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MEDICINE DONATION NGO SYSTEM

[1]DEEPAK KUMAR, [2]MS PRATIBHA GAUTAM
[1]STUDENT B.TECH, [2]ASSISTANT PROFESSOR & GUIDE
BHAGWAN MAHAVEER COLLEGE OF ENGINEERING AND MANAGEMENT
SONIPAT, HARYANA

Abstract— Web development is same as building a house. Just like we require a plan, a building permit and license from city, web development also requires documentation, appropriate server, designing and a programming language. Since the standards of web de- signing are always increasing and so does the complexity of the technology required, frameworks have now become a crucial part of developing websites or web applications. It is absolutely unreasonable to reinvent the wheel, thus for designing rich and attractive websites, it is very much sensible to use frameworks endorsed by developers all over the world. Django, Angular, Spring, React, Vue, Express are some of the well-known web development frameworks. In my project I have used Python's Django Library

Keywords
Python Django, SQL Parse, Typing_Extension, QR Reader.

1. INTRODUCTION

Django is a Python-based web framework which allows you to quickly create web application without all of the installation or dependency problems that you normally will find with other frameworks.

When you're building a website, you always need a similar set of components: a way to handle user authentication (signing up, signing in, signing out), a management panel for your website, forms, a way to upload files, etc. Django gives you ready-made components to use. Django is used in many popular sites like as: Disqus, Instagram, Knight Foundation, MacArthur Foundation, Mozilla, National Geographic etc. There are more than 5k online sites based on the Django framework. (Source) Sites like Hot Frameworks assess the popularity of a framework by counting the number of GitHub projects and Stack Overflow questions for each platform; here Django is in 6th position. Web frameworks often refer to themselves as "opinionated" or "un-opinionated" based on opinions about the right way to handle any particular task. Django is somewhat opinionated, hence delivers the in both worlds (opinionated & un-opinionated).

Django can build almost any type of website. It can also work with any client-side framework and can deliver content in any format such as HTML, JSON, XML etc. Some sites which can be built using Django are wikis, social networks, new sites etc.
Security

Since Django framework is made for making web development easy; it has been engineered in such a way that it automatically do the right things to protect the website. For example, In the Django framework instead of putting a password in cookies, the hashed password is stored in it so that it can't be fetched easily by hackers.

Scalability
Django web nodes have no stored state; they scale horizontally – just fire up more of them when you need them. Being able to do this is the essence of good scalability. Instagram and Disqus are two Django based products that have millions of active users; this is taken as an example of the scalability of Django.

Portability
All the codes of the Django framework are written in Python, which runs on many platforms. This leads to run Django too in many platforms such as Linux, Windows and Mac OS.

2. TECHNOLOGY USED

There are various technologies used as mentioned below: HTML, CSS, JavaScript, Python Django,

2.1. HTML

HTML stands for HyperText Markup Language. It is used to design web pages using a markup language. It is the combination of Hypertext and Markup language. Hypertext defines the link between the web pages. A markup language is used to define the text document within tag which defines the structure of web pages. It is a markup language that is used by the browser to manipulate text, images, and other content to display in the required format.
It helps to structure our website well. The way a skeleton system gives a structure to the human body, in a similar manner, it acts as a skeleton for a website, without it a website cannot be made. If you want to work as a Software Developer especially in the Web Development domain, then learning HTML is a must, because without knowledge of it you cannot build a website.

2.2. CSS (Cascading Style Sheet)

Cascading Style Sheets, fondly referred to as CSS, is a simple design language intended to simplify the process of making web pages presentable.

CSS handles the look and feel part of a web page. Using CSS, you can control the color of the text, the style of fonts, the spacing between paragraphs, how columns are sized and laid

out, what background images or colors are used, layout designs, and variations in display for different devices and screen sizes as well as a variety of other effects.

CSS is easy to learn and understand but it provides powerful control over the presentation of an HTML document. Most commonly, CSS is combined with the markup languages HTML or XHTML.

3. SOFTWARE REQUIRED

3.1. Python

Python is a widely used general-purpose, high level programming language. It was created by Guido van Rossum in 1991 and further developed by the Python Software Foundation. It was designed with an emphasis on code readability, and its syntax allows programmers to express their concepts in fewer lines of code.

Python is a programming language that lets you work quickly and integrate systems more efficiently.

There are two major Python versions: Python 2 and Python 3. Both are quite different.

3.2. PyCharm

PyCharm is the most popular IDE used for Python scripting language. This chapter will give you an introduction to PyCharm and explains its features.

PyCharm offers some of the best features to its users and developers in the following aspects −

Code completion and inspection

Advanced debugging

Support for web programming and frameworks such as Django and Flask

Features of PyCharm

Besides, a developer will find PyCharm comfortable to work with because of the features mentioned below −

Code Completion

PyCharm enables smoother code completion whether it is for built in or for an external package.

SQLAlchemy as Debugger

You can set a breakpoint, pause in the debugger and can see the SQL representation of the user expression for SQL Language code.

Git Visualization in Editor

When coding in Python, queries are normal for a developer. You can check the last commit easily in PyCharm as it has the blue sections that can define the difference between the last commit and the current one.

Code Coverage in Editor

You can run .py files outside Pycharm Editor as well marking it as code coverage details elsewhere in the project tree, in the summary section etc.

Package Management

All the installed packages are displayed with proper visual representation. This includes list of installed packages and the ability to search and add new packages.

Local History

Local History is always keeping track of the changes in a way that complements like Git. Local history in Pycharm gives complete details of what is needed to rollback and what is to be added.

Refactoring

Refactoring is the process of renaming one or more files at a time and Pycharm includes various shortcuts for a smooth refactoring process.

4. LIBRARIES AND FRAMEWORKS USED

4.1. Python's Django

Django is a high-level Python web framework that enables rapid development of secure and maintainable websites. Built by experienced developers, Django takes care of much of the hassle of web development, so you can focus on writing your app without needing to reinvent the wheel. It is free and open source, has a thriving and active community, great documentation, and many options for free and paid-for support.

Django was initially developed between 2003 and 2005 by a web team who were responsible for creating and maintaining newspaper websites. After creating a number of sites, the team began to factor out and reuse lots of common code and design patterns. This common code evolved into a generic web development framework, which was open-sourced as the "Django" project in July 2005.

Django has continued to grow and improve, from its first milestone release (1.0) in September 2008 through to the recently-released version 3.1 (2020). Each release has added new functionality and bug fixes, ranging from support for new types of databases, template engines, and caching, through to the addition of "generic" view functions and classes (which reduce the amount of code that developers have to write for a number of programming tasks).

4.2. JavaScript

JavaScript is a lightweight, cross-platform, and interpreted scripting language. It is well-known for the development of web pages; many non-browser environments also use it. JavaScript can be used for Client-side developments as well as Server-side developments. JavaScript contains a standard library of objects, like Array, Date, and Math, and a core set of language elements like operators, control structures, and statements.

Client-side: It supplies objects to control a browser and it's Document Object Model (DOM). Like if client-side extensions allow an application to place elements on an HTML form and respond to user events such as mouse clicks, form input, and page navigation. Useful libraries for the client-side are AngularJS, ReactJS, VueJS and so many others.

Server-side: It supplies objects relevant to running JavaScript on a server. Like if the server-side extensions allow an application to communicate with a database, and provide continuity of information from one invocation to another of

the application, or perform file manipulations on a server. The useful framework which is the most famous these days is node.js.

5. ABOUT THE PROJECT

Django styles itself as "a high-level Python web framework that encourages rapid development and clean, pragmatic design. Built by experienced developers, it takes care of much of the hassle of web development, so you can focus on writing your app without needing to reinvent the wheel." And they really mean it! This massive web framework comes with so many batteries included that oftentimes during development it can be a mystery as to how everything manages to work together.

Python Django webpages are defined as templates, There are 9 Different Templates presented in this system:-

- AssignedMedicines.html
- login.html
- DonateMedicines.html
- NotificationDonor.html
- signup.html

5.1. AssignedMedicines.html

This html page is responsible to provide the details of the medicines which are being accepted by the admin to users, this html page retrieves the records from the database table and displays in a proper form with the help of SQL Parse and Typing_Extension.

This html webpage sends a request to the python's Django component for the data retrieval and after getting data it binds it through html.

5.2. Login.html

The Login webpage which is used to prevent unauthorized visitors visiting the webpage, only the registered/Signed up users are allowed to access, This HTML page contains a form in which two textboxes and one Combo Box is used to validate and for secure login, The information in Login webpage is being checked with the database, if any user is found with this credential then users are redirected to the homepage.

5.3. DonateMedicines.html

This HTML webpage helps the admin or end user with providing a user-interface form to fill the medicine details, The HTML browser sends a request using SEND method to the SQL Parse library to retrieve the data from certain table and then it binds the data and displays it to user.

After submitting the form, the POST-BACK method of HTML is called which shows the message that your data has been collected, Thus, The store procedure is also used in this HTML which is made possible by JavaScript.

Medicine Details such as: - Medicine image, Medicine name, medicine quantity, and medicine weight and medicine expiry date are being collected for future use.

5.4. NotificationDonor.html

Again, This Notification webpage follows the same approach of above all Html pages, in this webpage the admin sends a notification regarding Medicine request which is approved by him/her and the true value is returned to this webpage, only donors are able to get the notification message.

Also, The Medicines which are being accepted by the admin in this notification can be tracked down.

The Typing _extension library in this system which scans through the database to look up whether the admin has left the notification message or not.

5.4. SignUp.html

This HTML webpage creates the new role or user to provide the inside access, The webpage contains a form which seeks the details from new users such as: - Username, Full name, password, Role type , etc.

Each user has 3 different roles: - 1) NGO (Administrator)
2) Medicine Donor
3) Volunteer

These details are collected and stored in signed up user's table database with the help of SQL Parse and HTML Post method.

6. CONCLUSION

The evolution occurring in the technology sector, it has become necessary for all of us to become used to these new advancements if we want to get groomed up and do not want to get stale or neglected in the market. These new technologies also assist us in obtaining more users, increasing the user involvement, and will also help in making better revolutions and conversions. Some of these technologies and advancements have already been implemented while others are looking forward to being implemented in near future. The Django frameworks plays crucial role allowing the programmer to use the infinite libraries to make the project possible, Django is, by and large, the major web framework for Python developers these days and it's not too hard to see why. It excels in hiding a lot of the configuration logic and letting you focus on being able to build big, quickly.

