VAP DIGITAL MEDIA Pvt. Ltd.
Summer Internship

By

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GitHub Helper

Summer Internship Report

Submitted in partial fulfillment of the requirements

For the degree of

Bachelor of Technology in Computer Science & Engineering

By

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CERTIFICATE

This is to certify that the Internship entitled "GitHub Helper" submitted by Kaushal Parmar (21BCE179) towards the partial fulfillment of the requirements for the degree of Bachelor of Technology in Computer Science and Engineering of Nirma University is the record of work carried out by him under my supervision and guidance. In my opinion, the submitted work has reached a level required for being accepted for examination.

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ACKNOWLEDGEMENT

ABSTRACT

As part of my internship project, I created a Laravel-based GitHub helper application to control and keep track of branch limitations in GitHub repositories. The project's goal was to automate the process of monitoring branch counts and alerting users when they rise above predetermined thresholds. Implementing branch limit checking, establishing Laravel's queue system to manage background tasks, and configuring SMTP settings for automated email notifications were all included in the scope of work. I also changed the database structure with branch limit columns and made seeders to fill in the initial data. Designing these schema updates, integrating job dispatching for branch limit checks, and making sure the program could effectively handle branch monitoring were important preparatory tasks. The successful automation of user notifications and branch monitoring, which greatly improves repository administration and offers timely updates to avoid problems associated with branch usage, is one of the key discoveries.

1. Introduction

1.1 About VAP Digital Media

VAP Digital Media is a young and dynamic business enterprise, involved in the field of search engine optimization, web designing, reputation management, mobile applications, content marketing etc. The core values of trust, ethics, integrity and honesty are inculcated in the business operations of VAP group. Our philosophy is to create unique, innovative and cost effective technologically advanced business solutions for 21st century business enterprises.

VAP's managed services help clarify IT procedures, increase user satisfaction and service quality while reducing operating costs. Implementation techniques provide the use cases and capabilities that are accurately deployed, resulting in faster time to value. Strategic services help customers review their ongoing environment, analyze the desired future state, process, and data to gain business-critical outcomes.

1.2 Objectives

The objective of the internship was to create a GitHub helper application using Laravel to easily manage GitHub repositories. This included adding functionality to monitor branch limits, check user inputs, and automate email notifications when branch limitations were reached. In addition, I established the database schema to handle these capabilities and developed seeders for initializing repository data. The purpose was to streamline repository management and provide early alerts to avoid branch overuse.

1.3 Problem Statement

Managing GitHub repositories with numerous branches can lead to inefficiencies and potential issues if branch limits are not properly enforced. The challenge is to monitor branch counts within repositories, detect when they exceed predefined limits, and ensure timely notification to users to manage repository resources effectively. Additionally, setting up initial data for repositories and their branch limits is crucial to ensure the system functions correctly from the start.

2. Methodology

2.1 Technology Used

1. Laravel

- A robust PHP framework designed for web application development.
- Offers an elegant syntax and numerous features to streamline development.
- Provides an ActiveRecord implementation for interacting with the database.
- implifies complex queries and data manipulations with an intuitive API.

- Manages HTTP routes for handling requests and directing them to appropriate controllers.
- Supports RESTful routing and route parameter binding.
- Facilitates database migrations, running tests, and other routine operations.

2. Filament

- An admin panel and form builder for Laravel applications.
- Provides a modern and user-friendly interface for managing backend data and creating forms.
- Allows the rapid creation of forms with customizable inputs and validation rules.

- Supports dynamic form elements and user interaction.
- Enables the creation of custom widgets for the admin panel interface

- Supports different types of notifications (success, error, warning).
- Facilitates the display of notifications and alerts to users within the admin panel.
- Provides visual components to enhance the user experience.

3. PHP

- PHP is a widely-used open-source server-side scripting language designed for web development.
- PHP provides built-in support for interacting with various databases, such as MySQL, PostgreSQL, and SQLite. This makes it easy to retrieve, store, and manipulate data.
- It is often used to build RESTful APIs and web services that communicate with other applications or services.

2.2 Tools Used

1. VSCode

- Most of the code was written in the Microsoft Code Editor, VS Code. VS Code has the functionalities for writing codes in multiple languages and provides tools for debugging and building any software.

- This code editor was also used for locally hosting the website that we were building in the developer mode

2. Command Line Interface (CLI)

- CLI is a text-based interface used to interact with the operating system or software by typing commands. It is essential for performing various development and system administration tasks.
- Provide the option to carry out commands directly for activities including system configuration, application execution, and file handling.
- Provides access to development tools and package managers (e.g., Composer for PHP, npm for JavaScript) to manage dependencies and run build processes.

3. XAMPP

- A free and open-source cross-platform web server solution stack package.
- It includes Apache, MySQL, and PHP, making it easy to set up a local development environment for PHP-based applications.
- XAMPP is commonly used by developers for local development and testing of web applications.

2.3 Tasks

1. Add Seeder to Get Started With

- A seeder is used to populate the database with initial data required for the application to function properly. This is useful for development and testing.
- Developed a seeder class to add sample or default data to the database tables. By guaranteeing that the required data is present when the program is first launched, this configuration helps it launch more smoothly.

2. Scan widget validation

- Validation verifies that user inputs are valid and fulfill the relevant criteria before any processing or database activities.

- Implemented validation for the scan widget to ensure that the `'Username'` and `'Token'` are provided and are not empty. This prevents invalid data from being processed or stored

3. **Add Branch Limit Field in Repo**

   - Adding a new field to a model's associated database table allows the storage and management of additional information.
   - Modified the **'GithubRepo'** model and database schema to include a `'branch_limit'` field. This field specifies the maximum number of branches allowed for a repository.

4. **Write a Job That Will Apply Branch Limit Check and Send an Email**

   - Writing a job involves creating a background process that performs specific tasks, such as checking branch limits and sending notifications
   - Developed a job class to check if the number of branches in a repository exceeds the defined limit. If the limit is exceeded, an email notification is sent to alert the user.

Each task focuses on a specific aspect of the project, contributing to the overall functionality and effectiveness of the application..

3. Result Analysis

3.1 Login Page

- **Login Page:** Allows users to enter their credentials to access their account.
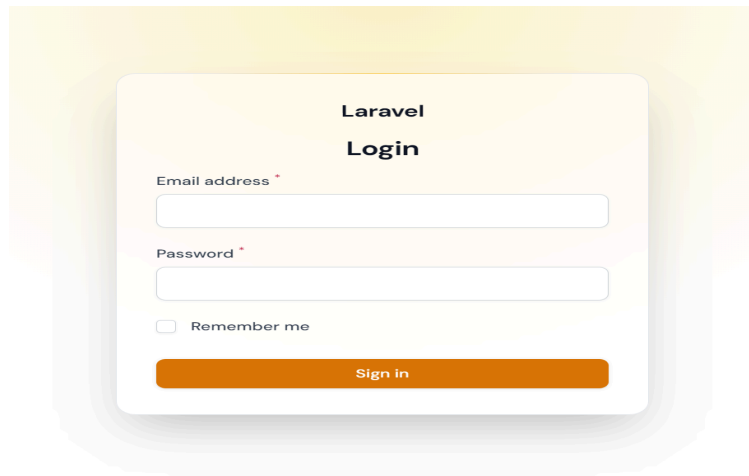
3.2 Add Seeder

● To set up an application with a default user, need to create an initial seeder. This seeder will add a demo user to `users` table, making it easier to get started with an application.

3.3 Validation

● Modify the user interface to display the error image when validation fails.

● Provide clear feedback to the user along with the error message. This can include an error message such as "Username and Token are required" displayed alongside the image.
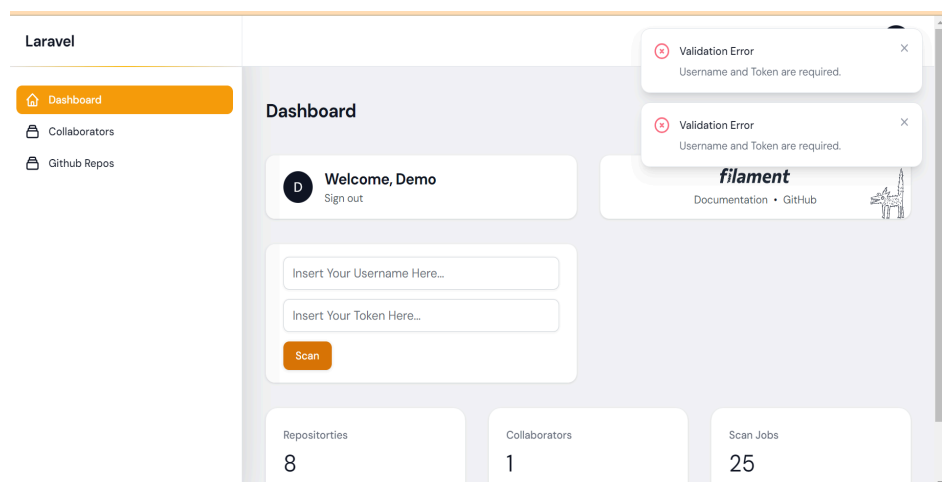
3.4 Add Branch Limit Field

- Add Branch Limit Field in the GitHub Repo table.
- It shows the branch limit field in the GitHub repos page.

3.5 Send an Email

- If the limit is exceeded, an email notification is sent to alert the user.

4. Summary, Conclusion and Future Work

4.1 Summary

During my internship as a Trainee Software Developer at a well-known tech company, I was able to greatly improve my abilities in software development . This position allowed me to work on a variety of development tasks, including the implementation of features and validation processes for web applications.

Working closely with a diverse team of developers, I gained exposure to collaborative development practices and learned the importance of aligning software solutions with organizational goals.This experience provided me with invaluable hands-on practice in coding, debugging, and deploying web applications.

Overall, this internship has been a transformative experience, giving me a solid foundation in software development and enhancing my commitment to using technology to create successful solutions.

4.2 Conclusion

I am deeply appreciative of the opportunity provided by VAP Digital Media Pvt Ltd during my internship as a Trainee Software Developer. The experience I gained in developing and managing software solutions has been invaluable. I am grateful to the entire team for their guidance and support throughout the internship.

4.3 Future Work

Expansion of GitHub Helper Functionality will involve adding new features based on user feedback and evolving requirements. This could include advanced repository management options or additional analytics capabilities to further enhance the tool's usefulness. improvement of User Interface and Experience will be undertaken to make the application more intuitive and user-friendly.