Then&There:

Online catalogue of literary works classified according to the geographical site where the action takes place

Undergraduate Thesis
Bachelor in Multimedia
Interactive applications development

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Abstract

The **Then&There** project has as a goal to offer, in an open and accessible way, access to a database of literary works that allow searches according to the geographical site where the action takes place. The aims of the platform are twofold: it is thought as a complement to enrich physical trips as well as an information source to move oneself to specific places through fiction, with the strong conviction that often enough a narration can bring a deeper insight than a descriptive or technical text.

Keywords: literature, books, catalogue, accessibility, travelling, database, Drupal, UCD

Index

Index of figures and tables

1. Introduction

The mission of this project is to fill a perceived gap, to create a resource after having missed it. It is quite frequent that one preparing for a trip takes advantage of the new media to find pictures and information about the destination, in order to help to track the route to follow and also to introduce the traveller to the unknown environment. Similarly, some make a research to know the technical details (currency, transports...) and also historical and cultural context that implies a better knowledge of the destination characteristics.

However, if you want to reinforce it with reading a book, the advanced search of libraries catalogues do not offer the option to filter the search using the geographical context of the argument nor when it happens, and over the Internet does not seem to be any tool providing that possibility. This is the main goal of **Then&There**: to create a consulting website that allows enriching trips with a better knowledge of the visited places and its people thanks to literature.

This approach when it comes to classifying texts has a consequence with a potential to benefit another kind of audience and it is also an important aim of the interface: help the ones who, for any reason, do not have or prefer not to travel but enjoy discovering landscapes and societies far or not so much away.

2. Description

As said before, **Then&There** focuses on facilitating its users a list of books whose action occurs in a particular place. That is, then, the main search parameter. It is also an important one the temporal, making it possible to restrict the results depending of when the stories develop. On top of that, there is the possibility to conduct an advanced search by filtering the results with more common filters (author, categories).

The database that feeds the platform will increase in time, because albeit a first insertion of elements has been done, it is intended that thanks to user's collaboration, who are encouraged to suggest new books to include to the database, it will expand. In this manner, we want to take advantage of the opportunity that new media offers to add up knowledge and make it reachable for everyone.

That is why, to provide a succeeded interaction with the maximum number of people and make it possible for **Then&There** to become a real and useful tool beyond its academic purposes, a crucial aspect of the interface is its usability. Therefore, much emphasis is and will be put in anything related to providing solutions so it can be used by diverse people from multiple devices.

Taking into account diversity is important not only because is the right thing to do, but because it is in any website best interest: the wider the target the better, and, moreover, many means that improve the accessibility of a website increases as well its search engine optimization (SEO). Besides, it would not make much sense paying attention to contexts and devices people are using and forget about users themselves.

3. Goals

This work has two kind of goals: of the application and personal.

Application goals

1. To offer a literary works consulting tool with a database that includes an attribute not common in library and other sources searches: the geographical localization of the plot. Secondarily, provide another infrequent filter: when is the action developing.

2. To help enrich trips suggesting an approach that surpasses a conventional guide through reading stories that take place there, believing that it helps grasp and understand better a reality and its protagonists and in a deeper way than just knowing a few cultural symbols or a bit of easily accessible history.

3. To encourage reading amongst those who by physical impediments, lack of time, money or other factors can not or choose not to move to discover first hand other places, conveying the huge potential of this reading to mentally travel and live new experiences.

4. To create a social network and eventually a community formed by people that share interest in travelling around the globe and books.

Personal goals

- To consolidate knowledge from diverse branches of the degree: programming, interface design, project management, English. Go deeper in them through the realization of a product that, even basic, complete.

- To succeed in an application solid enough to be able to show my professional skills.

- To take advantage and contribute into the use of collaborative intelligence, while using open technologies and sharing the result with a Creative Commons license, besides inviting users to collaborate.

4. Contents

Book cards

The main content type of **Then&There** will be the information about the books, so for each book existing on the database there will be a card. Book cards will have many attributes, and some of them will become filter criteria.

Attributes already findable (Wikipedia and other):

- Title
- Image
- Author
- Original language (there is another attribute that will be present in the future: other languages)
- Synopsis
- Categories (including subjects, topics, genres)
- First published: if known, the year, place and publisher of the first edition.

Attributes specific to **Then&There**:

- Where: where the fiction takes place. There will have to be the coordinates of the most significant places of the story in order to feed a map and words that can be cities, states, countries, etc., organised as a taxonomy.
- When: when the fiction happens. A year or range of years and other words like 21st century or Medieval age organised as a taxonomy.
- Rating (by users)

If the book is available because of its copyrights status (public domain or such), it will be indicated and there will be a link to download it (from it's original source, like Project Gutenberg).

Site structure

The site has a very simple structure:

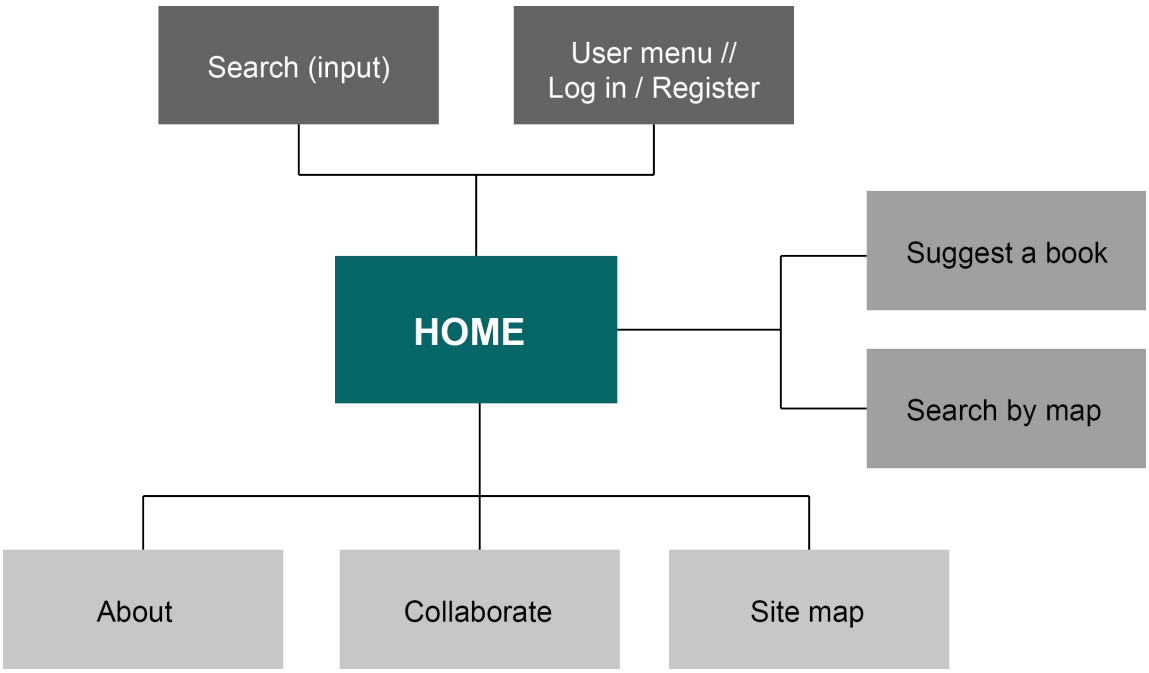


Illustration 1: Diagram of the structure of the site

5. Methodology

In order to move forward as planned the calendar has been as respected as possible, but at the same time it was foreseen that it would need to be flexible and adapt to changes that in an inevitable way have appeared like they do at all projects. To compensate the lack of experience it has been important to follow recommendations, and between them operating in an iterative way and taking advantage of all the resources available stand out.

Also, it has been intended to have in mind the final users at all times, giving attention to their needs, wants and limitations. This process is known as user centred design (UCD), and there have been used some usability techniques with and without users, like guerrilla testing[2] and cognitive walkthroughs[3].

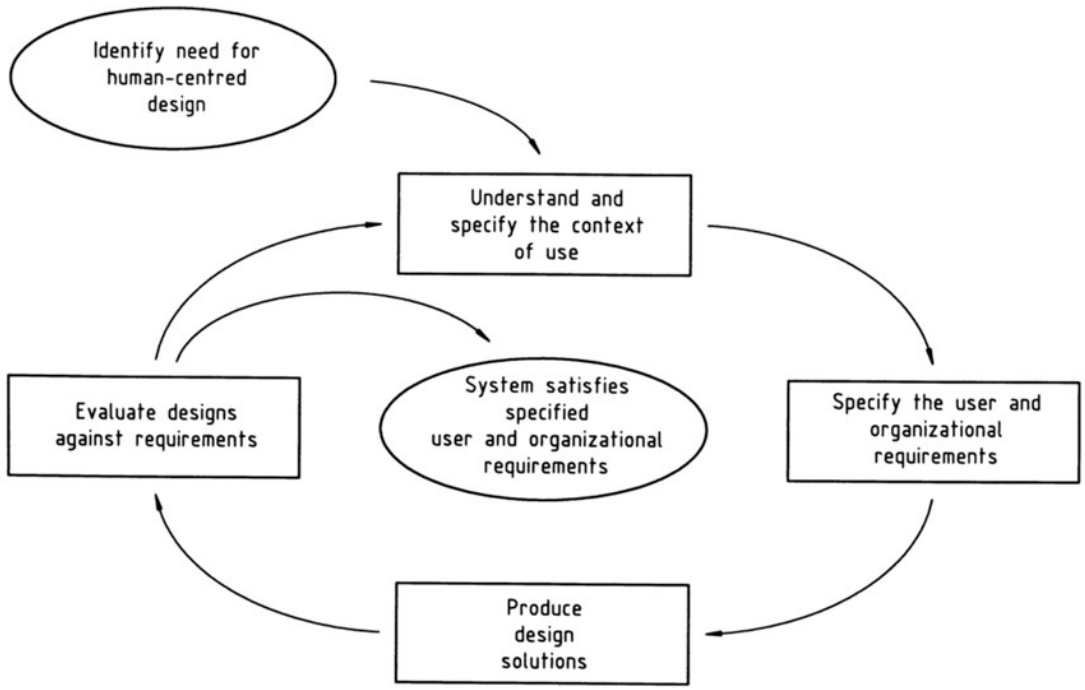


Illustration 2: The process is defined in the standard ISO 9241-210. Source.

2 About this technique: http://www.uxbooth.com/articles/the-art-of-guerrilla-usability-testing/.
3 More information in https://en.wikipedia.org/wiki/Cognitive_walkthrough.

Key concepts

There are some key concepts that have been driving decisions and are expected to define this project that are worth highlighting:

- **Open**: standards and open source resources are the first choice.
- **Accessible**: accessibility testing on each stage, SEO techniques such as the use of metatags.
- **Social**: building a community is a priority.
- **Mobile first**: if there is a compromise to be made, mobile (and, thus, touchscreens) is favourited.

6. Application architecture

In order to decide how the architecture of the site will be it is essential to make a functional analysis.

Functional analysis

There are some important requirements that will guide the choices taken regarding the application:

1. The main function will be providing users with a list of the books, if any, the fiction of which is placed in a specific term of search.
2. It has to be responsive, having a proper layout in the most common smartphones, monitors of different sizes and resolutions, and tablets.
3. It will be as accessible as possible (at least level A from WCAG 2.0, see success criteria at Annex II: Success criteria from WCAG 2.0 and results at Success criteria from Web Content Accessibility Guidelines (WCAG 2.0)).
4. The contents have to be easy to update even by a non-technic profile.

Use of Drupal

To achieve a fully working platform with these stated requirements, specially to meet the 4th one, there was a need to use a Content Management System[4] (CMS). Considering different options, Drupal was chosen because of the following:

- It is an open source content management platform
- It has a strong and inclusive community (see Accessibility statement)
- It is very flexible
- There was previous experience working with it[5]

4 Information about Content Management Systems: https://en.wikipedia.org/wiki/Content_management_system.
5 It is important to understand Drupal's architecture basics; this document by John VanDyk is very useful: http://www.ent.iastate.edu/it/Intro_to_Drupal_7_Architecture.pdf.

7. Planning

The project has been organised in tasks (numbered), phases (A to D) and milestones. There have been some adjustments made to reflect deviations and adaptations to circumstances.

0. Identification of the purpose and planning	Hours: 14
Start date: September 19th	End date: September 29th
PAC 1 delivery	
Date: September 30th	
A. ANALYSIS, DESIGN & EVALUATION	
1. User/audience analysis	Hours: 3
Start date: October 1st	End date: October 1st
2. Functional analysis and content requirements	Hours: 3
Start date: October 2nd	End date: 2 October 2nd
3. Definition of accessibility requirements and metrics	Hours: 3
Start date: October 3rd	End date: October 3rd
4. Interaction and information architecture design	Hours: 3
Start date: October 6th	End date: October 6th
5. Interface and navigation design	Hours: 3
Start date: October 7th	End date: October 7th
6. Visual design	Hours: 3
Start date: October 8th	End date: October 8th
7. Accessibility evaluation and iteration on previous points	Hours: 6
Start date: October 9th	End date: October 10th
Validation of phase A deliverables	
Date: October 11th	
B. IMPLEMENTATION	
8. Definition of implementation requirements	Hours: 3
Start date: October 13th	End date: October 13th
9. Architecture implementation	Hours: 18
Start date: October 14th	End date: October 20th
10. Navigation implementation	Hours: 6
Start date: October 21st	End date: October 22nd
11. Visual implementation	Hours: 12
Start date: October 23rd	End date: October 28th
PAC 2 delivery	

Date: October 31st	
12. Content creation and sample data insertion to database	Hours: 9
Start date: October 29th	End date: October 31st
13. Accessibility evaluation and iteration on previous points	Hours: 30
Start date: November 3rd	End date: November 14th
C. CONTROL	
14. Test design and execution	Hours: 18
Start date: November 17th	End date: November 24th
15. Accessibility evaluation	Hours: 12
Start date: November 25th	End date: November 28th
PAC 3 delivery	
Date: November 30th	
16. Iteration on phases A, B and C	Hours: 15
Start date: December 1st	End date: December 10th
17. Improvements implementation, iteration on phase C	Hours: 21
Start date: December 11th	End date: December 19th
Final delivery draft delivery	
Date: December 20th	
D. DEPLOYMENT & CLOSURE	
18. Manuals and documentation development	Hours: 6
Start date: December 22nd	End date: December 23rd
19. Project evaluation	Hours: 6
Start date: December 24th	End date: December 29th
20. Thesis closure	Hours: 9
Start date: December 30th	End date: January 5th
21. Presentation elaboration	Hours: 6
Start date: January 30th	End date: January 8th
22. Presentation recording	Hours: 2
Start date: January 9th	End date: January 9th
Final delivery and upload project to O2 repository	
Date: January 10th	

Gantt chart

A Gantt chart[6] has been elaborated as a part of the planning.

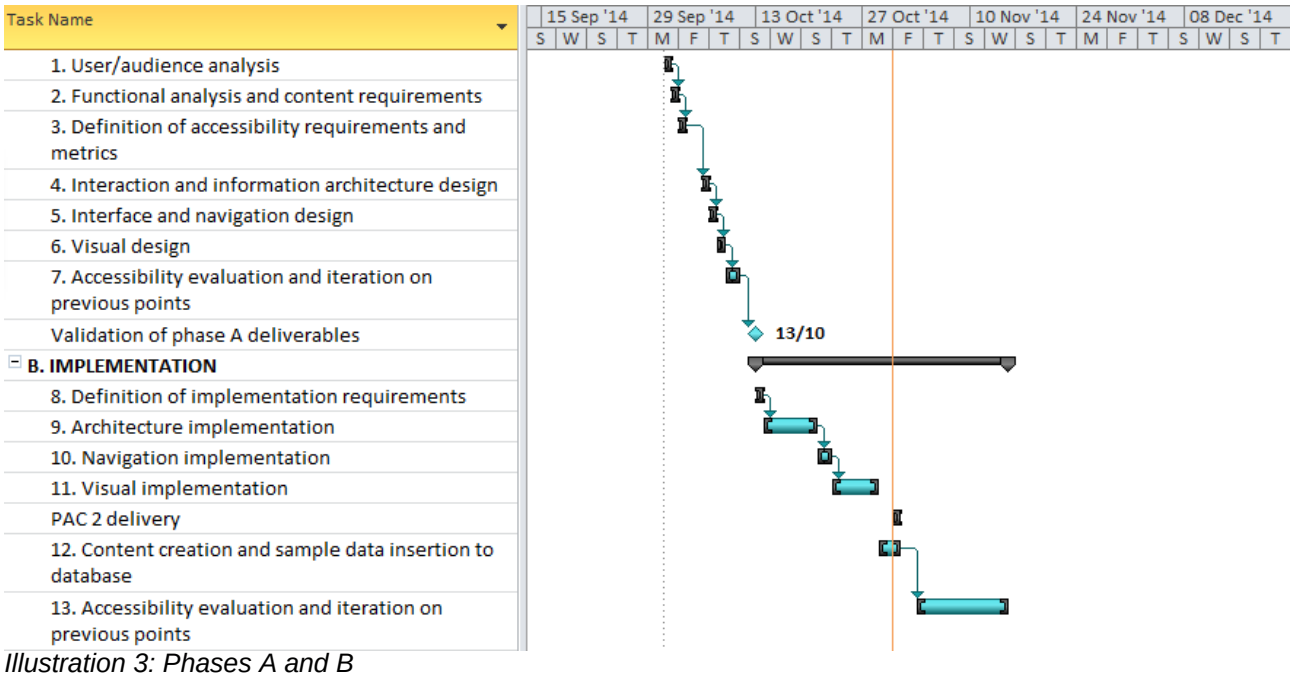


Illustration 3: Phases A and B

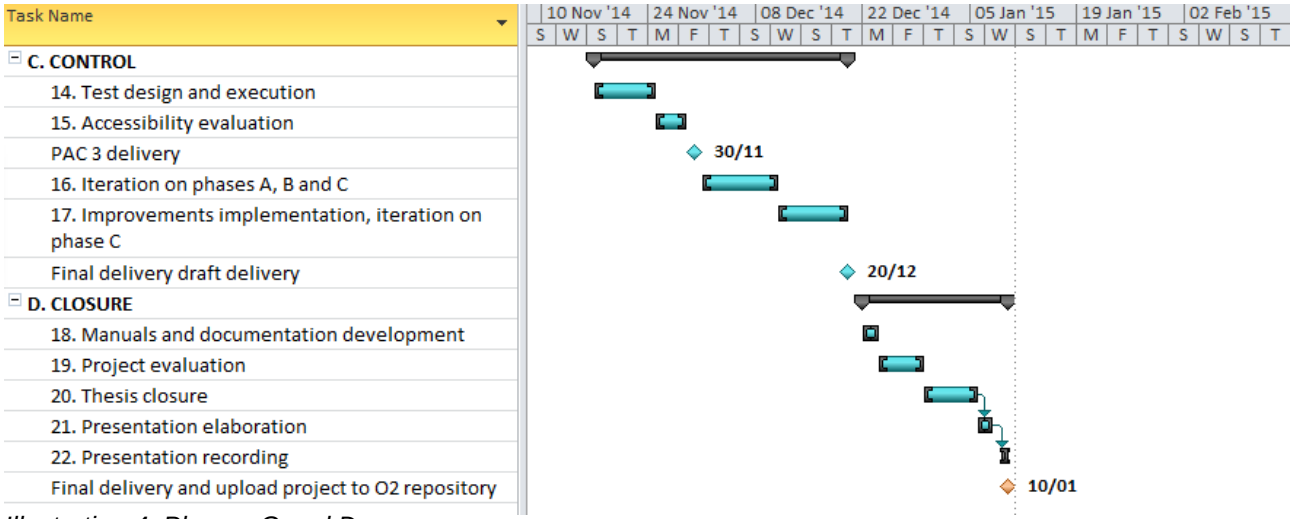


Illustration 4: Phases C and D

6 About Gantt charts: https://en.wikipedia.org/wiki/Gantt_chart.

8. Work process

Then&There is now a live site at this domain: **http://www.thenandthere.info**. To achieve it, the work process has focused into the following aspects.

Book card

Besides the basic page and article content types provided by Drupal there is a third one (as planned, see 4. Contents), Book card, which corresponds to the main content of the site, books' references.

LABEL	MACHINE NAME	FIELD TYPE	WIDGET
Title	title	Node module element	
Where	field_book_where	Term reference	Autocomplete term widget (tagging)
When	field_book_when	Term reference	Autocomplete term widget (tagging)
Image	field_book_image	Image	Image
Author	field_book_author	Term reference	Autocomplete term widget (tagging)
Original language	field_book_original_language	List (text)	Select list
Other languages	field_book_other_languages	List (text)	Select list
Synopsis	field_book_synopsis	Long text	Text area (multiple rows)
First published	field_book_first_published	Text	Text field
Categories	field_book_categories	Term reference	Autocomplete term widget (tagging)
Digital version available	field_book_digital_version	Text	Text field
Geofield	field_book_geofield	Geofield	Latitude / Longitude
Rating	field_book_rating	Fivestar Rating	Stars (rated while viewing)

Illustration 5: Book card's content type fields

Where, When, Author and Categories are term references fields, meaning that their values will be a term (or multiple items) present in a taxonomy (each field has a particular vocabulary organised hierarchically). Geofield contains the coordinates of the book (where the action takes place), which feed the map.

Taxonomies

The taxonomies from When and Where fields are constantly evolving and have to be arranged as new books are referenced to keep a logic structure.

Illustration 7: Current state of When taxonomy

Illustration 6: Part of current state of Where taxonomy

Search

Search is managed by Search API (with a back-end provided by Search API Database Search), a substitute for the core search more powerful, along with the essential module Views. On top of that, Facet API makes it possible to filter the results. There are several filters configured: Where (taxonomy order), When (taxonomy order), Author (alphabetical order, with terms with more results first) and Categories (alphabetical order, with terms

with more results first).

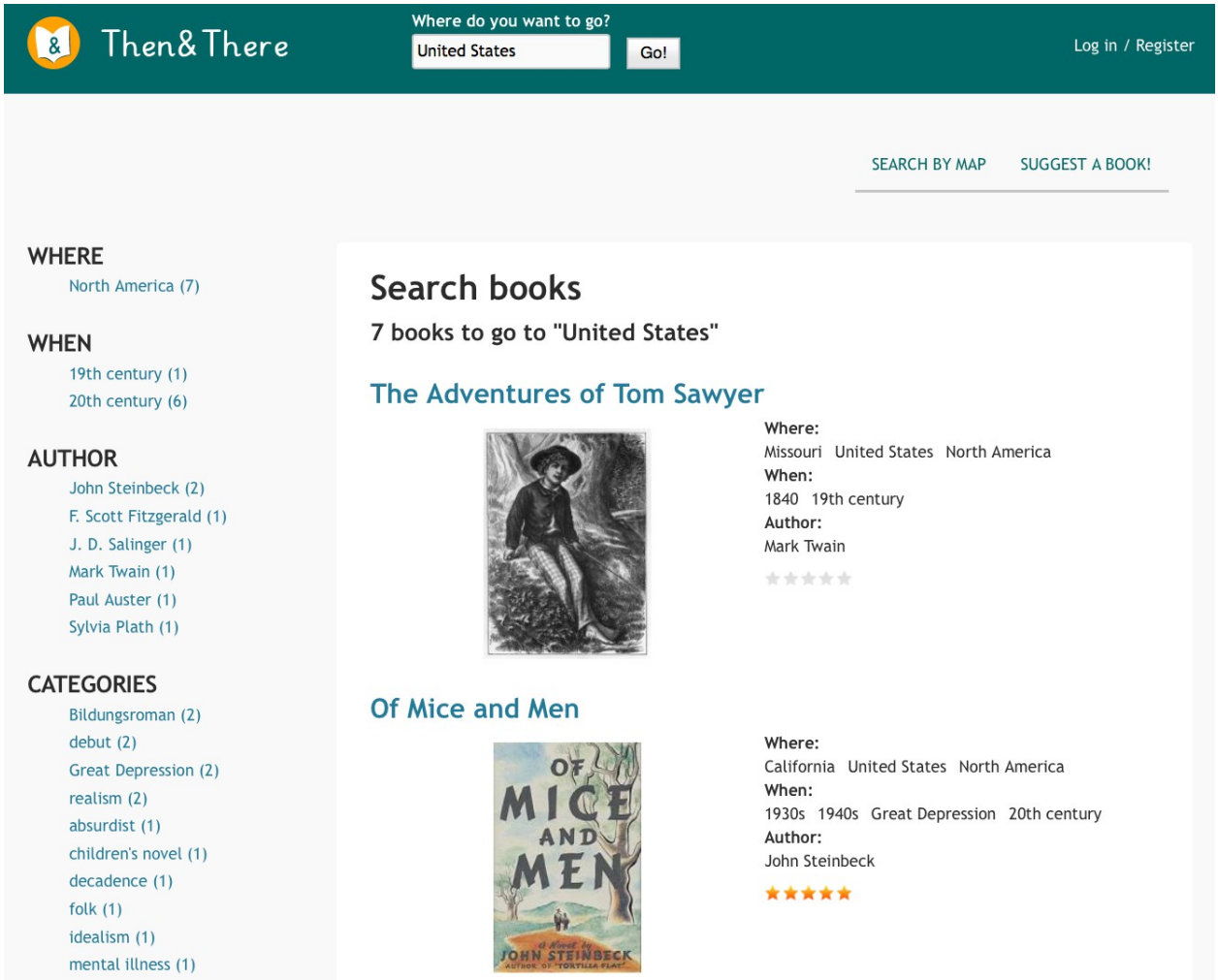


Illustration 8: Partial screenshot of the results of the search "United States"

There is an input text field present at all times in the persistent top bar of the interface for the user to enter a term corresponding a city, state, etc. If the search hits any results these are presented in a new page, where the user can filter them. If that is not the case, a message appears instead offering the user two other options: to suggest a book and to explore a map where all the books are geolocalised.

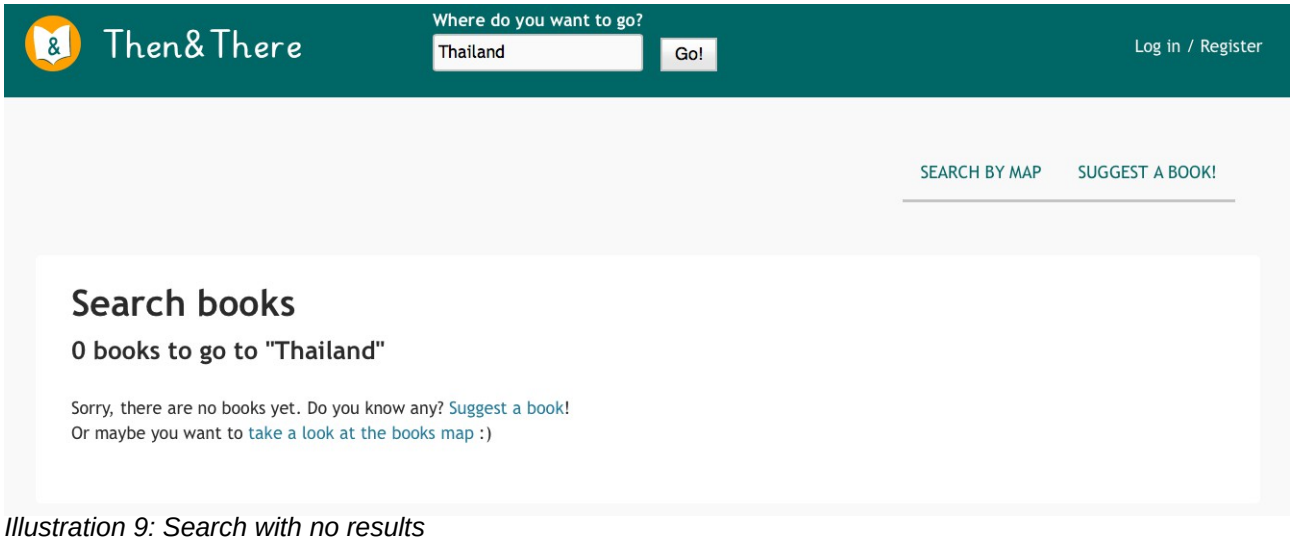


Illustration 9: Search with no results

To improve the usability of the site there has been some code added to the template of the theme used. Drupal makes it possible to alter any forms with the hook_alter_form() function, and in this case that has been used to add to attributes to the field: placeholder and autofocus[7].

```
function thenandthere_form_alter(&$form, &$form_state, $form_id){

if($form_id == "views_exposed_form"){
 if (isset($form['field_book_where'])) {
 $form['field_book_where']['#attributes'] = array(
 'placeholder' => array(t('A city, country, state...')),
 'autofocus' => 'autofocus'
 );
 }
}
}
```

Table 1: Code added to template.tpl.php

As suggested earlier, there is an alternative way to find books, in a map. The front page displays a map with all the books in the database. There is also a link to a specific page where there is an input to enter a term and customise the map according to that. Several modules are necessary: Views, geoPHP, Geofield, Libraries, Leaflet, Leaflet more maps and IP Geolocation Views and Maps.

The accessibility of this feature is limited provided its dependency on styles, but that is not

7 Accessibility of autofocus is not trivial as seen in this thread in UX StackExchange and in this issue in Drupal, but after reading all considerations we have considered that the case matches the criteria to be a positive choice.

considered critical since there is an alternative and other ways to explore the content will be implemented (more popular, last books, etc.).

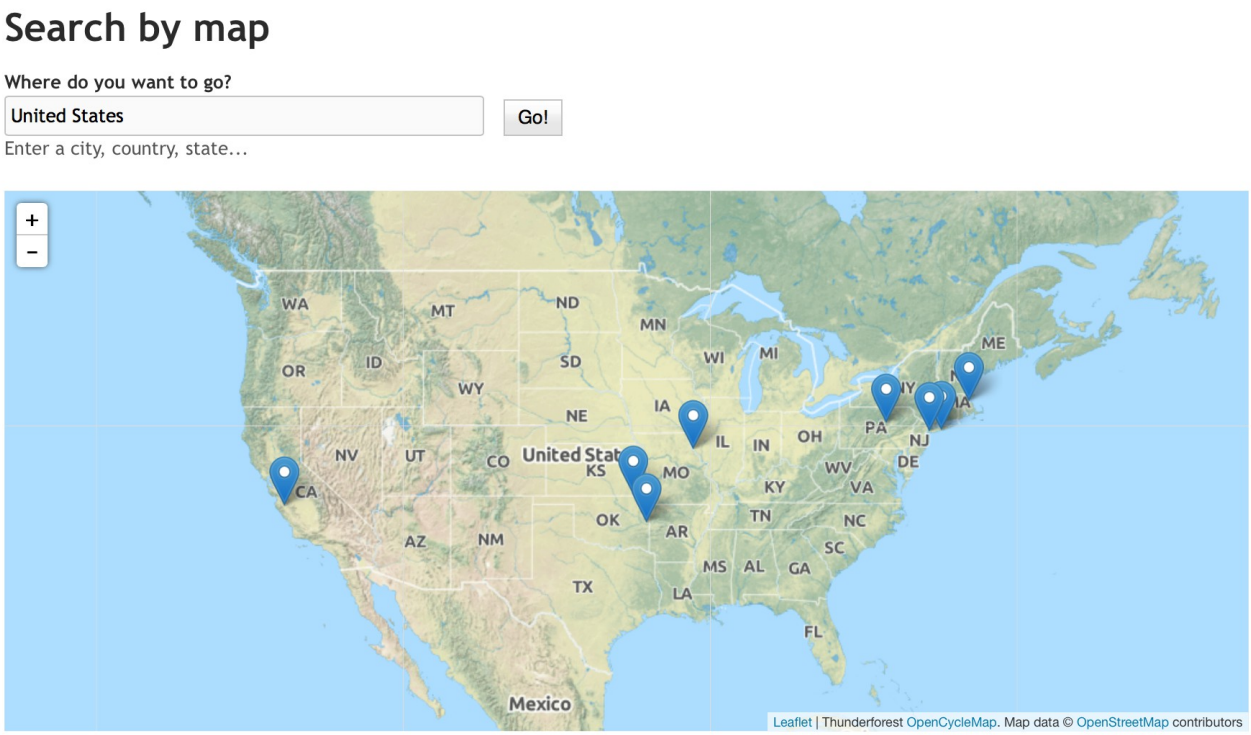


Illustration 10: Results of the search "United States"

Navigation

The global navigation of the site has three main areas:

Top bar

It contains the logo and the name of the site, which are links to the front page. There is also the search input and the user menu, placed following conventions at right. If the user is not authenticated it is a simple link to a *Log in / Register* (testing with users showed that was preferable over having just the words Log in) page, where a link to register and a simple form to log in can be found.

If the user it authenticated there is a text with its username and when the mouse is over or there is a click (or tap in touchscreen devices) we see the drop down menu, with four items:

- Books to read (a list with the books the user has selected as books to read)
- Read books (a list with the books the user has selected as read books)
- Edit profile (change password, mail, etc.)
- Log out (end the authenticated session)

If there is a second click on the username the edit profile page is opened as well.

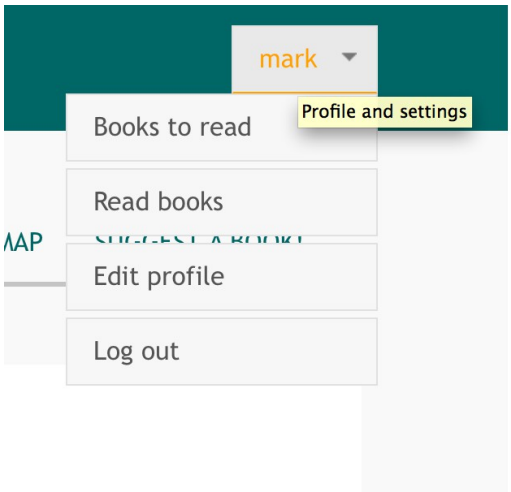


Illustration 11: Authenticated user menu

Header

At this time, this area contains just two links.

Suggest a book!

It is mostly important that the database is increased if the site is going to be helpful, so this page demands a prominent spot. It is accessible for both anonymous and authenticated users to get as many inputs as possible.

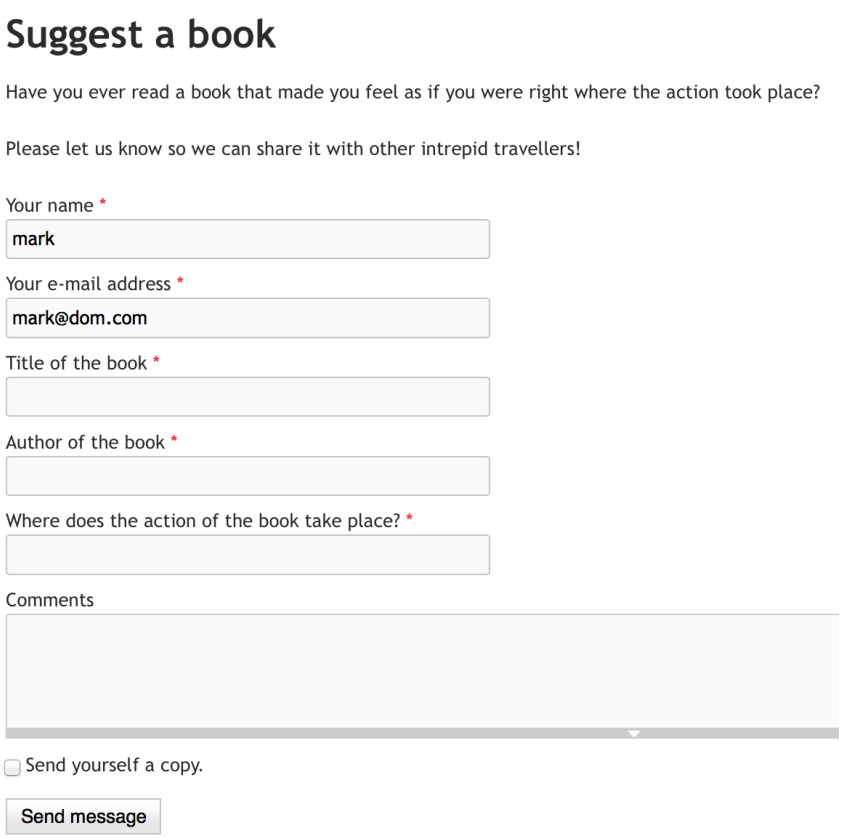


Illustration 12: Contact form to suggest a book

To customise the form to the site's needs a simple module (suggest_fields) has been created: it adds some fields to the form and the information from these to the mail with the suggestion sent.

```
<?php


/**
* Implements hook_form_contact_site_form_alter().
* This function will add some fields to the site-wide contact form,
* by implementing hook_form_FORM_ID_alter().
*/
function  suggest_fields_form_contact_site_form_alter(&$form,  &$form_state,
$form_id) {


// Add Title and Author fields to the contact form.
$form['title'] = array(
'#type' => 'textfield',
'#maxlength' => 120,
'#title' => t('Title of the book'),
'#required' => TRUE,
);


$form['author'] = array(
'#type' => 'textfield',
'#maxlength' => 120,
'#title' => t('Author of the book'),
'#required' => TRUE,
);


// Overwrite Subject and Message fields
$form['subject'] = array(
'#type' => 'textfield',
'#maxlength' => 120,
'#title' => t('Where does the action of the book take place?'),
'#required' => TRUE,
);


$form['message'] = array(
'#type' => 'textarea',
'#title' => t('Comments'),
'#required' => FALSE,
```

```
);


// Define the order of the top level elements on the form (include those from contact_site_form().
$order = array('name', 'mail', 'title', 'author', 'subject', 'cid', 'message', 'copy', 'actions');


// Order the elements by changing their #weight property.
foreach($order as $key => $field) {
$form[$field]['#weight'] = $key;
}
}


/**
* Implements hook_mail_alter().
* This function will add some information in the mail sent.
*/


function suggest_fields_mail_alter(&$message) {


      if ( isset($message['params']['title']) ){
      $language = $message['language'];
    $variables = array(
    '!site-name' => variable_get('site_name', 'Drupal'),
    );
      $message['subject'] = t('[!site-name] Book suggestion', $variables, array('langcode' => $language->language));
    $message['body'][] = "Title of the book: " . $message['params']['title'];
    $message['body'][] = "Author of the book: " . $message['params']['author'];
      $message['body'][] = "Where does the action of the book take place: " . $message['params']['subject'];
      }
}
```

Table 2: Code from custom suggest_ fields module

Search by map

The second link present in the header section is *Search by map*, thats leads to the specific page to input a where term and get the results in a map, a feature that has to be easy to

find.

Bottom menu

There are four items in this secondary area.

- **About**: leads to a page with information of **Then&There**.
- **Collaborate**: leads to a page with information about ways for users to collaborate.
- **Site map**: it consists of lists with all the authors, categories, times and places of the books, as well as the possibility to syndicate to each one of them. Made with Site map module.
- **Creative Commons**: an image with the license of the site that links to its terms.

Modules

Some modules have been installed, enabled and configured in order to reach the designed navigation:

- Superfish: it provides a drop down menu pledged to be as accessible as possible.
- Menu token: makes it possible to personalise menu titles and paths with tokens.
- Tab Tamer: makes it easy to rearrange, hide and disable tabs.
- Contact Forms: expands the features of the wide contact form, with a specific path and additional information for each category.

Social

So far, there are three functionalities implemented that makes Then&There closer to reach its fourth goal, create a community of travelling and books enthusiasts. These add up to the possibility to **comment** books authenticated users have.

- **Rating** (Fivestars module, which is dependent on Voting API): each book card has a punctuation, which is the average of user's rating. It degrades gracefully to HTML when JavaScript is turned off.
- **Personal lists of books** (Flag module): as said before, each user has a link to its Books to read and Read books. These are pages with a personal list with the books the user has selected via a link in its book card. It works well without JavaScript.
- **Share** (Share Buttons by Addtoany module): each book card has a set of SVG sharing buttons (mail, Twitter, Facebook, Google+ and more), that have an alternative in PNG for older browsers.

Illustration 13: Book card of "Of Mice and Men"

User

The process of log in and register have been carefully thought to be as simple as possible.

The password strength present by default has been disabled (Password Strength Disabler) in favour to avoiding confusion and responsiveness. Tabs have been hidden and links removed, and anyone can register without approval. The register form has only the essential fields (username, mail, password). Finally, once a user has logged in is redirected to the front page instead of viewing its account information (Rules module).

Appearance

In Drupal the appearance of a site is controlled by a theme. **Then&There** uses a responsive theme, based in AdaptiveTheme and Corolla. It is a subtheme called Then and There made from the Footheme.

Custom CSS

There are many settings that can be configured via user interface, but for some aspects custom CSS is needed. It is possible to include custom CSS in the same theme settings interface, but for major changes it is recommended using a CSS file declared in the info file. The approach so far has been to include aspects more likely to change in the custom CSS section and some stable aspects in the CSS file declared.

```
/* Menu bar */
#site-name {
color: #ffffff;
padding-right: 3em;
line-height: 1.8em;
}

#edit-field-book-where-wrapper label, div#edit-field-book-where--2-wrapper
label {
color: #ffffff;
}

.block-block, .menu-bar-wrapper section{
margin-top: 0.9em;
}

nav#block-superfish-1, nav#block-menu-menu-log-in-register {
margin-top: 1.2em;
}

nav#block-menu-menu-log-in-register.block.block-menu.menu-wrapper.menu-bar-
wrapper.clearfix.even.last.block-count-4.block-region-menu-bar.block-menu-log-
in-register, nav#block-superfish-1.block.block-superfish.menu-wrapper.menu-bar-
wrapper.clearfix.even.last.block-count-4.block-region-menu-bar.block-1 {
float: right;
}

ul#superfish-1 ul{
right: 0px !important;
}

/* Navigation - background orange, text dark grey */
nav#block-menu-menu-log-in-register a:hover, nav#block-menu-menu-suggest-a-book
a:hover {
color: #2b2b2b !important;
}

/* Flags */
span.flag-wrapper {
border: 1.5px solid #257b99;
border-radius: 4px;
padding: 0.5em;
}

span.flag-wrapper:hover {
border-color: #ffa200;
}

div.flag-outer {
margin-bottom: 1em;
margin-top: 1em;
}

/* Footer */
#footer-panels-wrapper {
padding-left: 7%;
}
```

Table 3: Code included in Custom CSS

```
/* Animated throbber autocomplete fields */
 html.js input.form-autocomplete {
  background-image: none;
 }
 html.js input.throbbing {
  background-image: none;
 }
```

Table 4: Code present in the CSS file[8]

Search results

A key aspect of the layout of this project is how the results of a search are presented. There are some modules created to improve and make responsive the grid format found in Views, like Views Responsive Grid and Views Fluid Grid, but none has proved so far to be the definitive option to **Then&There**. The results by now, thus, are handled with the popular Display Suite module.

Responsive tables

The lists with books read and books to read are lay out as tables, so it was important to find a solution to make them readable in mobile devices. The option chosen was Footable, a module that provides responsive tables by establishing which fields are to be visible depending on the screen width.

Comments

Drupal provides comments with a title field by default and there is no way to delete it through interface, so in order to remove it there has been created a template concerning comments to override the existing one. In addition to erasing the title it changes the order of the comment content and its submitting information.

8 The code regarding the throbber is to fix this issue.

```
<article class="<?php print $classes; ?> clearfix"<?php print $attributes; ?>>

  <?php print $unpublished; ?>

  <?php print $picture; ?>

  <?php print render($title_prefix); ?>
  <?php /* if ($title || $new || $submitted): ?>
  <header<?php print $header_attributes; ?>>

    <?php /* if ($title): ?>
      <h3<?php print $title_attributes; ?>><?php print $title ?></h3>
    <?php endif; ?>

    <?php if ($new): ?>
      <em class="new"><?php print $new ?></em>
    <?php endif; ?>

    <p class="comment-submitted"><?php print $submitted; ?><p>
  </header>
  <?php endif; */?>
  <?php print render($title_suffix); ?>

  <div<?php print $content_attributes; ?>>
    <?php
      hide($content['links']);
      print render($content);
    ?>
  </div>
<?php /** ADDED TO HAVE SUBMIT INFO AFTER THE COMMENT CONTENT **/ ?>
  <?php if ($submitted): ?>
    <p class="comment-submitted"><?php print $submitted; ?><p>
  <?php endif; ?>
<?php /** END ADDITION **/ ?>

  <?php if ($signature): ?>
    <div class="user-signature"><?php print $signature ?></div>
  <?php endif; ?>

  <?php if ($links = render($content['links'])): ?>
    <nav<?php print $links_attributes; ?>><?php print $links; ?></nav>
  <?php endif; ?>

</article>
```

Table 5: Code in comment.tpl.php

Search Engine Optimization (SEO)

One remarkable aspect easy to realise when learning about accessibility is that it shares the same main goal SEO has: improve the quality of an application offered to users. Hence, it is not a surprise that they share as well many means, nor that Drupal is good at

both of them[9].

SEO Checklist (requires Checklist API) is a popular module that breaks the best practices for SEO in Drupal in an organised to-do list with links to download crucial modules, making it easy to track the work done on that aspect. First steps include downloading, enabling and configuring some relevant modules like Metatag, Global Redirect and Redirect. There is still a lot to do in that regard in **Then&There**, but some involves tracking visitors and analysing activity so it is not possible yet.

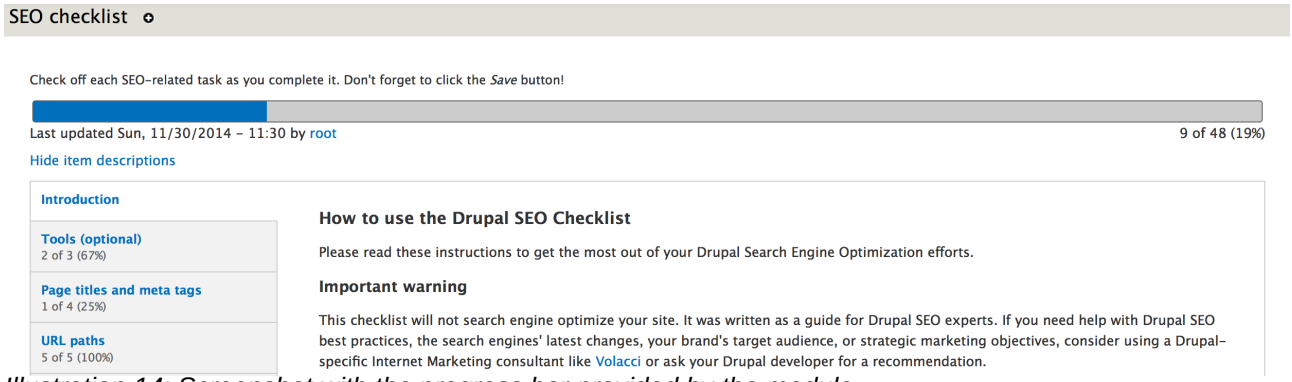


Illustration 14: Screenshot with the progress bar provided by the module

9 See 10 Reasons why Drupal is the best platform for CEO video by Ben Finklea.

9. User profiles

There are a general series of characteristics that divide the users in the following groups:

- Older people
- Low literacy or not fluent in the language
- With low bandwidth or using older technologies
- New and infrequent users
- Mobile phone users

Also, there are two group profiles specific to **Then&There**:

- **Travellers**: they like to read. They like to travel and get to know foreign locations and people.
- **Home readers**: they like to read. They are interested on societies and places different from their own.

In order to have the final users in mind during the whole process, there have been created four personas (see Annex I: Personas).

10. Testing

As previously explained, accessibility is taken into account at each stage. To test whether the site is accessible or not, the criteria from the World Wide Consortium (W3C) has been used (see Annex II: Success criteria from WCAG 2.0).

Success criteria from Web Content Accessibility Guidelines (WCAG 2.0)[10]

The (W3C) provides the Web Content Accessibility Guidelines (WCAG), currently version 2.0. Following these guidelines makes content accessible to a wider range of people with disabilities, including blindness and low vision, deafness and hearing loss, learning disabilities, cognitive limitations, limited movement, speech disabilities, photosensitivity and combinations of these. Following these guidelines also often make Web content more usable to users in general.

There are three levels (A, AA, AAA) of conformance defined. For this project the three levels will be assessed and pursued, albeit just level A is considered a goal. Special attention will be given for the critical aspects of **Then&There**, such as *Guideline 3.3 Input Assistance: Help users avoid and correct mistakes*. The criteria that has to be met is classified under the Four Principles of Accessibility:

1. Perceivable – Information and user interface components must be presentable to users in ways they can perceive.
2. Operable – User interface components and navigation must be operable.
3. Understandable – Information and the operation of user interface must be understandable.
4. Robust – Content must be robust enough that it can be interpreted reliably by a wide variety of user agents, including assistive technologies.

10 It can be consulted at http://www.w3.org/TR/WCAG20/.

The result of the last accessibility evaluation is as follows:

NA = not applicable

X = is met

Criterion met

Criterion not met of level A

Criterion not met of level AA

Criterion not met of level AAA

Success Criterion	Level	Is met
1 Perceivable		
1.1 Provide text alternatives for any non-text content so that it can be changed into other forms people need, such as large print, braille, speech, symbols or simpler language		
1.1.1 Non-text Content	A	X
1.2 Provide alternatives for time-based media		
1.2.1 Audio-only and Video-only (Prerecorded)	A	NA
1.2.2 Captions (Prerecorded)	A	NA
1.2.3 Audio Description or Media Alternative (Prerecorded)	A	NA
1.2.4 Captions (Live)	AA	NA
1.2.5 Audio Description (Prerecorded)	AA	NA
1.2.6 Sign Language (Prerecorded)	AAA	NA
1.2.7 Extended Audio Description (Prerecorded)	AAA	NA
1.2.8 Media Alternative (Prerecorded)	AAA	NA
1.2.9 Audio-only (Live)	AAA	NA
1.3 Create content that can be presented in different ways (for example simpler layout) without losing information or structure		
1.3.1 Info and Relationships	A	X
1.3.2 Meaningful Sequence	A	X
1.3.3 Sensory Characteristics	A	X
1.4 Make it easier for users to see and hear content including separating foreground from background		
1.4.1 Use of Colour	A	X
1.4.2 Audio Control	A	NA
1.4.3 Contrast (Minimum)	AA	X
1.4.4 Resize text	AA	X
1.4.5 Images of Text	AA	X
1.4.6 Contrast (Enhanced)	AAA	X
1.4.7 Low or No Background Audio	AAA	X

1.4.8 Visual Presentation	AAA	Width is more than 80 characters in book cards
1.4.9 Images of Text (No Exception)	AAA	X
2 Operable		
2.1 Make all functionality available from a keyboard		
2.1.1 Keyboard	A	Log in and other don't get focus
2.1.2 No Keyboard Trap	A	X
2.1.3 Keyboard (No Exception)	AAA	
2.2 Provide users enough time to read and use content		
2.2.1 Timing Adjustable	A	NA
2.2.2 Pause, Stop, Hide	A	NA
2.2.3 No Timing	AAA	X
2.2.4 Interruptions	AAA	NA
2.2.5 Re-authenticating	AAA	?
2.3 Do not design content in a way that is known to cause seizures		
2.3.1 Three Flashes or Below Threshold	A	X
2.3.2 Three Flashes or Below Threshold	AAA	X
2.4 Provide ways to help users navigate, find content, and determine where they are		
2.4.1 Bypass Blocks	A	X
2.4.2 Page Titled	A	X
2.4.3 Focus Order	A	X
2.4.4 Link Purpose (In Context)	A	X
2.4.5 Multiple Ways	AA	X
2.4.6 Headings and Labels	AA	X
2.4.7 Focus Visible	AA	X
2.4.8 Location	AAA	X
2.4.9 Link Purpose (Link Only)	AAA	X
2.4.10 Section Headings	AAA	X
3 Understandable		
3.1 Make text content readable and understandable		
3.1.1 Language of Page	A	X
3.1.2 Language of Parts	AA	X
3.1.3 Unusual Words	AAA	X
3.1.4 Abbreviations	AAA	X
3.1.5 Reading Level	AAA	X
3.1.6 Pronunciation	AAA	X
3.2 Make Web pages appear and operate in predictable ways		
3.2.1 On Focus	A	X
3.2.2 On Input	A	X

3.2.3 Consistent Navigation	AA	X
3.2.4 Consistent Navigation	AA	X
3.2.5 Change on Request	AAA	X
3.3 Help users avoid and correct mistakes		
3.3.1 Error Identification	A	X
3.3.2 Labels or Instructions	A	X
3.3.3 Error Suggestion	AA	
3.3.4 Error Prevention (Legal, Financial, Data)	AA	NA
3.3.5 Help	AAA	
3.3.6 Error Prevention (All)	AAA	
4 Robust		
4.1 Maximize compatibility with current and future user agents, including assistive technologies		
4.1.1 Parsing	A	X
4.1.2 Name, Role, Value	A	X

Result analysis

Many issues found during the evaluations have been solved and the vast majority of criterion are met, but there are a few concerning problems that still require important work.

- **Make all functionality available from a keyboard:**

  That is an absolutely essential aspect to make a site accessible for non-mouse users and is consequently marked as level A, so the goal set regarding accessibility can not be considered achieved. Unfortunately, this issue has not been solved yet due to time limitations, but it is on the top of the list of tasks to do (Katherine, our persona, has a mouse that compensates hand trembling, but probably would benefit from being able to use her keyboard).

- **Help users avoid and correct mistakes:**

  As said before, this is a key aspect of the site usability, since its main function is search. The current search server does not allow queries that search parts of a word and some modules found that check spelling and suggest similar terms can not run on it, so it will be necessary to explore more complex systems of searching (so all users, and our persona Lizanne amongst them, are better assisted).

Tools

There have been used some tools to facilitate the task of testing accessibility:

- Accessibility Evaluation Toolbar (Firefox add-on)
- Juicy Studio Accessibility Toolbar (Firefox add-on)
- WebAIM Contrast Checker
- AChecker

11. Projections for the future

There are many improvements yet to be made, and also some ideas to amplify the functionality of the site.

Issues and improvements

Some of the more relevant things to do next are:

- Fix accessibility issues (keyboard access, help prevent mistakes)
- Improve layout and visual design (in multiple devices)
- Create a front-end style guide
- Add more ways to explore content (most popular, last books, etc.)
- Add help (with Frequent Asked Questions (FAQ)) / Make the site self-explanatory
- Sort search results by user's rating
- Add digital version available to search results filters
- Explore other theme options
- Work in a nice solution for marker clusters
- Make it possible to share private lists of books
- Improve site map
- Turn the site cleaner (markup) and faster
- Implement a comments with rating system
- Create custom 403 and 404 pages
- More testing

Features

Some functionalities to explore adding to enhance the application possibilities:

- Make the site multilingual
- Allow users to create content (stories)
- Assign an animal to each way to collaborate/role (create icons, etc.)
- Capture (with mobile device camera) landmarks as an input to search books

12. Market analysis

As part of the design centred in users, it is relevant to be aware of their habits and thoughts. In order to achieve that, it has been done a poll. Besides information about their user profile some questions about the interest they could have in using **Then&There** have been made with the following results:

- 15.84% (16 out of 101) said they would use the place where the action takes places as a filter in an online catalogue of books.
- 27.72% (28 out of 101) said they would use when the action is places as a filter in an online catalogue of books.
- 44% (44 out of 100) said they would probably use an online catalogue where you can search books by where the action is developed.

Once the results are filtered to gather the answers of a more targeted audience (people who answered they read 4 or more novels per year and sometimes post a comment about a product or service on a website) percentages increases a bit:

- 18.57% (13 out of 70) said they would use the place where the action takes places as a filter in an online catalogue of books.
- 30% (21 out of 70) said they would use when the action is places as a filter in an online catalogue of books.
- 46.38% (32 out of 69) said they would probably use an online catalogue where you can search books by where the action is developed.

This data show that when the action takes places is an appealing filter for almost one out of three people, and as a result it has obtained more prominence than first planned.

13. Conclusions

Designing and developing a full project has been a very interesting experience with much learning involved: there has been a lot of fun, but also moments of frustration. Both have revealed as a very valuable source of all kinds of knowledge (technical, of management...). Some main thoughts gathered about the work process:

- When facing predicaments, it is important to accept the situation and make quick (even if hard because it may imply renouncing to previous time or effort investments) decisions.
- Level of zoom in tasks is key: it is as easy as useless to spend more time than necessary in secondary aspects or means to an end.
- It is worth to not rely on first deliveries being drafts, every comma (or lack of) should be able to stay where it is at any point.
- Spacing hours of work in time too much is dangerous and a productivity drainer.

As for the results, there are some expectations that were painfully not met in time, such as a good level of accessibility or sharing the process and its deliverables in a systematic and open in the Internet way. The goals of the application have mostly, nonetheless, been achieved, even though some can not be considered as there are no real users yet.

That said, it is incredibly rewarding to verify that I have been able to transform an idea thought quite a long time ago, when I would not have known where to start, into a real, navigable website, just by putting into practise what I have learned during the degree, the most important thing of which is probably how to learn. That makes me realise that if I am so aware of everything I do not know, it is just because I already know some things.

Annex I: Personas

Creating personas is a useful technique in user-centred design.

About creating personas

In order to create personas it is useful to think about these user characteristics:

- Age
- Job responsibilities
- Software
- Hardware
- Environment (home, office, etc.)
- Computer experience
- Web experience
- If disabled: assistive technologies experience, devices available...

The more specific personas are, the better. Personas have:

- Proper name
- Picture
- Specific characteristics, demographic and experience levels from a user profile
- Personal details such as behaviours, attitudes, motivations and goals

Accessibility considerations:

- Description of the limiting condition
- Adaptive strategies for using the product (special tools or assistive technology used,

experience and skills with them, frequency of use of them)

Also, a note about variability among users. Example note:

“Remember that people are diverse. Be careful not to assume that all users, including users with disabilities, use your product the same way. People use different interaction techniques, different adaptive strategies, and different assistive technology configurations. People have different experiences, different expectations, and different preferences. This persona is just one example of a user in this user group.”

Personas

Four personas have been created for this project.

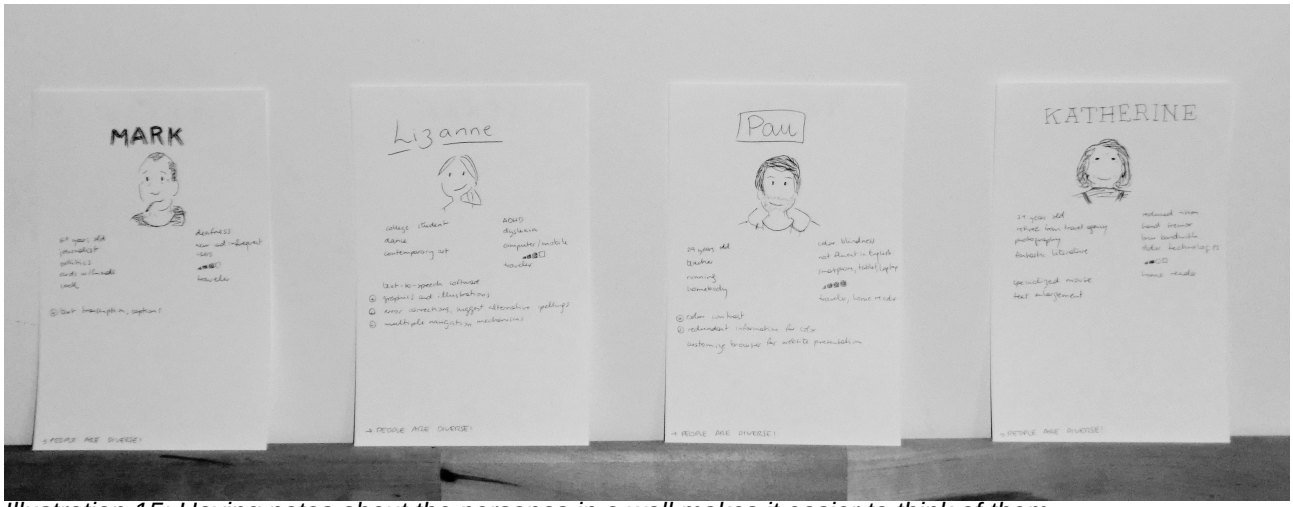


Illustration 15: Having notes about the personas in a wall makes it easier to think of them

Lizanne, college student with attention deficit hyperactivity disorder (ADHD) and dyslexia

Illustration 16: Photo by Chris Zerbes

Lizanne is a college student at A&M University in Texas, where she follows the program to become a professional dancer. She loves specially modern dance, and is actually interested in many forms of modern and contemporary art. She spend last summer backpacking in Europe and was astonished by many theatres and museums, like Centre Georges Pompidou in Paris.

She has attention deficit hyperactivity disorder (ADHD) with dyslexia, and the combination leads to substantial difficulty reading. She uses the Web both from her computer at home and her mobile phone with several purposes, such as staying up to date with the latest trends in modern dance or communicating with her friends. Lizanne experimented with text-to-speech software that highlighted the text on the screen and read it aloud at the same time, and found that she was able to read much more easily when she could hear certain sections of it read to her, instead of struggling over every word.

When she goes onto the Web, she finds that some websites are much easier for her to use than others. Some of the web pages have a lot of graphics and illustrations that, as long as they are not animated, help her focus in quickly on sections she wants to read. On top of that, websites that provide error corrections and suggest alternative spellings assist her significantly. Also websites that provide multiple navigation mechanisms such as a navigation bar, a search box, a site map, or bread-crumb trails, are easier for her to use.

User groups: mobile phone user, traveller

Disabilities: ADHD (cognitive), dyslexia (cognitive)

Remember that people are diverse. Be careful not to assume that all users, including users with disabilities, use your product the same way. People use different interaction techniques, different adaptive strategies, and different assistive technology configurations. People have different experiences, different expectations, and different preferences. This persona is just one example of a user in this user group.

Katherine, retiree with low vision and hand tremor

Illustration 17: Photo by Pedro Ribeiro

Katherine is 71 years old and retired 6 years ago, after working 35 years in a travel agency. Katherine loves photography, and everyday she spends some time either taking pictures or sorting photos she took either when she used to travel a lot or more recently. She also likes looking for other people's pictures and she prefers to do so at libraries and bookshops, because she prefers paper as a support and also her low bandwidth doesn't allow her to search at the speed she would like to. Also, Katherine is a keen reader, and she enjoys specially stories with fantastic elements on them.

She uses computer at home, one that got from her daughter Caroline when Caroline needed a more advanced one. She started using the Web several years ago to stay in touch with family and friends, and since she got a digital camera maintains a blog where she uploads an average of two photos per week. She also reads selected news websites that she has bookmarked.

Katherine has reduced vision and hand tremor. She has difficulty reading small text and clicking on small links or form elements. Her daughter gave her a specialized mouse that compensates hand trembling and showed her how to enlarge the text on websites using

the web browser settings. Her web browser has a zoom function that enlarges the entire page and a text enlarging setting that only increases the text size, which she prefers. It is frustrating to Katherine that on some sites the text size is still small—it does not get larger with her browser settings. She had tried to use screen magnification software, but finds it difficult to get oriented to a new site because she can't see the entire screen at one time.

User groups: with low bandwidth or using older technologies, home reader

Disabilities: low vision (visual), hand tremor (physical)

Remember that people are diverse. Be careful not to assume that all users, including users with disabilities, use your product the same way. People use different interaction techniques, different adaptive strategies, and different assistive technology configurations. People have different experiences, different expectations, and different preferences. This persona is just one example of a user in this user group.

Mark, journalist with deafness

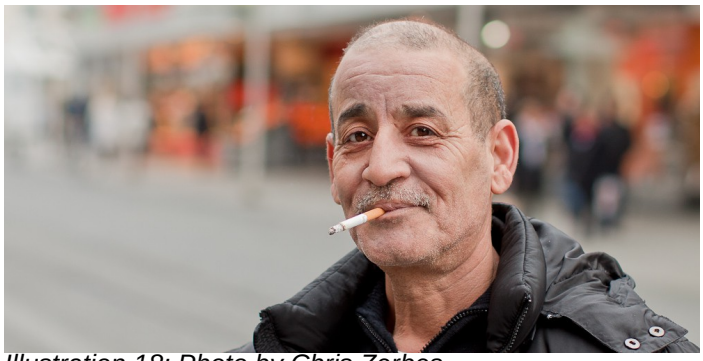


Illustration 18: Photo by Chris Zerbes

Mark, 61, has worked as a journalist all his life. He likes his job and is passionate about sharing deep analysis about politics. He is in charge of the politics section of a local journal and collaborates sporadically with other media.

Mark really enjoys the time of the week where he meets some old friends at a coffee shop and play cards. A part from that, he is an excellent cook and likes to be in control of the whole process, so lately he has started to grow some vegetables at his own yard with great results.

He lost the capability of hearing when he was 6 years old and dominates lip-reading and the sign language. His deafness had not been an issue when surfing the net, which he does intensively to be informed and to search new recipes, but more recently online media has incorporated audiovisual pieces of information that more often than not do not have a text transcription or captions, which would help him enormously to speed up and complete his understanding.

User groups: new and infrequent users, traveller

Disabilities: deafness (auditory)

Remember that people are diverse. Be careful not to assume that all users, including users with disabilities, use your product the same way. People use different interaction techniques, different adaptive strategies, and different assistive technology configurations. People have different experiences, different expectations, and different preferences. This persona is just one example of a user in this user group.

Pau, teacher with colour blindness

Illustration 19: Photo by Chris Zerbes

Pau is a 29 years old teacher from Barcelona who has recently moved to Berlin, where he is teaching Catalan and Spanish. He is quite fluent in German but not as much in English, so he is trying to address that through reading and speaking to the not German people he meets.

He is quite homebody, but lately has found out for his surprise that he really enjoys

running, and it has become one of his favourite moments of the day. He has several devices from which he uses the Web: he usually carries along his smartphone and his tablet, for he has a long commute to work and the bigger screen of the tablet makes tasks easier. He spends a lot of time online: he buys music albums, clothes, groceries.... He also uses online services to increase productivity and is an active user of many social networks.

Pau has one of the most common visual disabilities for men: colour blindness, which in his case means an inability to distinguish between green and red. Many websites use this colours to convey information like discounted items and required fields of a form, so he avoids them in favour to websites that use sufficient colour contrast and redundant information for colour.

After additional experimentation, Pau discovered settings in his web browser that allowed him to define customized colour combinations for text, links, and the background. He also discovered settings for high colour contrast combinations in his web browser that he can switch on when he encounters a website that is difficult to read. However, this approach does not work for all websites, such as those that are not coded to allow readers to override the default presentation of the website.

User groups: not fluent in English, traveller, home reader

Disabilities: colour blindness (visual)

Remember that people are diverse. Be careful not to assume that all users, including users with disabilities, use your product the same way. People use different interaction techniques, different adaptive strategies, and different assistive technology configurations. People have different experiences, different expectations, and different preferences. This persona is just one example of a user in this user group.

Annex II: Accessibility

Considerations about accessibility

When reading and thinking about the subject it is quite immediate to gather some reasons why considering accessibility is a good idea:

- It is the right thing to do
- Benefits all users
- Makes sense even just considering money (use increase, SEO)
- Probably a legal requirement soon
- Having restrictions and guidelines is actually helpful

Also, one of the first things to learn is that there are several kinds of disabilities, often combined, and within each one there is a wide range that differences each individual (that may or may not consider itself disabled). Main kinds:

- Auditory
- Cognitive
- Neurological
- Physical
- Speech
- Visual

These are some targeted groups that benefit from accessibility:

- Older people
- Low literacy or not fluent in the language

- With low bandwidth or using older technologies
- New and infrequent users
- Mobile phone users

Trying to add the people who falls in any of these categories and defend that is not a really significant percentage of anyone's (potential) target turns out to be really difficult.

Success criteria from WCAG 2.0

Success criteria from WCAG 2.0 is classified under the Four Principles of Accessibility: perceivable, operable, understandable, robust.

1 Perceivable

Text alternatives

Guideline 1.1 Provide text alternatives for any non-text content so that it can be changed into other forms people need, such as large print, braille, speech, symbols or simpler language.

Success Criterion 1.1.1: Non-text Content

All non-text content that is presented to the user has a text alternative that serves the equivalent purpose, except for the situations listed below. (Level A)

- *Controls, input*: it has a name that describes its purpose.
- *Time-based Media, Test and Sensory*: text alternatives at least provide descriptive identification of the non-text content.
- *CAPTCHA*: text alternatives that identify and describe the purpose of the non-text content are provided, and alternative forms of CAPTCHA using output modes for different types of sensory perception are provided to accommodate different disabilities.
- *Decoration, Formatting, Invisible*: it is implemented in a way that it can be ignored

by assistive technology.

Time-based Media

Guideline 1.2 Provide alternatives for time-based media.

Success Criterion 1.2.1: Audio-only and Video-only (prerecorded)

For prerecorded audio-only and prerecorded video-only media, the following are true, except when the audio or video is a media alternative for text and is clearly labeled as such: (Level A)

- *Prerecorded Audio-only*: An alternative for time-based media is provided that presents equivalent information for prerecorded audio-only content.
- *Prerecorded Video-only*: Either an alternative for time-based media or an audio track is provided that presents equivalent information for prerecorded video-only content.

Success Criterion 1.2.2: Captions (Prerecorded)

Captions are provided for all prerecorded audio content in synchronized media, except when the media is a media alternative for text and is clearly labeled as such. (Level A)

Success Criterion 1.2.3: Audio Description or Media Alternative (Prerecorded)

An alternative for time-based media or audio description of the prerecorded video content is provided for synchronized media, except when the media is a media alternative for text and is clearly labeled as such. (Level A)

Success Criterion 1.2.4: Captions (Live)

Captions are provided for all live audio content in synchronized media. (Level AA)

Success Criterion 1.2.5: Audio Description (Prerecorded)

Audio description is provided for all prerecorded video content in synchronized media. (Level AA)

Success Criterion 1.2.6: Sign Language (Prerecorded)

Sign language interpretation is provided for all prerecorded audio content in synchronized media. (Level AAA)

Success Criterion 1.2.7: Extended Audio Description (Prerecorded)

Where pauses in foreground audio are insufficient to allow audio descriptions to convey the sense of the video, extended audio description is provided for all prerecorded video content in synchronized media. (Level AAA)

Success Criterion 1.2.8: Media Alternative (Prerecorded)

An alternative for time-based media is provided for all prerecorded synchronized media and for all prerecorded video-only media. (Level AAA)

Success Criterion 1.2.9: Audio-only (Live)

An alternative for time-based media that presents equivalent information for live audio-only content is provided. (Level AAA)

Adaptable

Guideline 1.3 Create content that can be presented in different ways (for example simpler layout) without losing information or structure.

Success Criterion 1.3.1: Info and Relationships

Information, structure, and relationships conveyed through presentation can be programmatically determined or are available in text. (Level A)

Success Criterion 1.3.2: Meaningful Sequence

When the sequence in which content is presented affects its meaning, a correct reading sequence can be programmatically determined. (Level A)

Success Criterion 1.3.3: Sensory Characteristics

Instructions provided for understanding and operating content do not rely solely on sensory characteristics of components such as shape, size, visual location, orientation, or sound. (Level A)

Distinguishable

Guideline 1.4 Make it easier for users to see and hear content including separating foreground from background.

Success Criterion 1.4.1: Use of Colour

Colour is not used as the only visual means of conveying information, indicating an action,

prompting a response, or distinguishing a visual element. (Level A)

Success Criterion 1.4.2: Audio Control

If any audio on a Web page plays automatically for more than 3 seconds, either a mechanism is available to pause or stop the audio, or a mechanism is available to control audio volume independently from the overall system volume level. (Level A)

Success Criterion 1.4.3: Contrast (Minimum)

The visual presentation of text and images of text has a contrast ratio of at least 4.5:1, except for the following: (Level AA)

- *Large Text*: Large-scale text and images of large-scale text have a contrast ratio of at least 3:1.
- *Incidental*: Text or images of text that are part of an inactive user interface component, that are pure decoration, that are not visible to anyone, or that are part of a picture that contains significant other visual content, have no contrast requirement.
- *Logotypes*: Text that is part of a logo or brand name has no minimum contrast requirement.

Success Criterion 1.4.4: Resize text

Except for captions and images of text, text can be resized without assistive technology up to 200 percent without loss of content or functionality. (Level AA)

Success Criterion 1.4.5: Images of Text

If the technologies being used can achieve the visual presentation, text is used to convey information rather than images of text except for the following: (Level AA)

- *Customizable*: The image of text can be visually customized to the user's requirements.
- *Essential*: A particular presentation of text is essential to the information being conveyed.

Success Criterion 1.4.6: Contrast (Enhanced)

The visual presentation of text and images of text has a contrast ratio of at least 7:1, except for the following: (Level AAA)

- *Large Text*: Large-scale text and images of large-scale text have a contrast ratio of

at least 4.5:1.

- *Incidental*: Text or images of text that are part of an inactive user interface component, that are pure decoration, that are not visible to anyone, or that are part of a picture that contains significant other visual content, have no contrast requirement.
- *Logotypes*: Text that is part of a logo or brand name has no minimum contrast requirement.

Success Criterion 1.4.7: Low or No Background Audio

For prerecorded audio-only content that (1) contains primarily speech in the foreground, (2) is not an audio CAPTCHA or audio logo, and (3) is not vocalization intended to be primarily musical expression such as singing or rapping, at least one of the following is true: (Level AAA)

- *No Background*: The audio does not contain background sounds.
- *Turn Off*: The background sounds can be turned off.
- *20 dB*: The background sounds are at least 20 decibels lower than the foreground speech content, with the exception of occasional sounds that last for only one or two seconds.

Success Criterion 1.4.8: Visual Presentation

For the visual presentation of blocks of text, a mechanism is available to achieve the following: (Level AAA)

1. Foreground and background colors can be selected by the user.
2. Width is no more than 80 characters or glyphs (40 if CJK).
3. Text is not justified (aligned to both the left and the right margins).
4. Line spacing (leading) is at least space-and-a-half within paragraphs, and paragraph spacing is at least 1.5 times larger than the line spacing.
5. Text can be resized without assistive technology up to 200 percent in a way that does not require the user to scroll horizontally to read a line of text on a full-screen window.

Success Criterion 1.4.9: Images of Text (No Exception)

Images of text are only used for pure decoration or where a particular presentation of text

is essential to the information being conveyed. (Level AAA)

2 Operable

Keyboard Accessible

Guideline 2.1 Make all functionality available from a keyboard.
Success Criterion 2.1.1: Keyboard
All functionality of the content is operable through a keyboard interface without requiring specific timings for individual keystrokes, except where the underlying function requires input that depends on the path of the user's movement and not just the endpoints. (Level A)
Success Criterion 2.1.2: No Keyboard Trap
If keyboard focus can be moved to a component of the page using a keyboard interface, then focus can be moved away from that component using only a keyboard interface, and, if it requires more than unmodified arrow or tab keys or other standard exit methods, the user is advised of the method for moving focus away. (Level A)
Success Criterion 2.1.3: Keyboard (No Exception)
All functionality of the content is operable through a keyboard interface without requiring specific timings for individual keystrokes. (Level AAA)

Enough Time

Guideline 2.2 Provide users enough time to read and use content.
Success Criterion 2.2.1: Timing Adjustable
For each time limit that is set by the content, at least one of the following is true: (Level A)

- *Turn off*: The user is allowed to turn off the time limit before encountering it.
- *Adjust*: The user is allowed to adjust the time limit before encountering it over a wide range that is at least ten times the length of the default setting.
- *Extend*: The user is warned before time expires and given at least 20 seconds to extend the time limit with a simple action (for example, "press the space bar"), and the user is allowed to extend the time limit at least ten times.
- *Real-time Exception*: The time limit is a required part of a real-time event (for example, an auction), and no alternative to the time limit is possible.
- *Essential Exception*: The time limit is essential and extending it would invalidate the activity.
- *20 Hour Exception*: The time limit is longer than 20 hours.

Success Criterion 2.2.2: Pause, Stop, Hide

For moving, blinking, scrolling, or auto-updating information, all of the following are true: (Level A)

- *Moving, blinking, scrolling*: For any moving, blinking or scrolling information that (1) starts automatically, (2) lasts more than five seconds, and (3) is presented in parallel with other content, there is a mechanism for the user to pause, stop, or hide it unless the movement, blinking, or scrolling is part of an activity where it is essential; and
- *Auto-updating*: For any auto-updating information that (1) starts automatically and (2) is presented in parallel with other content, there is a mechanism for the user to pause, stop, or hide it or to control the frequency of the update unless the auto-updating is part of an activity where it is essential.

Success Criterion 2.2.3: No Timing

Timing is not an essential part of the event or activity presented by the content, except for non-interactive synchronized media and real-time events. (Level AAA)

Success Criterion 2.2.4: Interruptions

Interruptions can be postponed or suppressed by the user, except interruptions involving an emergency. (Level AAA)

Success Criterion 2.2.5: Re-authenticating

When an authenticated session expires, the user can continue the activity without loss of data after re-authenticating. (Level AAA)

Seizures

Guideline 2.3 Do not design content in a way that is known to cause seizures.

Success Criterion 2.3.1: Three Flashes or Below Threshold

Web pages do not contain anything that flashes more than three times in any one second period, or the flash is below the general flash and red flash thresholds. (Level A)

Success Criterion 2.3.2: Three Flashes

Web pages do not contain anything that flashes more than three times in any one second period. (Level AAA)

Navigable

Guideline 2.4 Provide ways to help users navigate, find content, and determine where they are.

Success Criterion 2.4.1: Bypass Blocks

A mechanism is available to bypass blocks of content that are repeated on multiple Web pages. (Level A)

Success Criterion 2.4.2: Page Titled

Web pages have titles that describe topic or purpose. (Level A)

Success Criterion 2.4.3: Focus Order

If a Web page can be navigated sequentially and the navigation sequences affect meaning or operation, focusable components receive focus in an order that preserves meaning and operability. (Level A)

Success Criterion 2.4.4: Link Purpose (In Context)

The purpose of each link can be determined from the link text alone or from the link text together with its programmatically determined link context, except where the purpose of the link would be ambiguous to users in general. (Level A)

Success Criterion 2.4.5: Multiple Ways

More than one way is available to locate a Web page within a set of Web pages except where the Web Page is the result of, or a step in, a process. (Level AA)

Success Criterion 2.4.6: Headings and Labels

Headings and labels describe topic or purpose. (Level AA)

Success Criterion 2.4.7: Focus Visible

Any keyboard operable user interface has a mode of operation where the keyboard focus indicator is visible. (Level AA)

Success Criterion 2.4.8: Location

Information about the user's location within a set of Web pages is available. (Level AAA)

Success Criterion 2.4.9: Link Purpose (Link Only)

A mechanism is available to allow the purpose of each link to be identified from link text alone, except where the purpose of the link would be ambiguous to users in general. (Level AAA)

Success Criterion 2.4.10: Section Headings

Section headings are used to organize the content. (Level AAA)

3 Understandable

Readable

Guideline 3.1 Make text content readable and understandable.

Success Criterion 3.1.1: Language of Page

The default human language of each Web page can be programmatically determined. (Level A)

Success Criterion 3.2.1: Language of Parts

The human language of each passage or phrase in the content can be programmatically determined except for proper names, technical terms, words of indeterminate language, and words or phrases that have become part of the vernacular of the immediately surrounding text. (Level AA)

Success Criterion 3.1.3: Unusual Words

A mechanism is available for identifying specific definitions of words or phrases used in an unusual or restricted way, including idioms and jargon. (Level AAA)

Success Criterion 3.1.4: Abbreviations

A mechanism for identifying the expanded form or meaning of abbreviations is available. (Level AAA)

Success Criterion 3.1.5: Reading Level

When text requires reading ability more advanced than the lower secondary education level after removal of proper names and titles, supplemental content, or a version that does not require reading ability more advanced than the lower secondary education level, is available. (Level AAA)

Success Criterion 3.1.6: Pronunciation

A mechanism is available for identifying specific pronunciation of words where meaning of the words, in context, is ambiguous without knowing the pronunciation. (Level AAA)

Predictable

Guideline 3.2 Make Web pages appear and operate in predictable ways.

Success Criterion 3.2.1: On Focus

When any component receives focus, it does not initiate a change of context. (Level A)

Success Criterion 3.2.2: On Input

Changing the setting of any user interface component does not automatically cause a change of context unless the user has been advised of the behavior before using the component. (Level A)

Success Criterion 3.2.3: Consistent Navigation

Navigational mechanisms that are repeated on multiple Web pages within a set of Web pages occur in the same relative order each time they are repeated, unless a change is initiated by the user. (Level AA)

Success Criterion 3.2.4: Consistent Identification

Components that have the same functionality within a set of Web pages are identified consistently. (Level AA)

Success Criterion 3.2.5: Change on Request

Changes of context are initiated only by user request or a mechanism is available to turn off such changes. (Level AAA)

Input Assistance

Guideline 3.3 Help users avoid and correct mistakes.
Success Criterion 3.3.1: Error Identification
If an input error is automatically detected, the item that is in error is identified and the error is described to the user in text. (Level A)
Success Criterion 3.3.2: Labels or Instructions
Labels or instructions are provided when content requires user input. (Level A)
Success Criterion 3.3.3: Error Suggestion
If an input error is automatically detected and suggestions for correction are known, then the suggestions are provided to the user, unless it would jeopardize the security or purpose of the content. (Level AA)
Success Criterion 3.3.4: Error Prevention (Legal, Financial, Data)
For Web pages that cause legal commitments or financial transactions for the user to occur, that modify or delete user-controllable data in data storage systems, or that submit user test responses, at least one of the following is true: (Level AA)

1. *Reversible*: Submissions are reversible.
2. *Checked*: Data entered by the user is checked for input errors and the user is provided an opportunity to correct them.
3. *Confirmed*: A mechanism is available for reviewing, confirming, and correcting information before finalizing the submission.

Success Criterion 3.3.5: Help
Context-sensitive help is available. (Level AAA)
Success Criterion 3.3.6: Error Prevention (All)
For Web pages that require the user to submit information, at least one of the following is true: (Level AAA)

1. *Reversible*: Submissions are reversible.
2. *Checked*: Data entered by the user is checked for input errors and the user is provided an opportunity to correct them.
3. *Confirmed*: A mechanism is available for reviewing, confirming, and correcting information before finalizing the submission.

4 Robust

Compatible

Guideline 4.1 Maximize compatibility with current and future user agents, including

assistive technologies.

Success Criterion 4.1.1: Parsing

In content implemented using markup languages, elements have complete start and end tags, elements are nested according to their specifications, elements do not contain duplicate attributes, and any IDs are unique, except where the specifications allow these features. (Level A)

Success Criterion 4.1.2: Name, Role, Value

For all user interface components (including but not limited to: form elements, links and components generated by scripts), the name and role can be programmatically determined; states, properties, and values that can be set by the user can be programmatically set; and notification of changes to these items is available to user agents, including assistive technologies. (Level A)

Summary table

A summary table will be used for the successive accessibility evaluations.

Success Criterion	Level	Is met
1 Perceivable		
1.1 Provide text alternatives for any non-text content so that it can be changed into other forms people need, such as large print, braille, speech, symbols or simpler language		
1.1.1 Non-text Content	A	
1.2 Provide alternatives for time-based media		
1.2.1 Audio-only and Video-only (Prerecorded)	A	
1.2.2 Captions (Prerecorded)	A	
1.2.3 Audio Description or Media Alternative (Prerecorded)	A	
1.2.4 Captions (Live)	AA	
1.2.5 Audio Description (Prerecorded)	AA	
1.2.6 Sign Language (Prerecorded)	AAA	
1.2.7 Extended Audio Description (Prerecorded)	AAA	
1.2.8 Media Alternative (Prerecorded)	AAA	
1.2.9 Audio-only (Live)	AAA	
1.3 Create content that can be presented in different ways (for example simpler layout) without losing information or structure		
1.3.1 Info and Relationships	A	
1.3.2 Meaningful Sequence	A	
1.3.3 Sensory Characteristics	A	

1.4 Make it easier for users to see and hear content including separating foreground from background		
1.4.1 Use of Color	A	
1.4.2 Audio Control	A	
1.4.3 Contrast (Minimum)	AA	
1.4.4 Resize text	AA	
1.4.5 Images of Text	AA	
1.4.6 Contrast (Enhanced)	AAA	
1.4.7 Low or No Background Audio	AAA	
1.4.8 Visual Presentation	AAA	
1.4.9 Images of Text (No Exception)	AAA	
2 Operable		
2.1 Make all functionality available from a keyboard		
2.1.1 Keyboard	A	
2.1.2 No Keyboard Trap	A	
2.1.3 Keyboard (No Exception)	AAA	
2.2 Provide users enough time to read and use content		
2.2.1 Timing Adjustable	A	
2.2.2 Pause, Stop, Hide	A	
2.2.3 No Timing	AAA	
2.2.4 Interruptions	AAA	
2.2.5 Re-authenticating	AAA	
2.3 Do not design content in a way that is known to cause seizures		
2.3.1 Three Flashes or Below Threshold	A	
2.3.2 Three Flashes or Below Threshold	AAA	
2.4 Provide ways to help users navigate, find content, and determine where they are		
2.4.1 Bypass Blocks	A	
2.4.2 Page Titled	A	
2.4.3 Focus Order	A	
2.4.4 Link Purpose (In Context)	A	
2.4.5 Multiple Ways	AA	
2.4.6 Headings and Labels	AA	
2.4.7 Focus Visible	AA	
2.4.8 Location	AAA	
2.4.9 Link Purpose (Link Only)	AAA	
2.4.10 Section Headings	AAA	
3 Understandable		
3.1 Make text content readable and understandable		
3.1.1 Language of Page	A	

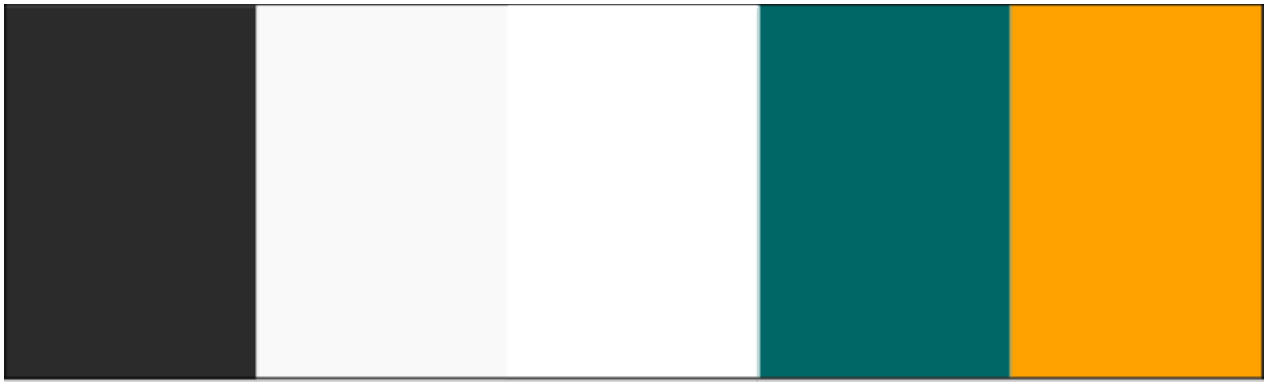
3.1.2 Language of Parts	AA	
3.1.3 Unusual Words	AAA	
3.1.4 Abbreviations	AAA	
3.1.5 Reading Level	AAA	
3.1.6 Pronunciation	AAA	
3.2 Make Web pages appear and operate in predictable ways		
3.2.1 On Focus	A	
3.2.2 On Input	A	
3.2.3 Consistent Navigation	AA	
3.2.4 Consistent Navigation	AA	
3.2.5 Change on Request	AAA	
3.3 Help users avoid and correct mistakes		
3.3.1 Error Identification	A	
3.3.2 Labels or Instructions	A	
3.3.3 Error Suggestion	AA	
3.3.4 Error Prevention (Legal, Financial, Data)	AA	
3.3.5 Help	AAA	
3.3.6 Error Prevention (All)	AAA	
4 Robust		
4.1 Maximize compatibility with current and future user agents, including assistive technologies		
4.1.1 Parsing	A	
4.1.2 Name, Role, Value	A	

Annex III: Identity manual

There are a lot of improvements to do in the visual design department, but for the moment these are the key elements that visually represent **Then&There**. Usability (legibility, colour contrast, colour blindness, etc.) and graphic design theory (complementary and analogue colours, pairing typographies, etc.) have been considered when choosing them.

Logo

Main colours



Dark grey: HTML #2B2B2B / RGB 43 43 43

Light grey: HTML #F9F9F9 / RGB 249 249 249

White: HTML #FFFFFF / RGB 255 255 255

Dark turquoise: HTML #006666 / RGB 0 102 102 – HTML #257B99 / RGB 37 123 153

Orange: HTML #FFA200 / RGB 255 162 0

Typographies

The name of the site, as well as the ampersand present in the logo, use the typography Grundschrift (normal). The default typography for the rest of the text is Arial, Helvetica, sans-serif.

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