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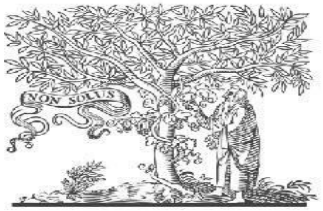

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Title **PROJECT CLAN (CONNECTING LOYOLITES TO THE ALIET NEXUS)**

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Project CLAN (Connecting Loyolites to the ALIET Nexus)

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Abstract. Project CLAN is being worked upon with the objective of creating a dedicated platform for the students of Andhra Loyola Institute of Engineering and Technology by which they will be able to stay connected and updated with the activities being conducted in the college. This platform is built using HTML, CSS, Bootstrap, Django and PostgreSQL. The desired outcome of this project is a group of students who are able to connect, collaborate and contribute for the betterment of each other in a passionate manner.

Introduction

Social media has blended into our daily lives and has drastically changed the manner in which we communicate and exchange information with each other. However, due to a lack of dedicated platform the students of the college are unable to stay connected with other peers.

Project CLAN aims to tackle this problem by providing a platform dedicated to the student community which will help them not only to stay connected and be updated with the activities being conducted in the college but also to share knowledge and give suggestions to other students. This website will be developed using HTML, CSS, Bootstrap, Django and PostgresQL.

Methodology

To develop a social media website that meets the specific requirements of the college community, it was important to conduct a thorough analysis of its needs and requirements. Therefore, our first step was surveying the campus to gather input from both students and faculty. After that, the requirements would be implemented using the Django MVT (Model-View-Template) architecture to design and develop the website.

A. Surveying the Campus

The survey was conducted in both online and offline mode. We sent Google Form links to each class and also approached students and faculty in-person to gain more clarity on what kind of features and functionality they wanted to see in the platform. We asked questions such as: “What features would you like to see in a social media website for the college community?” “What are some of the challenges you are face in staying updated with college events and activities?” “How often do you use social media, and for what purposes?”.

The data gathered was analysed to identity common themes and areas of interest. This information was used to develop the website, ensuring that it met the needs and expectations of the college community.

B. Django MVT Architecture

The Django MVT (Model-View-Template) architecture was used to develop this site. This architecture is a popular choice in web development projects, as it provides a clear separation between the data model, the user interface, and the application logic.

The model component of the architecture defines the data structure and the relationships between the different data entities. The view component handles the logic and functionality of the website, such as handling requests and rendering appropriate data. Finally, the template component defines the user interface and how the website is presented to the user.

C. Conclusion

The methodology of this project involved a thorough analysis of the needs and requirements of the college community, through surveying the campus and utilizing the Django MVT architecture to design and develop the website. By gathering input from both students and faculty and implementing an organized approach, the resulting social media website was able to meet the needs of the college community.

Limitations

While the development of the social media website for the college community was successful, there are some limitations that should be considered while evaluating the project.

Firstly, as with any web development project, there are ongoing maintenance and security concerns that must be addressed. While the website was designed with the security and privacy of the users in mind, it is important to admit that no website is completely immune to security threats.

Secondly, the functionality of the website is limited by the features and capabilities of the technologies used in the stack. While the Django framework comes with many built-in features and tools, there may be limitations to what can be achieved with this technology stack.

Thirdly, the success of the social media website may depend of the level of participation and engagement of the college community. It is possible that some students or faculty are reluctant to use the platform in favour of other means of communication. Therefore, ongoing efforts will be required to encourage the use of the website among the college community.

Finally, the website is only accessible to the college community, which may limit its usefulness to those who are not affiliated to the college. While this was a deliberate choice to maintain a sense of community and exclusivity, it does mean that the website cannot be used to connect with a wider audience.

In conclusion, while the development of the social media website for the college community was successful, there are limitations to its functionality, accessibility, and potential user engagement that should be considered.

Literature Review

Many conferences have been conducted on using social media as an educational tool. Some of the reviews are stated below.

In June 2015, in an international conference was held on “The Use of Social Media in Education: A review of recent research” at Haydarpasa Industrial Vocational High School (Turkey) by three researchers namely Feridun Özçakir, Mehmet Fatih Erkoç, Şahine Özçakır. It was concluded that social media has a significant impact on the life of students both positive and negative. Social media is being used as an e-learning platform and as a tool to exchange knowledge.

In 2019, an international conference was held on “Impact of Social Media on Students’ Academic Performance & Generation Gap: A Study of Public Sector University in Punjab”. The research concluded that social media

raises the understanding level of students in the field of learning, as students discuss some information by video calling and make social groups for studies. On the contrary, they indulge in browsing social media and study at the eleventh hour which reduces their performance in exams.

In 2020, IEEE Intl Conf on Dependable, Autonomic and Secure Computing, Intl Conf on Pervasive Intelligence and Computing, Intl Conf on Cloud and Big Data Computing, Intl Conf on Cyber Science and Technology Congress. "A Study of Social Network Applications in University Education" by Dr. Mohammad Yahya Alghamdi, Department of Computer Science, Faculty of Science & Arts of Baljurshi, AL-Baha University, Baha, Saudi Arabia. The study concluded that Social Network applications have been associated with substantial benefits for teaching and learning purposes in university education. Additionally, social network applications create opportunities for individual reflection and shared learning, which are the missing applications in traditional university education.

Many such surveys have been conducted in the past few years. Although, little to no research has been conducted on creating a social media platform specifically for a single college or university.

Implementation

The development of this website was divided into three stages. Its names are: Flow of Interaction, Database connection, Django MVT Architecture.

A. Flow of Interaction

This stage involving developing just the front-end portion of the web application based on what manner the user is most likely to interact with the website.

The usual flow of interaction would be to enter the site name in the browser where the user will be presented the home page of the site. From there, he needs to create an account using his email or otherwise using third parties such as Google / LinkedIn. After creating the account, the user will be redirected to the dashboard where the main content of the application is displayed. From there the user has many options such as messaging someone, making a post, liking or commenting on a post, messaging someone, following someone, checking someone's profile, etc. and at the end the user would log out.

Based on this flow, the necessary HTML files were created and the front end was developed.

Database Connection

To create a project in Django, the django-admin startproject command is used which automatically creates a directory structure for your project. Among all the files and folders created, there is one file known as settings.py which is used to install packages, change constant values, set template folders, database connections, etc. By making changes in this file, we connect to the Postgres database.

By default, django connects to an SQLite database. But after making some changes, the database section in the settings.py file should look similar to this:

Figure 1. Database Setting

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As shown in the above picture, the name of the database which is being connected is clandb. Notice that the password is not explicitly written due to security issues. Therefore, a user environment variable named PGPASS was created to store the database password which can then be retrieved using the environ() function of the os python package. The localhost is being used.

B. Django MVT Architecture

The Django framework implements the MVT (Model-View-Template) architecture to develop the backend.

Model. The Model component deals with the structure of the data being stored in and retrieved from the database. Models are like the schema for the database. The models are described in a django project in a file known as models.py. The relations between entities is also mentioned in the models. Django uses the migrate command to convert the models into database tables. Therefore, every time a change is introduced in a model, the migrate command is run in order to change the database accordingly.

View. The View component is in charge of processing requests from the server and rendering an appropriate response. In Django, these views are implemented as functions which take at least one request object as an argument and returns an HttpResponse object and can be found in the views.py file. Views are extremely useful in form submissions and are also responsible for implementing dynamic behaviour in the website. Every view is mapped to a specific URL. All the urls can be found in the urls.py file.

Template. Templating is a mechanism in which dynamic data is injected into a static HTML file. By default, Django comes with a templating language called django templates. Another popular alternative to this is Jinja Templates. We can tell django where we want to store our templates in the settings.py file.

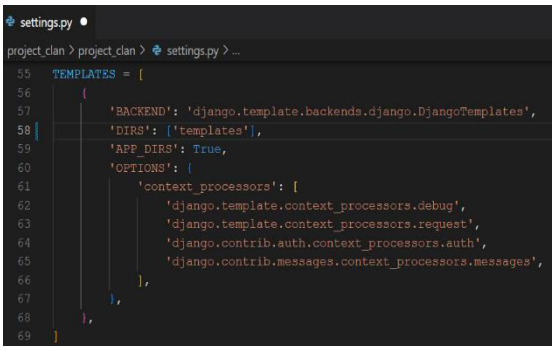

Figure 2. Templates in Django

In the above image, we have specified that we want to store all our templates in the templates folder in the root directory of the project.

Conclusion

The finished home page of the social media website is displayed below.

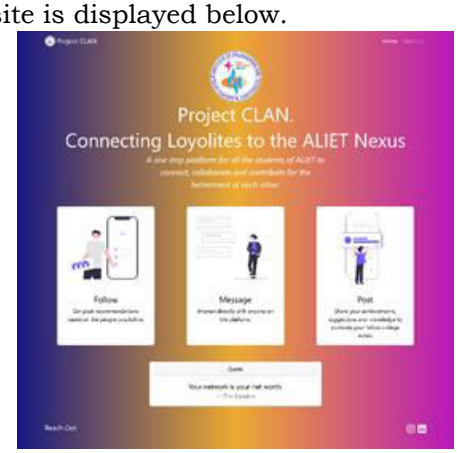

Figure 3. Home Page

Acknowledgements

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necessary features of the website. Finally, we are thankful to the developers and contributors of the technologies used in the development of the website, including Django and PostgreSQL. We would not have completed this project without the support and contributions of these individuals and organizations.

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