

Web Engineering

Spring Term 2015

Exercise 3

You are quite happy with your progress on the WordPress theme so far. Now, what you would really like to have is support for the management and the display of portfolio entries, as well as adding support for editing the content very quickly and more customisation options for the theme.

Note: The goal of the third series of exercises is to experiment with WordPress as one example of a general platform that could be exploited for systematic web development. In a two-step exercise, you will examine the WordPress model and extend it to suit your needs.

Exercise 3.1 *Implementing data management and contact support into a WordPress theme*

Please refer to the description provided last week for the detail of the first part of Exercise 3.

Exercise 3.2 *Advanced theme functionality and customisability*

The second part of Exercise 3 comprises the following steps:

Portfolio management

You quickly find out you can manage single portfolio entries as a post type, since they can be quite extendible, in terms of the data and the interface to manage it. You also find out that WordPress supports thumbnails for individual posts, and decide to take advantage of that. The Portfolio custom post type should contain a name, a thumbnail picture, a website URL where the project can be seen live, a description and a year of publishing. All of these details should not be listed in the Portfolio page, but rather be visible when one clicks on a single portfolio entry in the Portfolio page. However, the Portfolio page should still show the set of information that was intended from the mockup (thumbnail, name, year) for each entry. Finally, the footer should display the newest portfolio entry, replacing the corresponding part into the mockup with a working implementation.

Connections between blog posts and portfolio entries

You would like to write blog posts about the most interesting projects you do, and sometimes tell a bit of story behind them. Therefore you need somehow to relate blog posts to portfolio entries. The users should be able to navigate from a blog post to the related portfolio entries, and vice-versa. However, you read from the documentation that you cannot easily relate post types; this can be an issue, since you plan to relate blog posts to portfolio entries. After all, you want to describe and narrate a bit of the story for some of the most interesting projects. Therefore you find a handy plug-in called Post 2 Posts¹ capable of providing a relationships API for WordPress posts. You plan to implement this relationship through this plug-in.

In-place editing for blog posts

You also notice you would prefer to quickly edit blog posts from the live, public page sometimes (e.g. when you have to perform small edits or you find some small mistakes) rather than going through the dashboard again and start editing. However, only the administrators should be able to do so. Therefore, you plan to create an in-place editor for blog posts, which allows you to change the title or the text of the post directly from the live, public page. Your in-place editor needs to have a way to enter into edit-mode, and enable for basic customisation options for the text (i.e. allowing to making it bold, italic or underlined)². Moreover, it should also allow to specify a new WordPress

¹<https://wordpress.org/plugins/posts-to-posts/>

²<https://developer.mozilla.org/en-US/docs/Web/API/Document/execCommand>

post thumbnail that, after the modifications are complete and sent to the server, will be set as featured image for the post being edited. Please note that you need to make sure you upload your thumbnails in such a way that they are also presented in the media library. Then, you need to submit your modifications and those should update the post in the database. Finally, you want the page to refresh to show the new updated post. You think you can use JavaScript with HTML forms for that or, if you want, more advanced techniques³.

Make the theme customisable

You would like to exploit the functionality offered by WordPress allowing for custom colours (adding colour pickers for the background, headlines and article text as part of the theme settings), as well as supporting header image customisation for the index page (choosing a different image as well as cropping it) through WordPress custom headers. You also want your users to be able to specify the address details for the footer and the contact page dynamically through the theme customisations.

Workmode and Grading. All exercises in the Web Engineering course are designed for teams of 3 students. Every member has to contribute to the team solution, and the assistants may ask about the role of each member and who contributed what.

This is the final part of Exercise 3. **The final team solution for Exercise 3 will need to be presented during the exercise session on 16.04.2015 from 12:15 to 14:00. If you have any (real) problem to show your solution on the 16th, please send me an email before the 12th. From all the teams that have requested to be assessed on Friday we will randomly pick 5 groups. These teams will show their solution in our lab (CNB E 108.2) from 15:15pm.** You do not need to hand in the source code, but the assistants may ask questions about how you implemented some of the features when you demo it in the exercise session. **We will use the following grading scheme.**

Grading Scheme For each part of the graded exercises, we specify the amount of points your team can achieve and a set of requirements. These requirements represent the minimal set of goals you need to accomplish to get full points. If you fulfil the requirements only partially or fail to answer corresponding questions during the presentation, points will be deducted. No or wrong solutions get zero points.

The maximum number of points may differ between parts and thus reflect their respective weights. For Exercise 3, the set of requirements are specified as follows:

Set of Requirements - Part 1 (Max. points: 3)

- Conversion of the blog page to support post excerpts in multiple pages and page to display single posts. Please note that posts can be written and modified from the dashboard.
- Implement a dynamic index page which loads its content from the database. The content of the index page should be modifiable from the dashboard.
- Implement dynamic retrieval of content in the footer for the columns *About me* and *My last post*
- Handle messages sent through the Contact page. You need to send an email to deliver the message, and it needs to be delivered to the email address belonging to the administrator of the website. Please note that the email can be dynamically set from the settings in the dashboard. You can develop this through forms, but you are not forbidden to use more advanced techniques to implement this.

Set of Requirements - Part 2 (Max. points: 4)

- Custom Post Type for portfolio entries, queried in the Portfolio page. This step should be based on the second approach presented in the lecture (i.e. building the custom post type into the theme rather than using a plug-in). Portfolio entries should also be manageable and showed in the ways described earlier in the description.

³https://codex.wordpress.org/AJAX_in_Plugins

- Implement relationships between Blog posts and Portfolio entries in a way that authors can write blog posts about specific projects and allowing automatically a bidirectional navigability between portfolio entries and posts (it should be possible to reach related blog entries from individual portfolio entries and vice-versa).
- In-place editor for blog posts as specified earlier in the description.
- Extension of the WordPress theme customisation page for setting customised contact information, colours and custom header images based on WordPress Settings API
- **Important:** For the presentation of your solution in the exercise session, please prepare a customised version of the website that demonstrates the functionality and customisability of your theme, e.g. by setting up a custom theme for a different designer with different content. Your custom version should include customisations of the theme (title, colours, header etc.) as well as different content (posts, portfolio entries, contact information).

Please note that you are **not allowed** to use any plug-ins except for the ones mentioned in the exercise description, for this part of this exercise. Moreover, for the JavaScript parts, the same restrictions of Exercise 2 apply (i.e. you need to develop your solutions based on JavaScript/jQuery and you are not allowed to use other libraries).