



Summer Fellowship Report

On

DRUPAL (Web Development)

Submitted by

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Acknowledgement

This report has been prepared for the internship that has been done in the National Virtual Library of India (NVLI), Janpath Office (National Mission on Libraries Janpath Bhawan), Delhi in order to study the practical aspects of Drupal and its implementation in the real field with the purpose of learning and exploring in the mentioned field and for professional development.

The aim of this internship is to be familiar with the implication of Drupal and uses of concerned theoretical knowledge and clarifying the career goals so, I have successfully completed the internship and compiled this report as the summary.

I would like to express my sincere gratitude to my project head Prof. Pradeep Varma who has given me this valuable opportunity to work in such a learning environment to get industrial-based experience. I am also grateful to the enthusiastic team of NVLI project especially the Technical team. The Technical team comprising of three great mentors Mr Pratish Jha, Mr Manish Kala and Miss. Sonpriya Rawat their constant supervision and support was truly helpful in completing my tasks and my internship.

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1. Drupal

Introduction to Drupal

Drupal is a free and **open-source content management** framework written in PHP and distributed under the General Public License(GNU). Drupal provides a back-end framework for at least 2.3% of all websites worldwide ranging from personal blogs to corporate, political, and government sites.

The standard release of Drupal, known as Drupal core, contains basic features common to content-management systems. These include user account registration and maintenance, menu management, RSS feeds, taxonomy, page layout customization, and system administration. The Drupal core installation can serve as a simple website, an Internet forum, or a community website providing for user-generated content.

Although Drupal offers a sophisticated API for developers, basic Website installation and administration of the framework requires no programming skills because of which the user with minimal knowledge of coding can build a website with Drupal. Drupal runs on any computing platform that supports both a web server capable of running PHP and a database to store content and configuration.

Drupal is a content management software. It's used to make many of the websites and applications you use every day. But what sets it apart is its flexibility; modularity is one of its core principles.

Its tools help you build the versatile, structured content that dynamic web experiences need. For any special functionality, one needs in his website can be attained by modules provided by Drupal.



Drupal makes it easy for the user to build a website. Drupal is one of the CMS because:

1. Drupal comes with the option of choosing from the variety of modules and third-party integrates that can be used for developing a website adhering to your preference.
2. Drupal comes with clean markup code out of the box that makes it easy for developers to manage content publishing.
3. The competency of Drupal lies in its versatility. Since it is open-source, any web developer can work on it and provide the user with numerous choices.



2. About NVLI

National Virtual Library of India or (NVLI)

NVLI is an initiative by the Ministry of Culture, a platform that hosts data of cultural relevance from various repositories and institutions all over India.

Research, academics and also general users from various sectors are today depending more on digital information. Corresponding to this demand an increasing amount of digitized data and services based on such data are being initiated. Digital Information today serves as an important knowledge asset.

While the expansion of digital data and information services heralds a new and exciting era, it also presents many issues and challenges. The common user is often clueless about the existence of resources that are useful. The problem is akin to having a large collection of printed materials in the form of books and journals but only when it is organized and services are provided, it is called a 'library'. In fact, the immense amount of information is digitized under several projects carried out by various Agencies and Govt. Departments like MOC, State Govts, etc.

Most of them are available on the web but are dispersed. There is no comprehensive database built for all such resources. The true potential can only be exploited for use by the masses when it is usefully organized and presented in user-friendly services including multilingual services.

Digital era has also brought in 'digital divide' and has marked the society into digital haves and have-nots. It is no longer a matter of choice but rather a compulsion to find ways and means of bridging the gap between the two sections. The virtual library will go a long way in filling up the gap.



The target users of NVL will be students, researchers, doctors, professionals, and novice users, including educationally, socially, economically, physically disadvantaged groups. They can be built incorporating many modules to cater to information needs.

The objective of the National Virtual Library of India (NVLI) is to facilitate the creation of a comprehensive database on digital resources of India on information about India in an open access environment.



3. Modules

The basic functionality needed to develop a website is provided by Drupal in its core itself. The user just needs to enable it from the extension. The core modules make it easy to add content, publish them and create pages. The module gives the user full control over how they want their website's functionality.

A module is a set of PHP, JavaScript, and/or CSS files that extends site features and adds functionality. All the additional functions user need in his site are provided by Drupal in the form of modules. Modules are the elements which provide Drupal with its flexibility and make it one of the best CMS out there.

The user can turn the features and functionality on by installing the module and can turn it off by uninstalling the module but before uninstalling, the user may need to remove data and configuration related to the feature or functionality. Each module that is installed adds to the time needed to generate pages on your site, so it is a good idea to uninstall modules that are not needed.

Hence to improve the features and functioning of the NVLI project here are some of the contributed modules we worked on for resolving the issues.



4. Task 1 : Filter on Search results

The task is to add different types of filters with different field types in a view or on the search result page.

4.1 Introduction

Filters are used in a website for an easy approach to the content that is relative to what a user is looking for. Filters allow us to get the most relatable content of our choice more frequently.

The Filter core module allows you to configure text formats for processing text input for your site.

Despite the name "filter," the module not only lets you prevent the use of formatting you don't want, but also lets you control and enhance the formatting that appears. When users create or edit content, they can choose between the text formats administrators make available to their user role.

Administrators can configure which formats are available to which user roles, choose a default text format, and create new text formats. This module also allows you to configure the associated text editor. You can configure each text format to use your choice of filters. When you specify more than one format for a filter, you can specify the order in which they are processed.

4.2 View

To get a working facet on a view, fields should be created with indexed fields. All the facets on a view work only on indexed fields.



We can also have a filter inside a view without using the facet module. Just use filter inside the view, add fields inside that filter.

4.3 Modules required:

Filters work after the indexing of the content of the website for that, modules are:

- [SearchAPI](#)

Along with search API module two modules Database Search, Default Database search comes by default, enable them too. These modules are required for the indexing of content.

- [Facets](#)

This module provides different types of filters with multiple widgets.

After installing and enabling these modules, do indexing using search API. Then add facets of a particular type and choose a widget.

A block will be created automatically, just place that block at a particular location.

4.4 Facet Module Overview

The Facet module allows site builders to easily create and manage faceted search interfaces. In addition to the UI components that come out of the box, themes and module developers can build their own widgets that can



optionally be contributed back to Drupal.org. Facets work with Drupal Core Search and Search API, meaning that code and configuration can be reused as-is with the most popular search solutions available to Drupal.

4.5 Basic Settings

For working of filter indexing is compulsory, for indexing follow these steps:

- After installing and enabling search API, go to search and metadata under configuration.
- Do indexing of content there.
- Now, we will be able to have exact search results.

4.6 Setting up a facet

For creating a facet, follow these steps:

- Go to search and metadata under configuration.
- Click on facets then add facet.
- Choose the facet source.

Note: While choosing the facet source be careful whether you want facet for homepage or a view.

- Now, choose a field and proceed.
- Write the name and choose widget carefully.



4.7 Field Types for filters:

Facet module provides a range of widgets but there is a slight difference between data type acceptance in facet and preinstalled filter in view.

- When we have a facet search in a view if the field type is full-text then it will split a single word into multiple words.
So, to overcome this we set the field type of field as a string.
- But when we are using a pre-installed filter in a view then the field type should be full-text as it does not accept the string.

NOTE: To use a single field in both searches.

To achieve this we need to have a duplicate of a single field. at the time of indexing. Click on fields and add a single field two times both having different types.

4.8 Type of Widgets

There is a variety of widget :

- **List of checkboxes**

Here, we are allowed to choose more than one option while searching. To see all the results at the same time, just uncheck the exclude option while creating a facet.



- **List of links**

Here, we have links of particular field's content.

- **Dropdown**

Here, we get the option in the dropdown, after choosing this just enable the “only one content can be displayed option”.



5. Task 2 : Range filter

To create a filter with range on a view or on the search page.

5.1 Introduction

Filters are used in a website for an easy approach to the content that is relative to what a user is looking for. Filters allow us to get the most relatable content of our choice more frequently.

The Filter core module allows you to configure text formats for processing text input for your site.

Despite the name "filter," the module not only lets you prevent the use of formatting you don't want, but also lets you control and enhance the formatting that appears. When users create or edit content, they can choose between the text formats administrators make available to their user role.

The range provides a specific set to a user to get a result in between a particular field.

The range filter allows a user to search within a given relatable range.

5.2 Filters with range

To have a range inside a filter we use Granularity item processor. To do so follow these steps:

- Go to search and metadata under configuration.
- Click on facets then add facet.
- Choose the facet source, fill the name and choose a widget.



Note: Here, we can choose any widget from the list of the checkbox, list of links and dropdown.

- Now under Granularity item processor, write the granularity then the minimum and maximum value of the range.
- Click on include lower and upper bounds to add them in range while filtering the content.

Note: If lower and upper bounds are not added inside the filter then at the time to searching content the results won't be that accurate.

- Now do other basic settings accordingly.
- Choose the way for sorting the filter components. (ascending is preferred).
- After saving, place the facet block at a specified position.

Now, we will be having a filter having a specified range. If you want to apply multiple ranges at the same time, then under widget choose the list of checkboxes.



6. Task 3 : Content Sharing on Social Media

The task is to create a social sharing button at each content. So, that visitor can share the content.

6.1 Introduction

Social Media is a great communication tool that can help businesses connect and promote their website all over the world. The potential to share content online is far more powerful than many people realise.

Sharing site's content on social media increase the site's popularity and makes it easy for the user to share the content.

6.2 Need for Social Sharing Button

- If we have social sharing buttons on our website, then it will be easy for readers to share the content of your website.
- It will provide a good experience to the visitor.
- Increase the popularity of the website, increasing your business.

6.3 Module Required

- [Add to any share button](#)

This module enables us to share the link of the current node on social media.

- AddToAny includes many services like Facebook, Twitter, Google+, Pinterest, WhatsApp and many more.



- AddToAny makes it easy to share via Gmail, Yahoo Mail, Outlook.com, AOL Mail, and any other web-based emailer or desktop email client.

6.4 Configuration

- Just install and enable this module.
- Now go to web services configuration, there under add to any choose entities where you want social sharing button.
- Here, you have the option to choose which content you want people to share from your website.
- After this, go to the content type and under manage, fields add “add to any share button”.



7. Task 4 : Feedback Form

The task is to create a feedback form, that will send the feedback message to the admin via mail.

7.1 Introduction

A feedback form is a way in which customer opinion is obtained. Feedback forms help in improving services and even the fundamental understanding of business users. It is considered one of the most efficient and economical methods of understanding customers and measuring customer satisfaction.

Feedback forms are one of the most effective modes of communication between customers and businesses. The customer can provide the business with their experiences, requirements or suggestions.

7.2 Module Required

- For feedback forms, we need the **Contact** module. This module is available in the core of a Drupal website.
- [SMTP Authentication](#) ,install and enable the module.

This module allows Drupal to bypass the PHP mail() function and send an email directly to an SMTP server. The module supports SMTP authentication and can even connect to servers using SSL if supported by PHP.



7.3 Configuration of SMTP Authentication module

To send mail through SMTP we need to do some configuration.

- Under xampp folder inside the php.ini file:

```
; For Win32 only.  
; http://php.net/smtp  
SMTP = smtp.gmail.com  
; http://php.net/smtp-port  
smtp_port = 465
```

- Under SMTP server settings:

```
SMTP server - smtp.gmail.com  
SMTP Port - 465  
Use encrypted protocol - SSL
```

These things should be same.

- Under SMTP authentication write working mail id and password.
- Provide a valid mail id for test mail and save.

7.4 Creating Feedback form.

While creating feedback form it is advised that under receipt you write admin's mail id, so, that admin will get all the feedback notifications.

- The created form can be placed as a block anywhere, by going on block layout under the structure.
- The form can be placed at main navigation too.



8. Task 5 : Dropdown by using Superfish & Taxonomy

The task to create taxonomy terms and creating a dropdown menu using superfish module.

8.1 Introduction

A special structure type in Drupal 8 core, Taxonomy helps in categorizing and filtering the content. It is basically attached as a reference entity to the content and in this way it classifies content.

So we add vocabulary to the Taxonomy that organizes the term in the hierarchy. The vocabulary consists of the terms that further can be listed in the subterms. For example, a vocabulary is created as Novels where the fiction, non-fiction sci-fi, thriller are termed in the terms. Even the terms can be subdivided into other sub-categories.

8.2 Basic Configuration

- While adding a field in the content type Taxonomy term should be selected and in the field settings the desired vocabulary should be selected
-
- The Taxonomy field is displayed as the entity reference.
- By default a view is created for the taxonomy terms, there is a single view for multiple terms.



8.3 Dropdown menu using taxonomy terms

One can have taxonomy terms at the menu of the website. For that just go to menus and choose any type and place the link of terms you want at the menu.

FOR DROPDOWN:

1. Module required:

-Superfish

Install and enable this module. This allows us to have a dropdown menu and sub-menu.

2. Settings :

Under block, layout disable default main navigation and enable superfish main navigation. This is applicable to all types of menus.

For nested dropdown just the fields under particular fields.



9. Task 6 : Content Moderator (User, Publisher)

The task is to create users having different roles, one user will be allowed to add the content but that will be unpublished and the other user will approve the content and publish that.

9.1 Introduction

Websites may contain sensitive information. It is important to have only “official” versions of items or files viewable by users. To do this we require the approval of an item or file before the content becomes visible to most site users. By requiring approval, the organization can apply a significant level of quality and security to the content in the lists and libraries.

Here, we are going to have two different users having different roles respectively. One will be able to only add content on a particular content type, but that content will be unpublished and the other will be able to approve the content and publish that.

9.2 Creating users:

1. To add content

Here, create a user under people. That user should have the role of an authenticated user, it is advised not to allow an anonymous user to do any changes on the website.



2. To approve content

Here, create a new role to approve content and then add a user for that role.

9.3 Modules required

- **Workflow, Content Moderation** modules are required, they both are available in the core of Drupal site.
Enable them.

9.4 Configuration

- Under workflows, there will be a created workflow.
- There will be some specified states we can add more states and transitions in that workflow.
- Choose a content type where you want approval
- A new workflow can also be created.



9.5 Permissions

- **To content adder (Authenticated user)**

Give all the content related permission to the user of a particular content type and under transition give permission only of the state that you want it to add content.

- **To content approver (Publisher, Moderator)**

Give all the content related permission to the user of a particular content type, under transition give permission only of the state that you want it to add content and also allow this user to access admin toolbar.

Now the content won't publish without approval.



10. Task 7 : Approval mail after content

Get approved to User

The task is sending the mail to the user who will approve content after addition of content, and the confirmation mail will be sent to the other user who added the content.

10.1 Introduction

Confirmation emails are from the admin to the users of a different role. Confirmation emails are quite useful, though this one can know whether his idea, suggestion or any of his contribution is approved or not.

Here, we are using this to send an email to the content approver that content is waiting for approval and an email to the content adder whether his content is approved or not.

10.2 Module required

- **Rules** install and enable this module.

This module allows us to add rule to a particular content type or on a particular user.



10.3 Configuration

- Add a rule for sending mail to the **content approver** here, under event choose an option from moderating content.
- Now add an action choosing send mail option and then add the mail id of the content approver.
- Add a rule for sending mail to the **content adder** here, under event choose an option from moderating content(after updating).
- Now add an action choosing send mail option and then add the mail id of the content adder.

Now, whenever the content is created a mail will be sent from admin to approver and after publishing another mail will be sent from admin to content adder.



References

For summing up the report the following resources were of great help, thus these links are truly up for consideration in order to build a website.

1. [Drupal.org](#)
2. [Spoken Tutorials](#)
3. [Drupal Stackexchange](#)
4. [Ostraining](#)
5. [Modules Unraveled](#)

