



Summer Fellowship Report

On

Distribution for Academic Institution in Drupal 8

Submitted by

Esha Dutta

Under the guidance of

Prof.Kannan M. Moudgalya
Chemical Engineering Department
IIT Bombay

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Chapter 1

Introduction

The task was to create an **Academic Distribution** using Drupal 8.

A distribution is a collection of modules, themes, and associated configuration settings that prepare Drupal for a specific operation. The distribution includes Drupal Core along with additional software such as libraries, modules, themes and installation profiles. The Distribution has been created after analyzing the existing website of an academic institution (SRM Institute of Science and Technology) and finding popular features which can be incorporated into the distribution.

These features have been incorporated in the distribution in the form of content types, modules etc.

Drupal 8 uses PHP for its backend framework. Additionally, YAML is used to define its configurations. These languages were used to construct Modules and their respective migration configurations.

Chapter 2

Drupal

2.1 Why use a Content Management System?

A Content Management System (CMS) is a software that may provide templates, and pave way to create and manage digital content for a website.

A CMS helps create a more dynamic website faster with multiple users and easy access to pre-views of the website.

Drupal is an open source Content Management Framework which is written in PHP. It provides a back-end framework for about 3 per cent of all the websites worldwide- ranging from corporate and political websites to personal blogs.

2.2 Drupal Installation

The prerequisites for the installation of Drupal 8 are:

- PHP 7.2
- Apache 2.4.2
- MySQL 5.7.2

Thus, LAMP Stack (Linux Apache MySQL PHP) was installed on Ubuntu 18.04.

Drupal also requires other features for ease of functioning which were installed. They are listed as follows:

- Drush (DRUpal SHell): This is a shell-based application used that administers, controls, and manipulates Drupal websites.
- Composer: This is a package manager that runs from command line for PHP that provides a standard format for managing dependencies of PHP software and required libraries

Chapter 3

Analysis

3.1 Existing Acadmix Distribution

A content type is a group of fields that will store data which relate to each other. An existing Acadmix Distribution was present initially which contained four Content Types:

1. Faculty Page: This stores information about faculties
2. News: This stores data about recent news related to the institute
3. Event: This stores data related to upcoming events on campus
4. Slider: This is a slideshow of multiple images accompanied by a subtitle

3.2 Proposed Changes

The Content Types in the Acadmix Distribution were missing several fields which were deemed necessary according to the analysis of pre-existing Academic Websites. The fields added were:

1. Faculty Page: Professional Experiences, Academic Experiences, Memberships, Publications, and Working Papers. All of these are multivalued 'text' fields.
2. Event: The fields added were Registration link (of type 'link') which redirects to a registration page for the event, and a 'file' field called Brochure

Additionally, several necessary content types were identified and created. They are enlisted below:

1. Achievements: This content type will enlist the achievements made by the people in the institution, distinguished by the taxonomy term 'Achievement Type' (Staff/Student)
2. Placements: This will detail the number of students placed in each company categorized according to the academic year in which they were placed using a Taxonomy Term, Year (2013,2014 etc.)
3. Lab: This will list each lab along with its details (e.g. Location, Software etc.)
4. Lab Manual: This will contain lab manuals for each subject
5. Programs Offered: This will detail the various undergraduate, postgraduate, and doctorate courses offered
6. Faculty Online Courses: This will tabulate the faculties enlisted in online course along with the name and link to the course
7. Special Interest Groups: This will categorize the faculties by the research projects they have worked on

8. Corporate Advisory Board: These are the details (name, photo, company name etc.) of the representatives of various companies that provide strategic corporate advice

Chapter 4

Views

A view consists of listings of content on a webpage. The core Views module handles the display of views and allows the user to create and edit them in the administrative interface. Views allow users to create a list of only the content that they want, based on the criteria that defined. Views can be created to output any content entity that is stored in the system.

A separate view was made for each custom content type. These views were accessible using the main navigation menu of the website.





The main navigation menu:

[About](#) [Achievements](#) ▾ [Corporate Advisory Board](#) [Faculty](#) [Infrastructure](#) ▾ [Placements](#) [Programs](#) [SIG](#)

Some examples of views are as follows:

A table displays all the fields of the content type Corporate Advisory Board:

Corporate Advisory

Title	Designation	Company Image	Company Website	Member Image
Mr. K. Ganesan	Vice President- HR		Tata Consultancy Services	
Ms. Devi Jayaraman	Director		Cognizant	

The placement details of the institute are filtered by year (using a taxonomy term categorizing data according to the year of placement):

Placement Details

Year (field_year) 2014-2015  

Title	Total Students Placed
Infosys	74

Chapter 5

Migration

A separate Comma Separated Value (CSV) file was created for each content type containing data for all the fields in LibreOffice Calc. The data was then imported with the help of YAML configuration files (which detail the fields, location of CSV files etc.) through the User Interface.

Thus, each content type has its own migration configuration file. The modules required to be enabled for migration from a CSV are:

1. Migrate
2. Migrate Source CSV
3. Migrate Plus

Migration was carried out for fields like simple text and numbers, images, files, taxonomy terms, paragraph types etc.

	A	B	
1	id	title	description
2	1	IET Award	Dr. B. Amutha received "IET Dynamic Chapter award" from IET Chennai Local Network
3	2	EMC Award	Dr. B. Amutha received "EMC Academic award" from IET Chennai Local Network
4	3	Arivukalanjiam Award	Dr. B. Amutha received "Arivukalanjiam Award" from IET Chennai Local Network

Chapter 6

Modules

6.1 Modules and Drupal Console

A module is a set of PHP, JavaScript, and/or CSS files that extends site features and adds functionality which can be added by enabling them from the UI or command line. They can be removed by disabling them similarly.

Drupal Console is a tool used to generate boilerplate code, interact with and debug Drupal through the command line interface.

6.2 Custom Modules

Drupal Console was used for the creation of modules of each content type using the command `drupal:generate:module`. The following files are created in the custom module folder:

- `composer.json`
- `modulename.info.yml`
- `modulename.modules`

The YAML files for their migration and views were also added to the modules. Thus, when enabled, these modules would allow the user to use the aforementioned content types as a part

of their website. The views will also be available along with the migration configuration.

After the modules for each content type were created and pushed onto the github repository, I practiced adding functionality to custom modules.

Modules can also be used to change the display of the pages on a website by adding a hook function in the Controller.php file of the module. A hook function is a PHP function that is used to extend functionalities in Drupal. I practiced simple tasks like changing the default value of a field or changing text on a web page.

Reference

- [Drupal 8](#)
- [Drupal Console](#)
- [Stack Overflow](#)
- [Github Repository](#)
- [Various resources on Youtube](#)