Summer Fellowship Report

On

Academic Distribution using Drupal 8

Submitted by

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Under the guidance of

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Contents

Chapter 1

Introduction

1.1   Content Management System

A content management system (CMS) is a software tool that lets users add, publish, edit, or remove content from a website, using a web browser on a smartphone, tablet, or desktop computer. Typically, the CMS software is written in a scripting language, and its scripts run on a computer where a database and a web server are installed. The content and settings for the website are usually stored in a database, and for each page request that comes to the web server, the scripts combine information from the database and assets (JavaScript files, CSS files, image files, etc. that are part of the CMS or have been uploaded) to build the pages of the website.

1.2   Drupal

Drupal is a flexible CMS based on the LAMP stack, with a modular design allowing features to be added and removed by installing and uninstalling modules, and allowing the entire look and feel of the website to be changed by installing and uninstalling themes. The base Drupal download, known as Drupal Core, contains the PHP scripts needed to run the basic CMS functionality, several optional modules and themes, and many JavaScript, CSS, and image assets. Many additional modules and themes can be downloaded from the Drupal.org website.

1.3 Distribution

Distributions provide site features and functions for a specific type of site as a single download containing Drupal core, contributed modules, themes, and pre-defined configuration. They make it possible to quickly set up a complex, use-specific site in fewer steps than if installing and configuring elements individually.

1.4 Academix Distribution

This project is about contributing to Academix Distribution which is open source distribution developed for the specialized purpose of providing the structure and foundation for building different college site.To Develop this distribution for the provision of features to be incorporated in it, different college websites were analyzed and based on that different modules were generated. My task was to analyze my college site(L.D. College of Engineering) and contribute to the distribution accordingly.

Chapter 2

Setting Up Academix Distribution

2.1 Installing LAMP Stack

As Drupal is based on the LAMP environment, the foremost task is
to install LAMP stack. For Drupal 8 the basic required versions of
LAMP are as follows:

- **Ubuntu:** 18.04

- **Apache:** Apache 2.4

- **MySql:** MySQL 5.5.3

- **PHP:** php7.2

2.2 Installing Academix Distribution Website

For Distribution installation **Composer** is required. Composer is an
application-level package manager for the PHP programming language
that provides a standard format for managing dependencies of PHP
software and required libraries.It is recommended that Drupal 8 sites
be built using Composer, with Drush listed as a dependency. Drush
is DRUpal SHell. Drush is a command line utility you can use to
communicate to your Drupal CMS.

The necessary files for the distribution are obtained from github
repository through the *composer create-project* command into the men-
tioned directory.

Finally the Academix Distribution Website is installed through UI
and can be accessed from the localhost.

Chapter 3

Content Types in Academix Website

3.1 Introduction

What is Content Type? A single web site could contain many types of content, such as informational pages, news items, polls, blog posts, real estate listings, etc. In Drupal, each item of content is called a node, and each node belongs to a single content type.

3.2 Adding Content Type based on analysis of L.D College of Engineering

Along with the already added content types in the Academix Distribution which are:

- **Faculty Page:** Content template for opening Faculty Page.

- **Event:** Creates an event which can be given a start and end date, thus appearing in the events calendar. You can include talks, seminars, CEP courses, etc.

- **News Item:** Provides news information to be put up on the main page.

- **Main Slider:** Provides the content template to enable the slide show in the site.

The new content types were added based on the L.D.C.E Site analysis.These Content Types are as follows:

- **Clubs:**This is the content type for different clubs and sports clubs of L.D.C.E.

- **Companies:** This is the content template for the various companies that visit L.D.C.E for Placements.

- **Program:** This content type is added for provision of information about the various courses provided by different departments.

- **Department:** This content type provides the information about the various department of L.D.C.E.

- **Useful Links:** This content type provides template for the representation of various useful links of L.D.C.E.

- **Legal Forms:** This content type refers to various legal forms of L.D.C.E.

- **Photo Gallery:** This is the template to hold various photos of various events or occasions of college.

Chapter 4

Views and Taxonomy

4.1 Views:

Based on the contnent types added in academix distribution different views are generated.The folowing views are generated:

- **Achievements:**This view is created to show achievements according to year.

- **Newsletter:**This is same as achievement this is of news type.

- **News and Updates:**This view is created to view the news according to Department. Hence the exposed filter is used to let the user select the department.

- **Notice Board:**This view is created to project the information which is concerned with the students.

- **More Info:**This view is created to display the trivial info like brochures,scholarships,etc.

- **Clubs:**This view is created for clubs content type.

- **Department:**This view is created for the department content type.

- **Library Resources:**This view is created to view the content related to the library resources in tabular format.

- **Photo Gallery:**Through this view it is possible to group various images according to the events.

- **Faculty:** This view contains the contextual filter which shows the faculty details of a particular department.

- **Useful Links:** This view is created for the Useful links content type.

4.2 Taxonomy:

Various taxonomy vocabulary created for the website are:

- **Activity:**This vocabulary contains Clubs and Sports which is referred in clubs content type.

- **Admission Program:**This contains items like UG,PG,PDDC and is referred in course content type.

- **Legal forms:**This is created for items like MOU,Mandatory notice,etc and is referred in Legal forms content type.

- **News Type:**This contains items like Newsletter,General,health news,etc to categorize the news item.

Chapter 5

Migrating Data in Content Types

5.1 Understanding Migration:

Migrations are Extract - Transform - Load (ETL) processes

- extract phase is called source

- transform phase is called process

- load phase is called destination

In the source phase, a set of data, called the row, is retrieved from the data source. The data can be migrated from a database, loaded from a file (for example CSV, JSON or XML) or fetched from a web service (for example RSS or REST). The row is sent to the process phase where it is transformed as needed or marked to be skipped. After processing, the transformed row is passed to the destination phase where it is loaded (saved) into the target Drupal site.

For this project we have migrated data from csv. A Comma Separated Values (CSV) file is a plain text file that contains a list of data. These files are often used for exchanging data between different
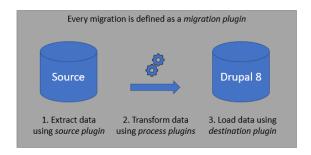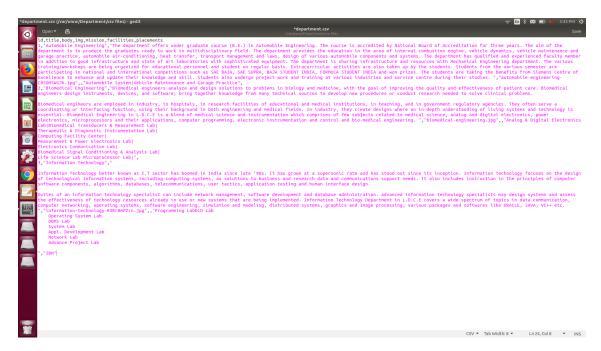

Figure 5.1: ETL

Figure 5.2: csv of department content type

applications. For example, databases and contact managers often support CSV files. With the help of modules like Migrate plus, Migrate tools, Migrate source csv the migration is carried out.Hence using these modules the data from source csv is migrated to destination website according to content types.
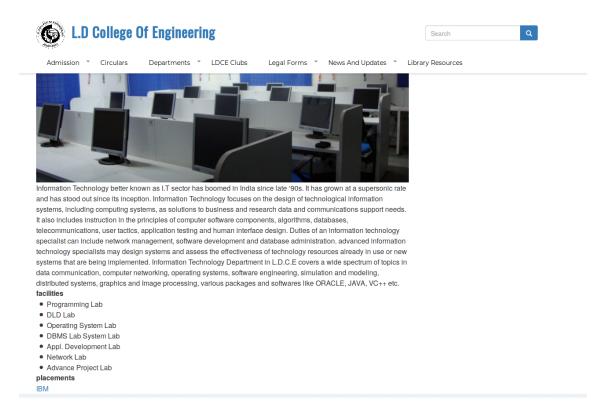
Figure 5.3: Data migrated in UI

Chapter 6

Generating Modules

6.1   What is Module?

A module is a set of PHP, JavaScript, and/or CSS files that extends site features and adds functionality. You can turn the features and functionality on by installing the module, and you can turn it off by uninstalling the module.

6.2   Creating Custom Modules

According to content types the modules are generated. The purpose of module generation is to make the distribution readily available in single download.The necessary content types can be installed or uninstalled in the form of module.For each content type the module is generated and exported.

The modules generated are then pushed into the github where the distribution is and now this distribution is readily available for download.

Reference

- Drupal 8 Migration

- Drupal 8 Custom Modules

- Github Link