

# Design and development report- Library in Kowary



**Napier University**

**Advanced Website Technology | Assessment 2**

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## Introduction

### Overview (assessment requirements)

#### Work space:

I was asked to design and developed prototype of web application using Python Flask run, which can be run in Levinux learning environment and stored in GitHub, when developing the app (parts of the code) and ready product.

#### Code requirements:

Code should represent appropriate:

- Routing and URL hierarchy
- Provide routes with right response of the html pages and its code and content.
- Organising directories and files (static files, templates)
- Using methods as requests, redirects, responses,
- using templates, sessions, logging
- using data storage and allowing multiple users

#### User experience:

Depending on the idea for the application developer must consider user interface design usability and accessibility, appropriate URL hierarchy and domain in matter of good user experience.

#### Submitting:

Web-app source code is stored must be stored in folder "src"; there should be as well report with design and development specification and "README.md" file with

## Development idea

### Web application idea

For the web application subject I have chosen the website for the library in small city I was born. It is recently struggle with decreasing number of users – especially young people. The idea is to make the library visible online for promoting new books and better contact with the library workers.

Innovating idea I had is to make a special account where chosen guest can login and create own book "trial" visible after, for other users, on the main page of library.

It is similar for the Youtube music playlist with this different the trial will be designed by special guest known in community and everyone who has a good idea for the subject. Showing some community leaders interested in reading have a chance to encourage more people to read same books and more important became more familiar with the library. Application includes also admin panel with features to correspond with emails and managing website content (CRUD). Admin is able to add new books available in library as well as approved the trials posted by guests (trials must be carefully checked for any errors or mistakes before final posting to the website).

### Data stored

All data editable for admin will be stored in the three database tables representing mailbox, books and trials. Information stored in the database is displayed using Sqlite3 installed in Python.

### Content Access

There are three different accesses to website content.

First access is for the regular user, who can enter the pages without login in.

Features included for this part are:

- Reading content about books and trials
- Contact form

Second access is for the guest, who can add their trials, which can be visible on the website. It is a simple tool with login, uploading image and information about the guest, his trial and books he recommend.

Features included for this part are:

- Login in
- Uploading image
- Adding information
- Contact form
- Preview (displaying added information)

Third access is for the admin, who can update content of the website with CRUD (create, read update and delete). It works for tables of mailbox, content for books and content for trials.

Features included for this part are:

- Login in
- CRUD for books
- Update and delete for trials
- Read and delete for messages
- Responding to emails

### Content

#### Website

Website will display the information about new books, trials including- both images and book description, staff engaging by images and personal contact by FB, LinkedIn and Twitter, standard contact form for any enquires.

### Databases storage

#### Mailbox

Standard information is stored when user sends the message: name, contact details and message.

#### Books

Books stored the title, author, image and description of the book.

#### Trials

Stored information about the guest as name, image and description as well as detailed information about each book (see books above).

## Brief

**Library situation** The city Kowary has 13.000 citizens, however only fourth part is signed to the library and only tenth part is really using the library service. The decreasing number of users is especially visible among young people. That is why library must be present in the internet and social media features which draws attention of the young age group potential users.

**Goals** Goal to developing the website is to engage user with the library. Website content must display the books, especially the newest positions we have and trials (described later). as Website should also to present our library team with their contacts on Tweeter, Facebook and LinkedIn which was especially set up by the library for that purpose. There must be also a contact form to contact us directly.

**Website/User side** Website must be responsive and can be displayed from different platforms and devices as well different types of internet connection. It should be at service for all users; however main group which we want to appeal are people using internet - young people or professionals, who does not have time to check new books in person. Design should be fresh with additional features as click-on buttons displaying more content and interactive elements.

**Trials/Guest side** Trials are the lists of books recommended by our special guests asked to create one. We need to display some information about the guests and the trial they want to add as well as detailed information about the books. In one trial will be not more than 5 books. Design for that part needs to be appropriate for our guest, often noble represents of our community, who not necessarily are familiar with the internet. Create the trial must be simple and easy to follow. Login is required for safety purpose. Because we will provide one account for all the guests another safety feature is to store the IP address of each guest when adding trial.

**Admin panel/ Management site** Last element is the admin panel which will be used by our team. The team are mostly young people familiar with the internet; however using panel must be easy and quick.

Staff must be able to add information about new books, approve the trials and read and respond the emails. . Login is required.

## User requirements

### Hardware/Software required for Delivery & User Interaction

Platforms	Desktop, laptop, smartphone, tablet
Browsers	Google Chrome 44, Firefox 44.0.1, Internet Explorer
Operating Systems	Windows 7, Android 4, iOS 8
Internet Connection	Broadband, Wi-Fi,
Screen Resolution	1920x1080, 1366x768, 360x640
Access	Home, Library, Work
Possible Plugins	Adobe Flash

Library website will be access by the user from any stationary devices as desktop and laptop (screen resolution 1920x1080) as well as the mobile devices: smartphones (360x640) and tablets (1366x768).

After the selected devices website will be able to access from each operating system naming the basics - Windows, Android and iOS 8.

Requirement for access any internet website is the browser, which will be optional for the user as for example Google Chrome, Firefox, Opera or Internet Explorer, which four of them the website will be tested.

Website will be optimised for different strength of internet connections as broadband, which can be access from home or work and Wi-Fi can be used to connect from library and other places providing the connection to internet.



## Design

### Technical Objectives

#### Website (regular user)

Should:

- Include information about books
- Include information about trials
- Include contact with staff
- Include contact form

#### Guest Panel

Should:

- Include login
- Have features to upload image
- Have features to create trial
- Include contact form

#### Admin Panel

Should:

- Include login
- Have features to upload image
- Have features for CRUD (adding books, approval trials)
- Have features for mailbox (reading and answering email)

## Design objectives

### Website (regular user)

Should:

- Be Responsive
- Engaging young people and professionals (fresh design)
- Have interactive features

### Guest Panel

Should:

- Be Responsive
- Easy to follow
- Suitable for people not familiar with internet

### Admin Panel

Should:

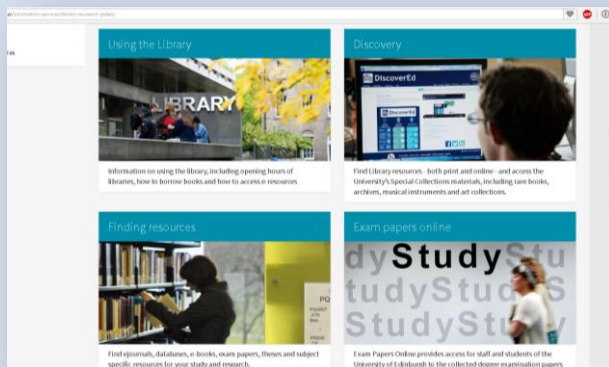
- Be Responsive
- Be easy and quick with using admin features

## Inspirations

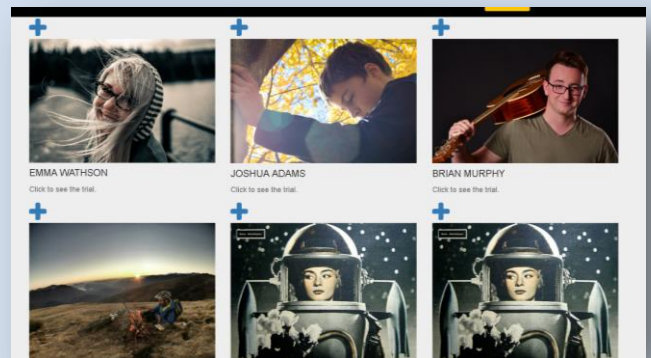
### Links displayed as images (website)

It looks much more engaging and interesting to display links as images. I have used it in the trials part of the website to introduce better the library guest for the user. The example of this kind of design I have found in Edinburgh University Library page<sup>1</sup>

#### Inspiration



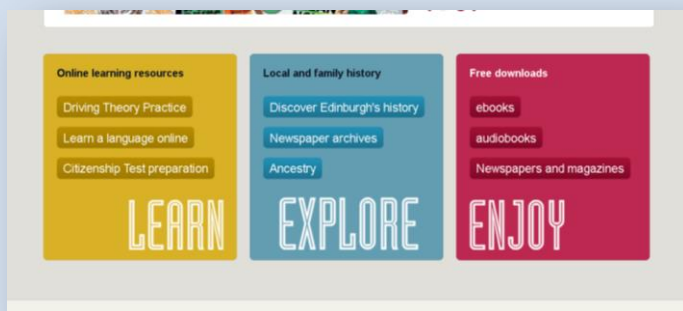
#### Performance



### Quick links (admin panel)

Admin Panel requirement was to be used quickly. I implement some quick links on the main page which I took inspiration from Edinburgh Council Library.<sup>2</sup>

#### Inspiration



#### Performance



<sup>1</sup> <http://www.ed.ac.uk/information-services/library-museum-gallery>

<sup>2</sup> <http://yourlibrary.edinburgh.gov.uk>

### Header background image (Website)

To make appearance space, especially presenting the library, I have used the background image in the header. It is common use in the "new-styled" websites and looks modern and fresh. It is example of many similar websites where this tool was used.<sup>3</sup>

#### Inspiration



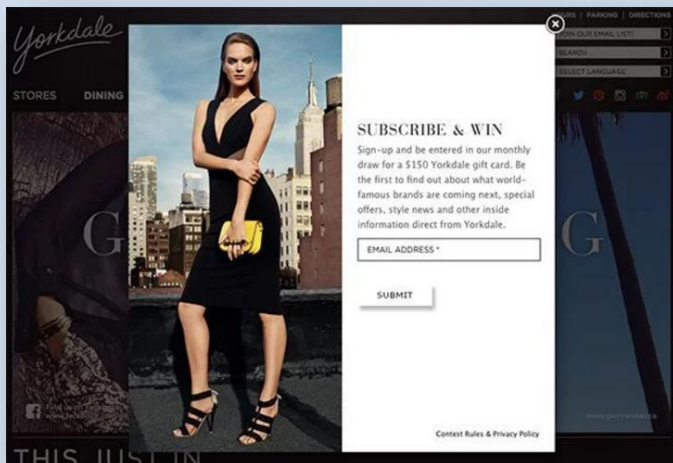
#### Performance



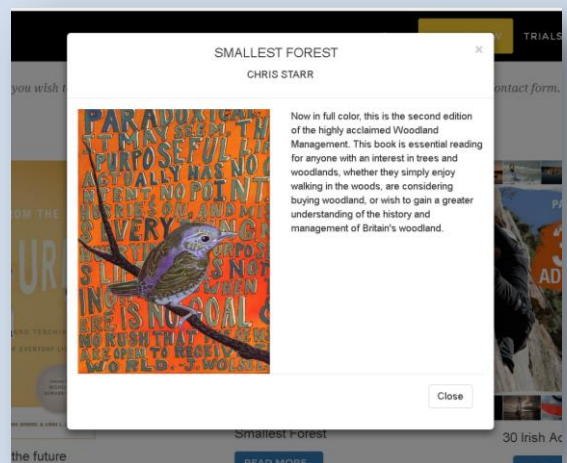
### Modal to interaction(website)

Displaying more information in modal save space and make website more readable. I have used this method for book details. Similar solution I have found in fashion website.<sup>4</sup>

#### Inspiration



#### Performance



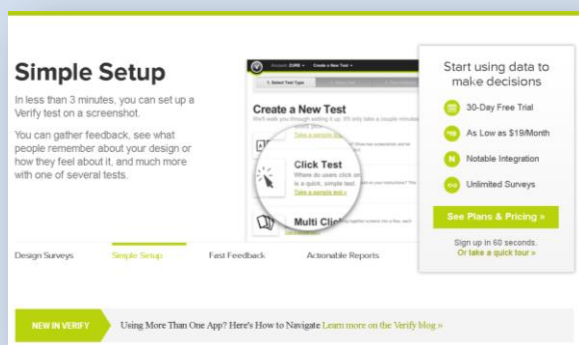
<sup>3</sup> <https://inspirationhut.net>

<sup>4</sup> <http://www.yorkdale.com>

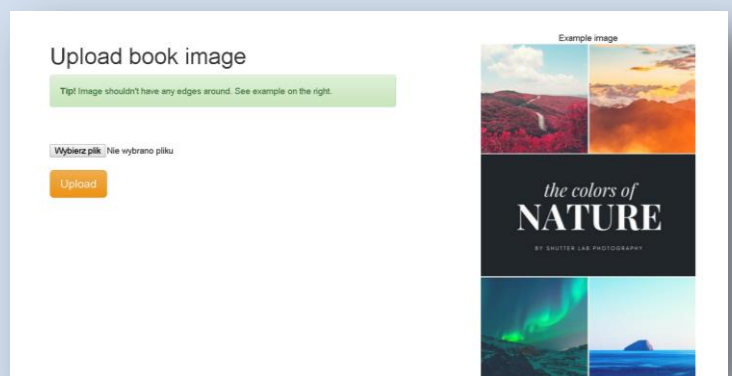
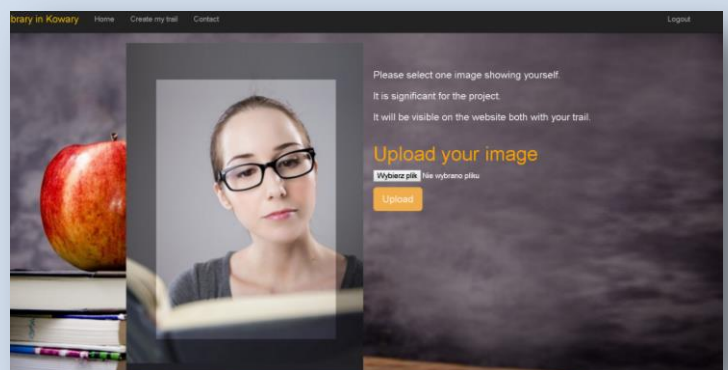
## Image for feedback (guest panel)

This type of image I have used twice: for uploading link for guest and admin. It is worth to show what kind of data should be uploading. It is much quicker to understand and follow. Inspiration I have found in step by step set up page.<sup>5</sup>

### Inspiration



### Performance

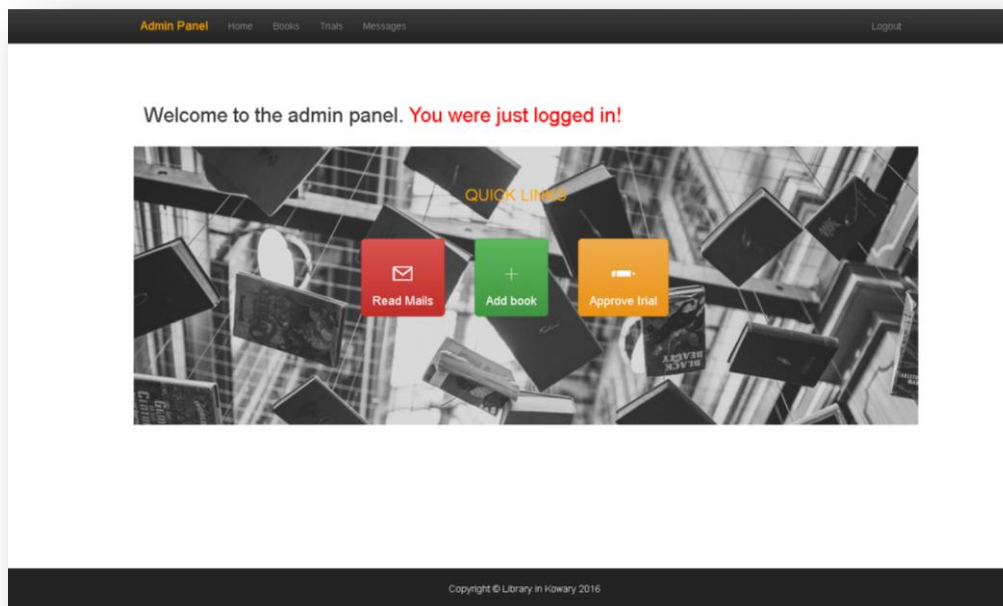
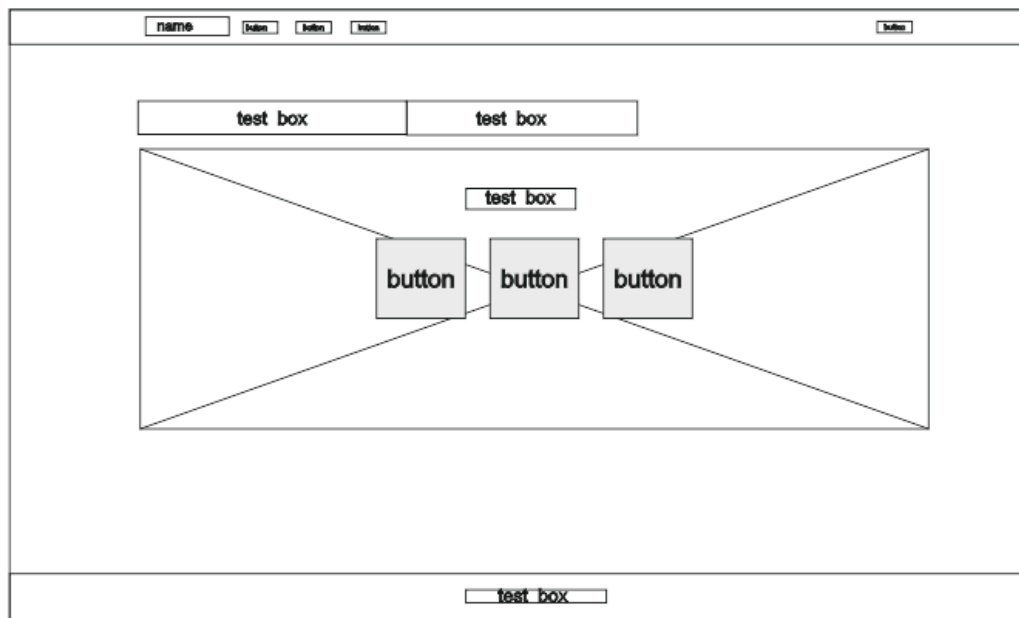


<sup>5</sup> <http://verifyapp.com>

## Storyboards

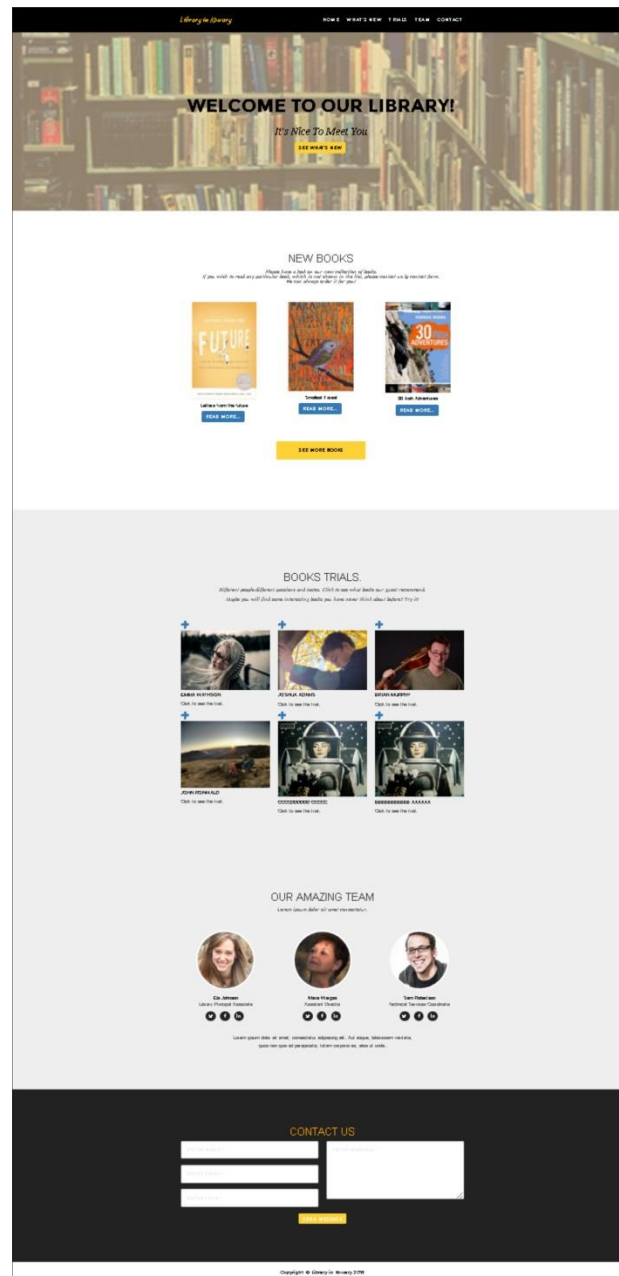
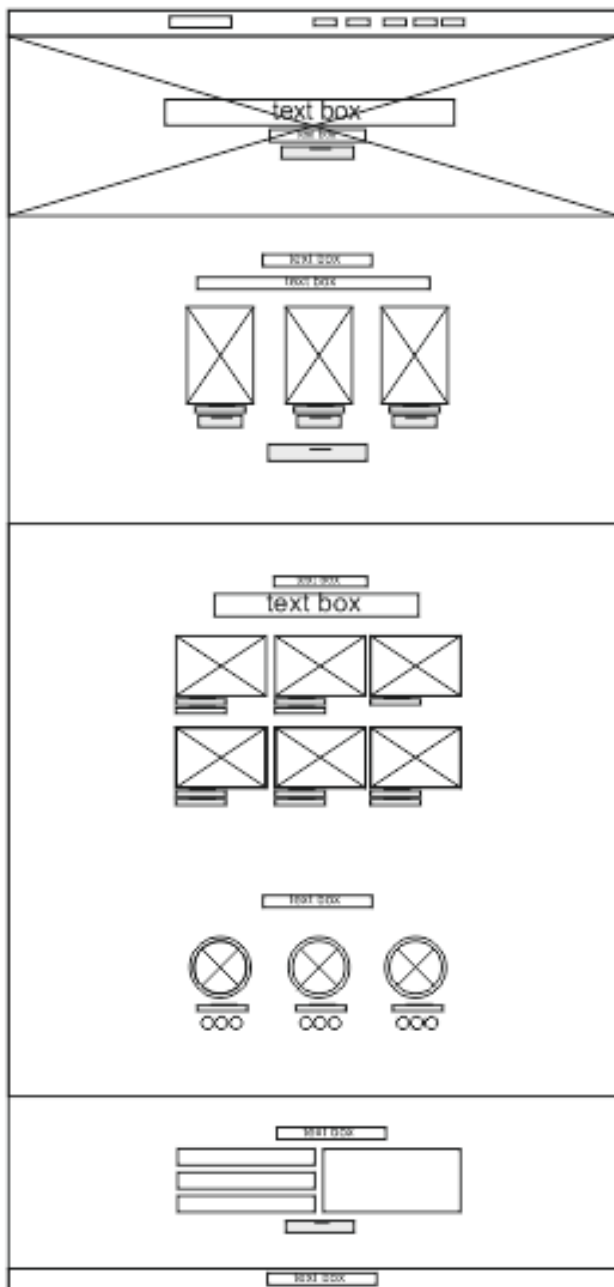
### Admin Panel (admin.html)

#### Home page



## Website (index.html)

### Home page

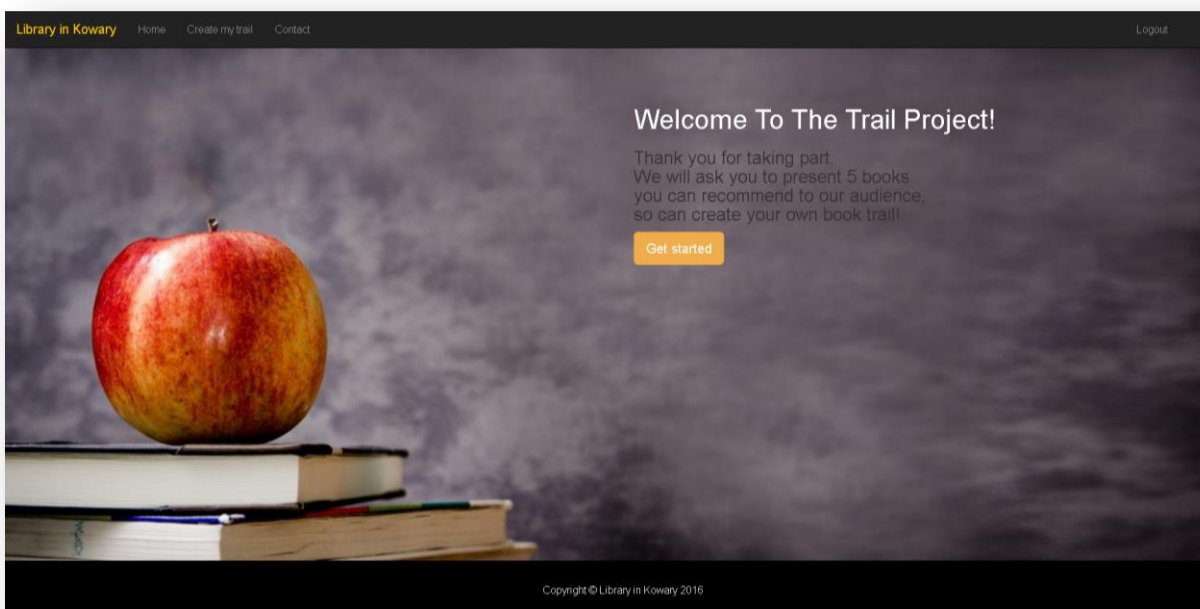
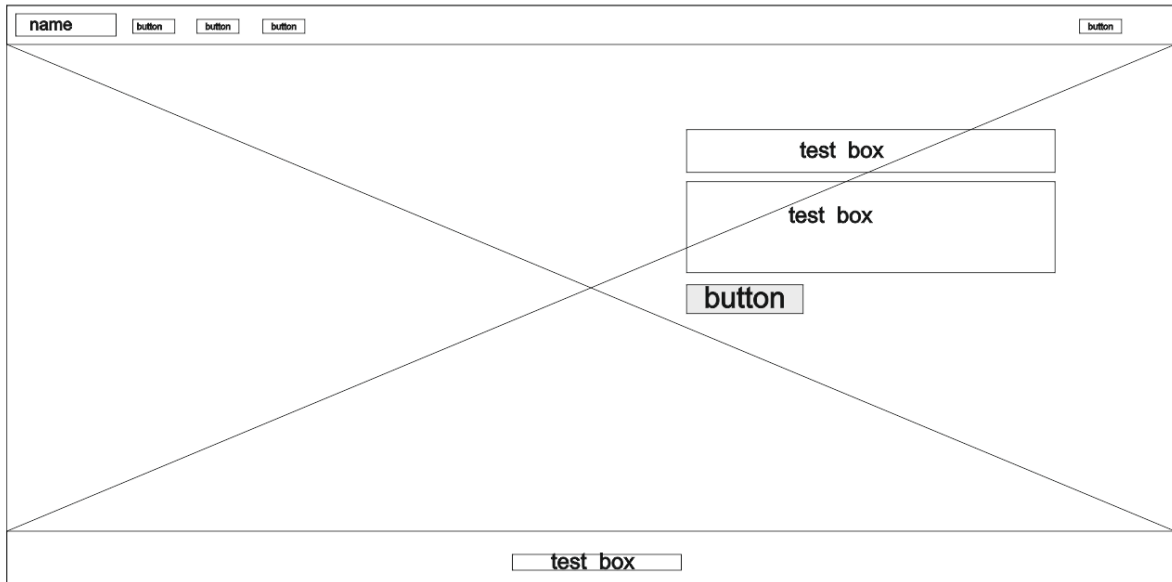




## Guest Panel (guest.html)

### Home page

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## Guest Panel (guest\_contact.html)

### Contact page

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A wireframe diagram of a web page layout. The page is enclosed in a rectangular border. At the top, there is a horizontal bar containing five small rectangular boxes, each labeled "test box". In the center of the page, there is a large rectangular container labeled "test box". Inside this container, on the left side, are four horizontal input fields stacked vertically. To the right of these fields is a larger rectangular area, also labeled "test box". At the bottom of the page, there is a horizontal bar containing a single rectangular box labeled "test box".

A screenshot of a web application interface. The background is a dark, textured image with a stack of books and a red apple in the foreground. A semi-transparent white modal window is centered on the screen, titled "Contact Us". Inside the modal, there are three input fields on the left, each with a label and a placeholder: "Name" (placeholder: "Enter Name"), "Email" (placeholder: "Enter Email"), and "Message Title" (placeholder: "Enter Message Title"). To the right of these fields is a larger text area with a placeholder "Enter Message". At the bottom of the modal, there is a wide orange button labeled "Send Message". The top of the page shows a navigation bar with the text "Library in Kowary" and links for "Home", "Create my trail", "Contact", and "Logout".

## Design elements

### Website

#### *Color scheme*



Because of use many images in the layout neutral colour has been chosen for building the background.

For the background are used colors:

- Black (menu and footer background)
- Grey and white (part of the websites – sections)

As a functional elements as buttons, links and headings – which purpose is to drug attention and stand out from the other parts in layout has been chosen complementary colours:

- Orange (most of action elements as submit buttons, buttons opening new websites, scrolling down)
- Blue(Some of the buttons)

## Fonts

### Roboto Slab

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For main body text has been chosen good readable front **Roboto Slab**. Main text needs to be read quickly and be easy to see on the screen.

### Montserrat

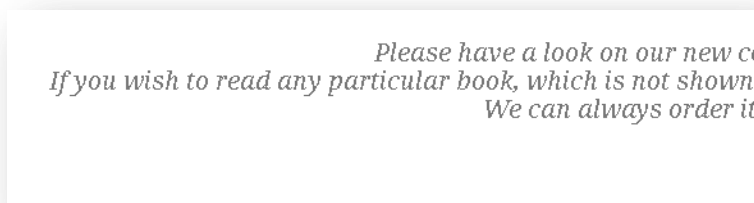
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All headlines (h1- h6) as well as buttons are designed with font Montserrat, which uses capital letters and is good readable and drugging user attention.

### Droid Serif

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Text after the headlines is more decorative and gives a nice touch for design in website. It's name is Droid Serif.

## Background images

Background images gives nice look and create visual appearance of space for the Library website, however it is not easy to use them because of bad readable text.

For that reason there was some filters placed on top of the images.

First one is white- bright- it itroduse the website for the user in the home page.



Second one is has a black filter. It is still same image but makes eyes focused on the image of guest and white text.



### Panels (Guest, Admin)

#### Color scheme



For admin panel- similar as in website has been chosen neutral color of white.

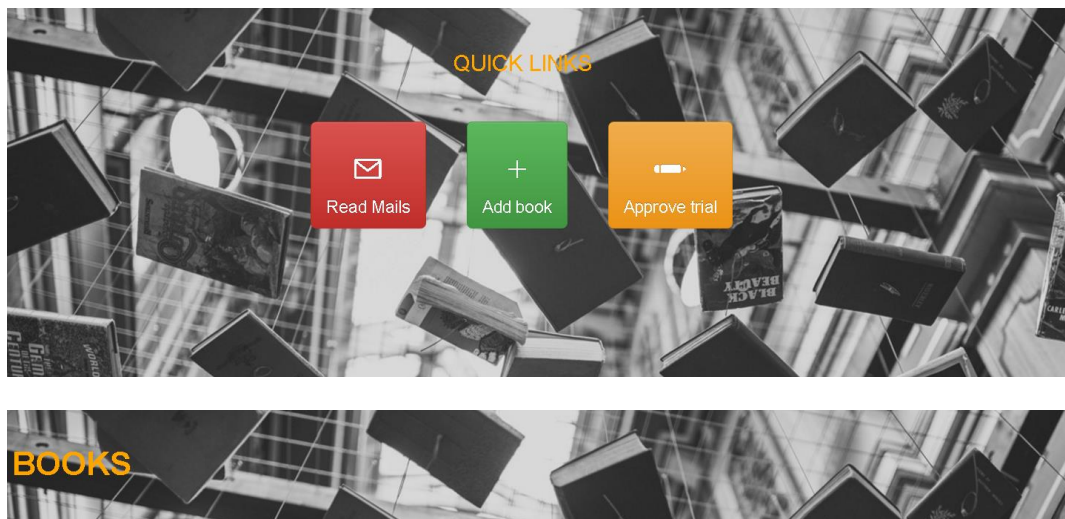
Black color is building scheme for the menu and footer, while red, orange and green determines actions and information:

- Orange reminds the action buttons as submit
- Red stands for delete as a warning (danger) color
- Green was used for edit links and adding new elements

#### Background images

To make admin panel more attractive I have chosen an image to display as background for headlines.

Both with orange color for headlines are nice presented and the font is still readable.



## Evaluation

### Assessment requirements

Website fulfils the assessment requirements and adds more advanced features.

The library web application was build using Python Flask which runs using Levinux frame work and pushing files to the GitHub repository.

Routing and URL hierarchy is presented by three different accounts for users with additional pages include to the accounts.

Routes are followed by the responses of particular html pages including some unique values and codes depend on the page.

Files organised in directories: templates for the html files and static for css, js, image files.

Inside static are sub-directories splitting files according to its type as img, css, js or uploads. For developing the project has been used sessions and logins. Multiple users as admin and guests can access their specific account using different login data and pages to enter.

Data are stored in three tables - stands for mailbox, books and trials details.

Interface design has been made according to brief to meet expectation of the target audience and created good user experience.

Additional features are:

- CRUD for admin panel, where data for website can be organised by admin.
- Uploading image which is used by guests and admin for adding content into the database tables.
- Getting and sorting IP address of the guest, when adding the trial.





## Brief

The application meets the requirements of the brief by creating three different types of access: the page for regular user, admin and the guest panels. Two last – as required in the brief- has an access with different logins, and guest IP address is stored both with information about trial.

Web application has been built using Bootstrap library code, which makes it responsive to display properly in different devices.

## Website

### Technical objectives

Website has included the information about books, trials, staff contact and contact form which meets the brief specification. It has also validation and feedback for the form displays when message is sent.

To keep the website accessible from the different internet connections and render quick – detailed information about trials is visible on another page, accessed by clicking the image link. Same method was used to show more books available while the main page contains only three newest books added to the database.

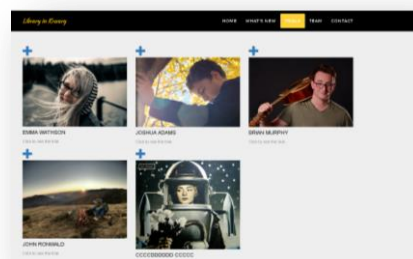
### Design

To attract the target audience by the design in the layout was made using many images of books and guests as well as background images. Interactive features for the website are scrolling and modals to display information when click on it. The color scheme of orange brings energy to the layout.

### Modal example



### Multiple images



## Guest Panel

### *Technical objectives*

Guest panel includes all required features as login, which can be access from different address than the website; upload image which is part of the path to create new trial, creating trial form with feedback and preview and contact form for any enquires.

### *Design*

Guest panel is easy to access and fallow, which was mentioned in the brief as being suitable for users not familiar with internet. There is as simple login taking guest to the three steps process to add the trial. Given feedback when submitting the form as well as names for the fields should help fill it up correctly.



## Admin Panel

### Technical objectives

The panel includes can be access by login from different URL address than website and guest panel.

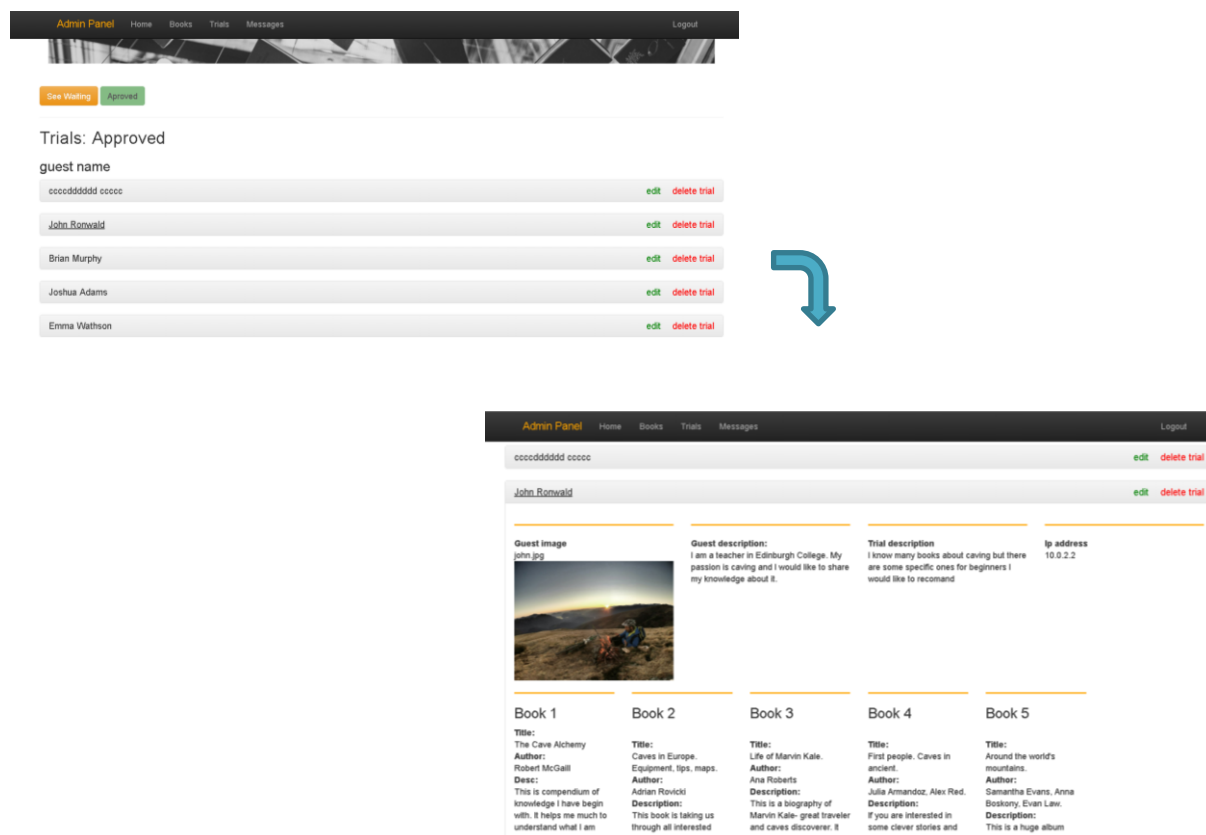
It has form for adding new books including upload image, and can process CRUD for the content of the page as books and trials.

It has separate page for the emails which display its sources (main website or guest panel). Emails can be respond or delete.

### Design

Main requirement for the brief about admin panel was to be easy and quick to use. In the home page are some quick links to the most common features for the panel.

Details of the trials, message and books are hidden to not distract by its content and can be access by clicking the drop don modal, as shown below:



## Improvements

The website for the library it is good to start with and showing the library in the internet both with the newest books they have.

Good idea is to provide these trials for chosen guest; however in the features it might have some improvements:

### Social media:

First of all the trials should be more social media added- not only for the staff contact but the library overall. It would be a good profit to be able to share trials for example in the Facebook page, both with link to the website and perhaps own library FB account.

### User account:

In the future website should include the user account, especially for the young users who can add their photos, comment the books and maybe see availability of the chosen book they want to take home.

### Blog:

Library is a social place, so it might consider having the blog about new events they do. Blog could be updated from the admin panel by the staff and it would help positioning the website in the internet.

### More content:

There is some more content needed for the website- for example telephone number, map and address. The library brief considers only the contact form. It can be easily improve in the feature.

## Personal evaluation

With this project I have learned more advanced features in python. I used Python in the previous project, however now I could add more options for the admin panel as CRUD managing the database content. I could add the second account for the guest using the database table. I have learned how to pass single variable from python to the website and how to look through to database to display needed information.

During development I have some problems with errors displayed in python. I have learned that problems might be caused by the spaces and I have learned to read carefully the error messages displayed by python with DEBUG and look for the answers in the resources as internet – especially Stack overflow website.

For the new features as CRUD I have looked in the tutorials in YouTube, however great help and explanations I have found on Python Flask website provides all the names needed to perform actions in Python.

I did not feel comfortable with the regular files look in Linux, so I have found the solution of using WinSCP to see the folders and files, use Notepad ++ to edit the code and DB browser for Sqlite to see content of the database tables.

Vim as a tool is very good to detect the spaces, however I did not see the numbers of lines and when I had an error in 129 line I prefer to edit it in Notepad which shows the line number and is more easy to use and safe.

There are still many things I need to work on and improve. The one which I found crucial for the design of codes is to separate them in different files to quicker track the code.

For development I would like to learn more about the security in the websites as taking the password from the database and hashed it as it is in common use.

Finally I would like to learn how to properly publish my web application on to the server and what kind of potential errors must be avoided.

## Resources

### Images and content

#### Images

Allost all images were taken from the free source of <https://www.pexels.com/> which allows free commerce use of the photos.

The only images and content from another source are books image and content, which for the practise(learning) purpose was taken from the Amazon website: <https://www.amazon.co.uk>

#### Code

##### *Bootstrap*

Application html pages are based on the Bootstrap. Css and js files are also a part of the Bootsrtap code library. <http://getbootstrap.com/>

##### *Template*

Template for main website pages (index.html, view.html)

<https://www.bootstrapzero.com/bootstrap-template/agency-one-page-bootstrap-theme>

##### *Cookie policy pop up modal*

<https://silktime.com/tools/cookie-consent/docs/license/>

##### *Uploading image*

Tutorial: [https://www.youtube.com/watch?v=bxFaa\\_FNdL4](https://www.youtube.com/watch?v=bxFaa_FNdL4)

##### *CRUD*

Passing variables for CRUD in admin panel and insert (guest panel, contact form):

<http://flask.pocoo.org/docs/0.11/Getting IP address>

<http://code.runnable.com/UiHGXKT6HB5OAAD9/how-to-get-the-ip-address-of-the-user-for-python-and-flask>