# Cuneiform digital library initiative: CDLI

#### **Proposal - Google Summer of Code 2020**

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• Timezone : IST (India)

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Language : English

# **Project Proposal**

#### **Project Title(s)**

- 1. Design Integration
- 2. Accessibility audit and enhancement

#### **Overview**

The cuneiform digital library initiative has a vivid user base. Coming up with an outstanding first impression is an expectation that cannot be downplayed. This aspect should be captured in all fields and on a daily basis. The same case applies when you are developing a website.

Although a neat and pleasant UI is a must, web accessibility must be equally important. For a platform to grow i.e. more people use it in their everyday lives thus **design integration** can be paralleled with **Accessibility audit and enhancement**. A website accessible to everyone will not only mean we open the door to a wider range of users but will also go towards helping make the web accessible for everyone. I strongly believe that a UI should be gratifying as well

as welcoming. To sum it up by providing better user experience to the current audience, this project will help magnify the audience of CDLI.

# **Detailed Description**

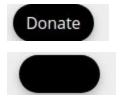
### **Accessibility** enhancements

Improper Contrasts

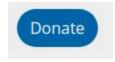
There were many instances of improper contrast between the color of text and its background for the element.

#### example:

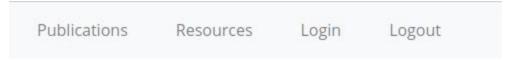
1. Donate button on footer (Improper contrast on Hover)



This issue can be resolved by the following "Donate Button", the updated button is constructed using the same color palette



#### 2. Navbar



This issue can be resolved by the following markup which is constructed using the same color palette



#### 3. Journals Page

AfO
OrSu
Nature
<a href="http://cdli.ucla.edu/collections/hermitage/aboutcuneiform_en.html" target="_blank">http://cdli.ucla.edu/collections/hermitage/aboutcuneiform_en.html</a>
Eblaitica
RA
BAAL
Museum Notes
ZA
WO

This issue is consistent in all the pages that implore #007bff with backgrounds of #ffffff resulting in a poor contrast ratio(3.98). Using #0070f7 would be a viable change to the color palette. This will result in a contrast ratio of (4.51).

#### • Usage of i (italic) element tag

 According to directives of WCAG(AA) use of <i> tags should be replaced with<em> or <strong>. For fontawesome <i> should be replaced with <span>

```
<i class="fas fa-baseball"></i> NOT IDEAL
<span class="fas fa-baseball"></span> IDEAL
```

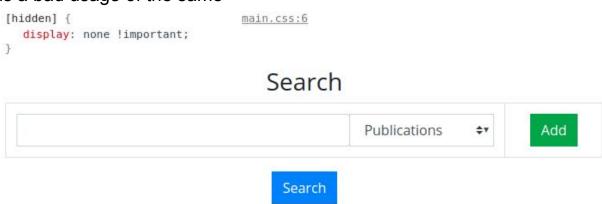
- Missing attributes in various tags
  - 1. en attribute in <html>
  - 2. Alt in <img>
  - Href in <a>

#### Header Nesting

1. Modifying the header levels such that the various <header> tags appear in a descending manner.

```
<!-- bad example -->
<h1>The First Heading</h1>
Here is some demo text.
<div><div><h3>The bad Heading</h3></div></div>
Here is some more demo text.
```

- Missing Labels on input fields
  - 1. <Input> fields should be always complemented by <label>
  - 2. It is also not advisable to use **display:none** in order to hide labels, using an aria-label would be a viable solution. Following is a bad usage of the same



#### Avoiding Keyboard Trap

1. Users have varying degrees of motor skills and may use the website with only their keyboard. We must make sure that keyboard-only users can't get stuck anywhere on your site. All parts of the website

# should be reachable by keyboard alone. Example of keyboard trap is as follows: **RELATED ACTIONS** Edit your profile

#### • Missing Focus Visible

At first glance this seems similar to the above parameter but it's not.
Users need to find their way around the website in a sequential and
meaningful order. If they use a keyboard to navigate your website.
Therefore any form field, link, menu, content area or any such
element must contain a visible outline and/or underline should be
used.

A complete list can be found <u>here</u>.

#### **Project Requirements**

According to the discussions going on gitlab repository and slack, the expected libraries for collaboration include

- 1. WAVE
- 2. JAWS
- 3. Good understanding of WCAG concepts
- 4. Bootstrap 4
- 5. Basic knowledge of PHP

#### **Benefits of Bootstrap**

- Fewer Cross browser bugs
- Supports major of all browsers and CSS compatibility fixes
- Lightweight and customizable
- Responsive structures and styles
- Good documentation and community support
- Great grid system

#### **Benefits of Using WAVE**

 WAVE is a tool developed by WebAIM for evaluating accessibility of web contents

- WAVE tool is available online as well as a browser extension
- It is web accessibility evaluation tool which evaluates the accessibility of web contents by annotating the copy of web page
- It performs the accessibility evaluation on browser itself and do not save anything on server
- WAVE also show some recommendations to overcome accessibility issues in the system

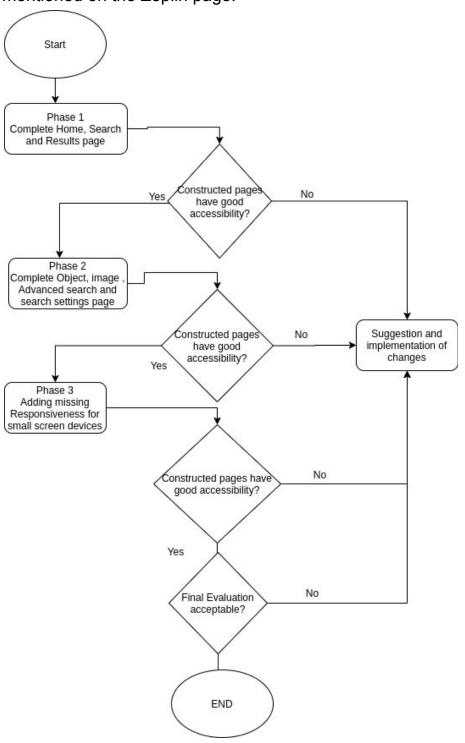
#### **Benefits of Using JAWS**

- JAWS (Job Access With Speech) is tool developed by Freedom Scientific used as Blindness Solution
- It is the most popular Screen Reader for the customers who have lost their vision
- Some of the good features of JAWS includes two multi-lingual synthesizers
   Viz. Eloquence and Vocalizer Expressive
- Works with IE, Firefox and Microsoft Office and also supports Windows with its touch screen gesture
- Fast Information Access and time-saving using Skim Reading
- Supports MathML contents of IE and its OCR feature provides access to the text and PDF documents
- Provides Braille input from the braille keyboard and also includes drivers for braille display

We'll be using tools like WAVE & JAWS as per the advantages they offer as mentioned above.

# **Design Integration**

The idea behind the project is to add new features to the CDLI website which are mentioned on the Zeplin page.



## **Schedule**

#### **Timeline**

- 1. 3rd April 4th May:
  - a. Fixing bugs in framework.
  - b. Getting familiar with the code.
- 2. 4th May 31st May :
  - a. Community Bonding.
  - b. Understanding the structure of framework.
- 3. Week 1 2 (1st June 14th June) Building Website screens 1
  - a. Adding markup to the *Home* & *Search Results* also including interior markups such as *Filter options modal* and *Search results* with filter applied pages.
  - b. Add and suggest appropriate markup changes like to support accessibility.
  - c. Suggest changes that can improve UX.
- 4. Week 3 (15th June 21st June) Accessibility improvement
  - a. Achieve at least *level A* accessibility score according to WCAG 2.0 norms on pages completed in the previous task.
  - b. Use JAWS/WAVE to obtain an accessibility score.
  - c. Add necessary changes, if any.
- 5. Week 4 5 (22nd June 5th July) Building Website screens 2
  - a. Adding markup to the object, Image, Advanced search and Search settings pages including interior markups such as object page expanded.
  - b. Add and suggest appropriate markup changes to support accessibility.
  - c. Suggest changes that can improve UX.
  - d. Add in suggestions as per discussions with respective mentors/community members before phase 1 evaluation.

- 6. Week 6 (6th July 12th July) Accessibility improvement
  - a. Achieve at least *level A* accessibility score according to WCAG 2.0 norms on above screens.
  - b. Use JAWS/WAVE to obtain an accessibility score.
  - c. Add necessary changes, if any.
- 7. Week 7 8 (13th July 26th July) Filling gaps for Small Screens
  - a. Adding custom markup APART from bootstrap, if required
  - b. Add in suggestions as per discussions with respective mentors/community members before phase 2 evaluation
  - c. Finialize WCAG 2.0 Level A checklist
    - i. Non-text content
    - ii. Info and Relationships
    - iii. Use of Color
    - iv. Keyboard Control
    - v. No Keyboard Trap
    - vi. Focus Order
    - vii. Page Titled
    - viii. Link Purpose
    - ix. Language of Page
    - x. On Focus
    - xi. On Input. etc
- 8. Week 9 (27th July 2nd August) Accessibility improvement
  - a. Achieve at least *level AA* accessibility scores according to WCAG
     2.0 norms on screens
    - i. Appropriate Contrast in colors
    - ii. Resize Text
    - iii. Images of Text
    - iv. Heading and Labels
    - v. Language of Parts
    - vi. Consistent Navigation
    - vii. Consistent Identification, etc.
  - b. Use JAWS/WAVE to obtain an accessibility score.
  - c. Add necessary changes, if any.

- 9. Week 10 (3rd August 9th August) Wrapping Up
  - a. Add appropriate snippets/comments for upcoming contributors to join.
  - b. Work on remaining works, if any.
  - c. Improve code quality and fix bugs, if any.
  - d. Implement dark mode feature, if time permits.
- 10. 10th Aug Final Evaluation Final Testing
  - a. Finish Unit and UI testing.
  - b. Documentation of code.
  - c. Submit final evaluation.

The timeline may change depending on the scheduling conflicts due to the COVID-19 outbreak.

# Why me?

Contributing to open source organization seems very intriguing to me. I got to learn new skills, working with like-minded communities and challenging myself to implement design patterns and skills that couldn't be done before.

I've been contributing to CDLI for a few weeks now and I'm overwhelmed by the way things are turning out. Initially I ran into errors with the setup itself and was worried that how can I even contribute to this project if I can't even set it up on my local machine. That was a while ago now I can confidently say that I know the inside and outside. I've also made a significant amount of contributions, have been active on the discussions section on gitlab as well as slack. Here are some insights regarding them

#### **Contributions to CDLI**

- #166 (merged): Disable auto-complete on 2fa input on the login screen
- !58 (merged): Footer fixes and wcag badge addition.
- !57 (open): Correction in Titles of Navbar.
- #186(open): Add appropriate Routing when CDLI logo is clicked

Here are some projects that involve somewhat similar coding practices/languages/patterns to "framework" that I've previously worked upon

#### Previous Projects and work related to Web Design

- NightCrawler
  - A web-crawler application made during my summer vacation
  - Technologies used
    - cakePHP
    - ES6
    - Mysql
- Thread
  - Multi User chat room platform.
  - Uses socket programming to relay messages.
- ME3M
  - A social networking website with a primary focus on memes
  - Made it during a 24 hour Hackathon in my college
  - Technologies used
    - cakePHP
    - NodeJS
    - Mysql/MongoDb

# **Development Experience**

I was introduced to development two years back. Some of the projects that I have worked on include

#### Web Development Intern

#### Organization / Firm : Survey2connect

At Survey2Connect I worked on the Design integration of the UI <u>website</u>. The project involved migrating the website from jquery to Angular. The details of the project and my contributions can be found <u>here</u>. I am still in touch with the mentors and keep contributing to it once in a while.

#### • Software Development Intern

#### Organization / Firm : CodePark

I was responsible for developing and maintaining the <u>product</u>. This product was built using React.js paired with MaterialUI for the UI engine. On successful completion I was praised for my on-time, accurate and reliable performance.

#### Web Development Instructor

#### Organization / Firm : CodingZen

I volunteered to teach web development to the K-12 age group. I conducted various workshops where I taught HTML5, CSS3, JS(Vanilla) ES6 and basics of Node.js.

#### Campus Activities

I am pursuing B.Tech in Computer Science and Engineering from Jaypee Institute of Information Technology. I am currently in my pre-final year. I am the Technical Lead of a campus group called <a href="DSC-JIIT128">DSC-JIIT128</a> where we develop software round the year for the people of JIIT.