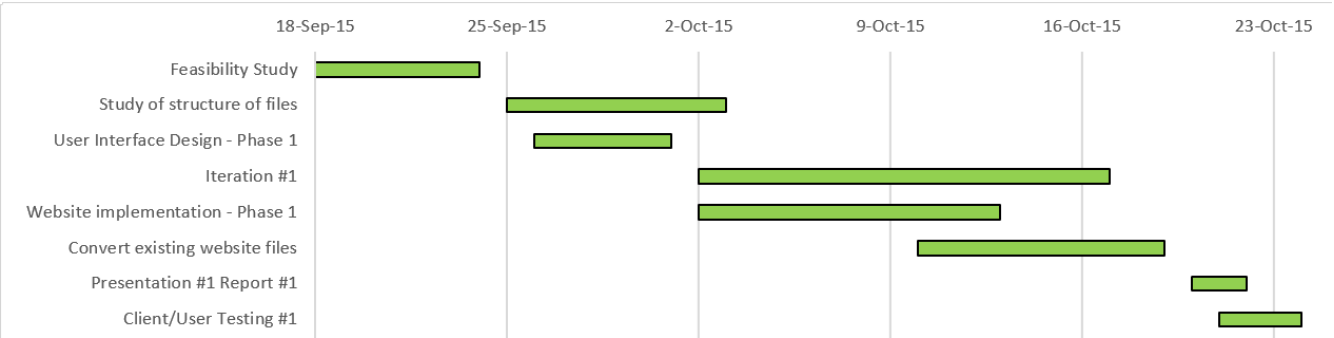

*Figure 5-5 Gantt Chart*