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Full Stack Web Development for Communication between Students on Research and Innovation Issues

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ABSTRACT: There is a need for development of an online platform targeted to solve communication issues of students in research and innovation. This research paper acknowledges actual issues faced by the students when it comes to research and innovation. The authors have analysed university portals and existing social networks and how they are relevant for students who want to pursue research. The authors have come to a final decision that is imperative to build an online platform for students who want to pursue research. The design and implementation of this digital platform has been discussed.

KEYWORDS: Research, Innovation, Digital Platform, Communication etc.

I. INTRODUCTION

There are a variety of websites and web-based applications for students of technical background, a significant part of it contains only educational programs and bulletin boards. As a result, there is no platform for students who want to innovate and socialize. Many platforms contain few key components, but there is a lack of an integrated framework of all components in the field of innovation. Considering social networks for students do not provide an opportunity to get acquainted with innovative activities in their domain. This analysis further led to the need for the development of an online digital environment for students to communicate for research-based activities. This is a broad platform where students can connect with anyone in the world and clear doubts and queries. Our website creates new ways for learning and networking and will promote online knowledge creation and knowledge sharing. It helps in connecting like-minded people and growth of the individual. Users will gain experience working in teams. Everyone will be updated with the latest trends and technologies in use.

II. METHODOLOGY

The online website is meant to be like a social media platform for the people who want to pursue research. We aim to have a User Interface that is modern, intuitive and user-friendly. We propose to use a modular form of designing a website which means that the website is divided into major components and those major components are further divided into minor components. This modularity allows us to be efficient with our coding at the same time helps in reducing bugs and maintains consistency throughout the design process.

On visiting the website, user will be headed to landing page where information about the website and developers is displayed. For a new user it is mandatory to sign up using a sign up form to access the features of website or login if already registered. On sign up user will be prompted to build a profile consisting of personal details, academic details and social media details.

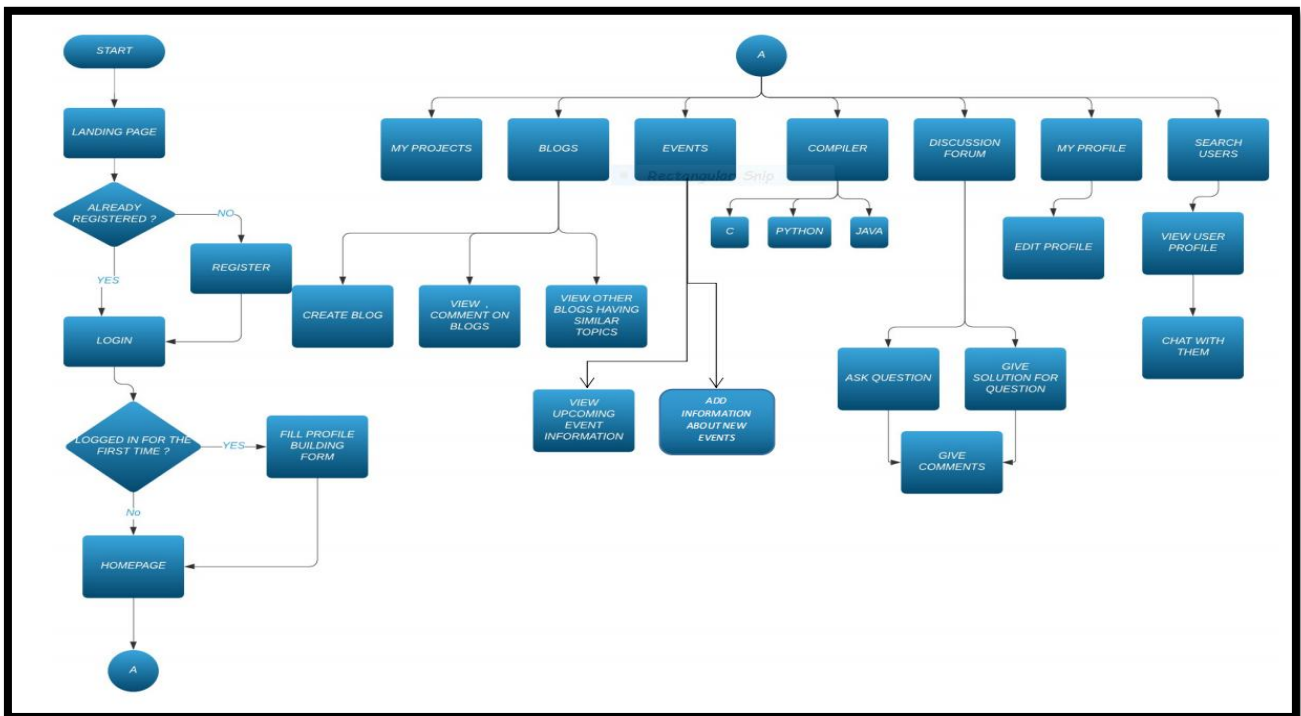


Fig.2.1 Workflow

After Login user will be landing on Home-page, where user can go through recent blogs and events, also the user will be updated about new trends and news related to technology in adjoining RSS News Feed. Website has a Navigation bar which will help users to navigate through different features of website which includes My Profile, Project, Discussion Forum, Edit & Compile, Blogs, Events, Logout. Also, user can search different users through search option on navigation bar. On searching other user, user can view his profile details and can chat with him. While chatting users can send files, images which can be downloaded on a single click.

User can view his own profile details on My Profile section and can also update information and change profile image. Project section will display user’s projects, user can add new project files in this section, download previous files and delete unnecessary files. Project section will act as a personal repository of project for user.

Users can ask their doubts in Discussion Forum, while other users can answer them. Each doubt has different thread where other users can provide solution. Also, they can post comment on doubt question and solution. While posting doubt user needs to select keywords from set of keywords, these keywords are used to search keyword specific content.

Edit & Compile section allows user to write a code in desired programming language and compile it which helps in removing system dependencies. For editor, we've used an Ace editor which is an embedded code editor written in JavaScript. It is used for text/syntax highlighting and auto-completion for the respective language selected by the user. It additionally allows users to apply options like cut, copy and paste. For compiling code, we have used Jdoodle API, which is a RESTfull (Representational State Transfer) API. It compiles the code taken from the editor display screen and returns errors, warnings, and results in the form of a JSON object. Our editor allows user to code in three different programming languages namely c, java, python. Also, user can choose editor theme from a set of different themes like Dracula, Midnight Cloud, Cloud and Chaos. User can compile code and give user inputs if required. On successful compilation of code output will be displayed in output field else errors and warnings will be displayed.

Users can share their thoughts and ideas by posting blogs which every other user can read. All users can give feedback through comments on the blogs posted. Also, users can sort out blogs according to their interest with the help of keywords, they can view only specific technology related blogs if they want. On Events page users can post about ongoing technical events. These events will be visible to all users and if interested they go on to the link for more details.

III.RESULTS

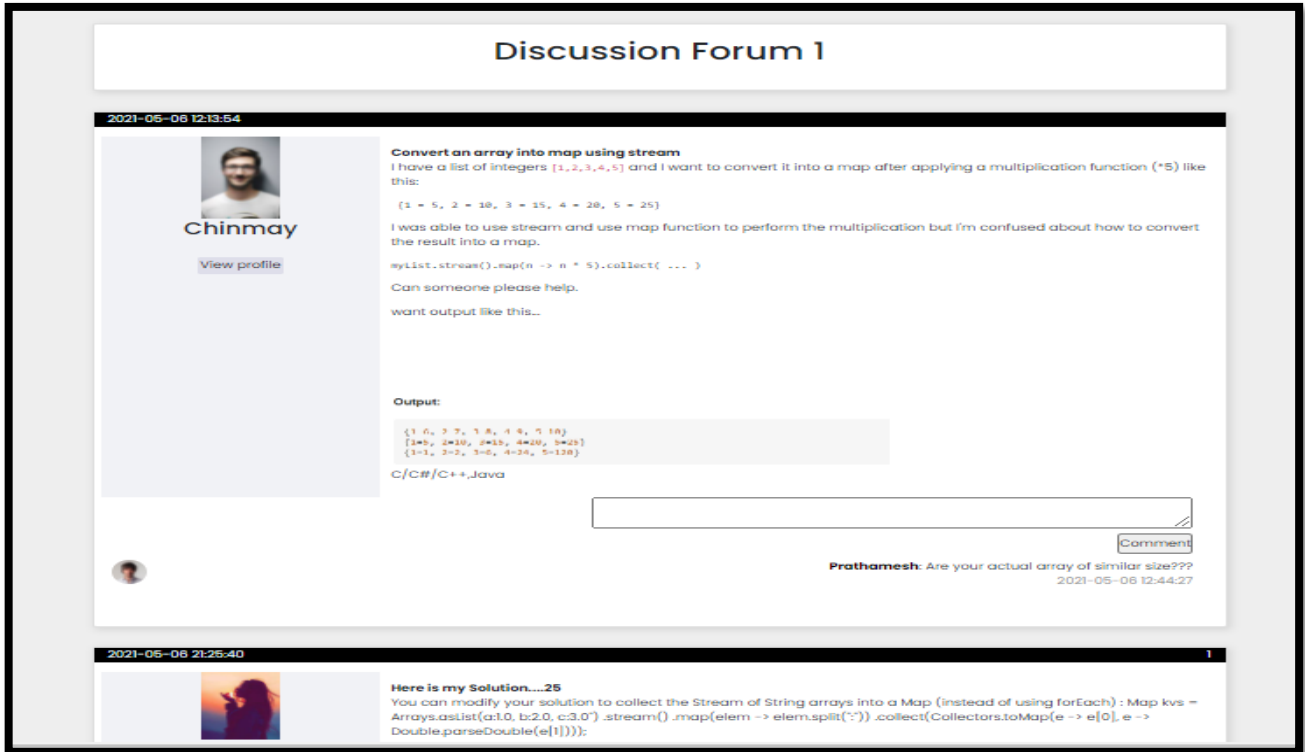


Fig.3.1 Discussion Forum Page

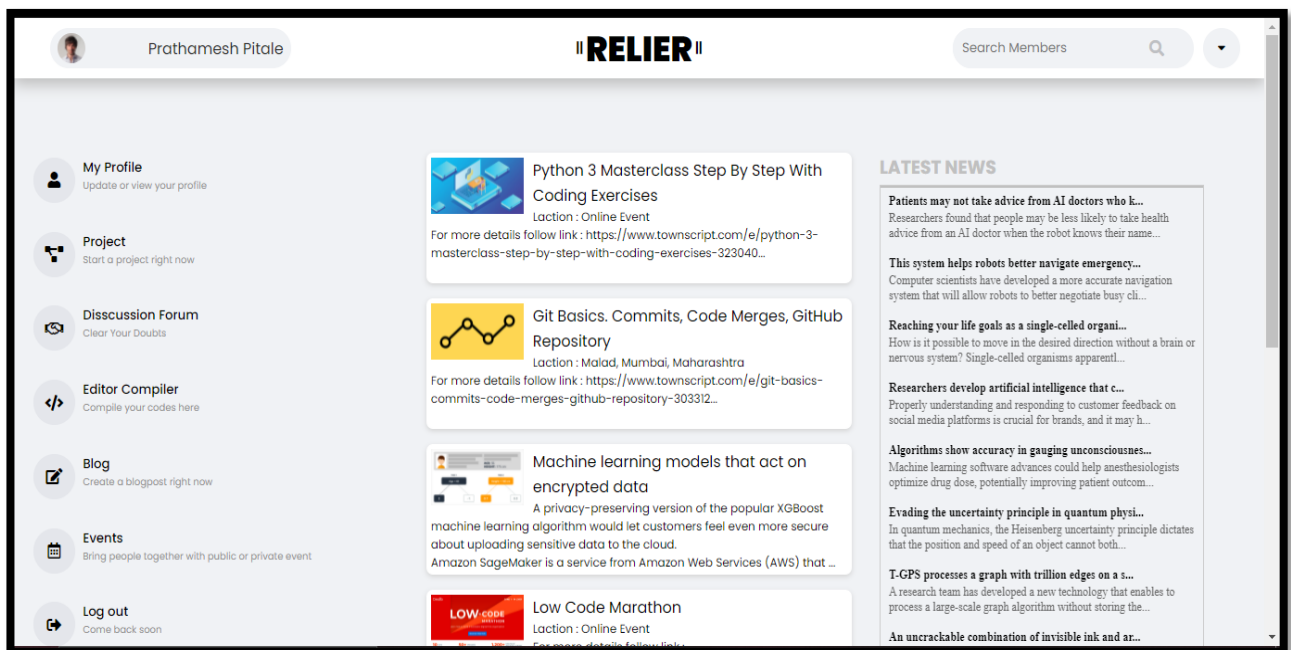


Fig.3.2 Home Page

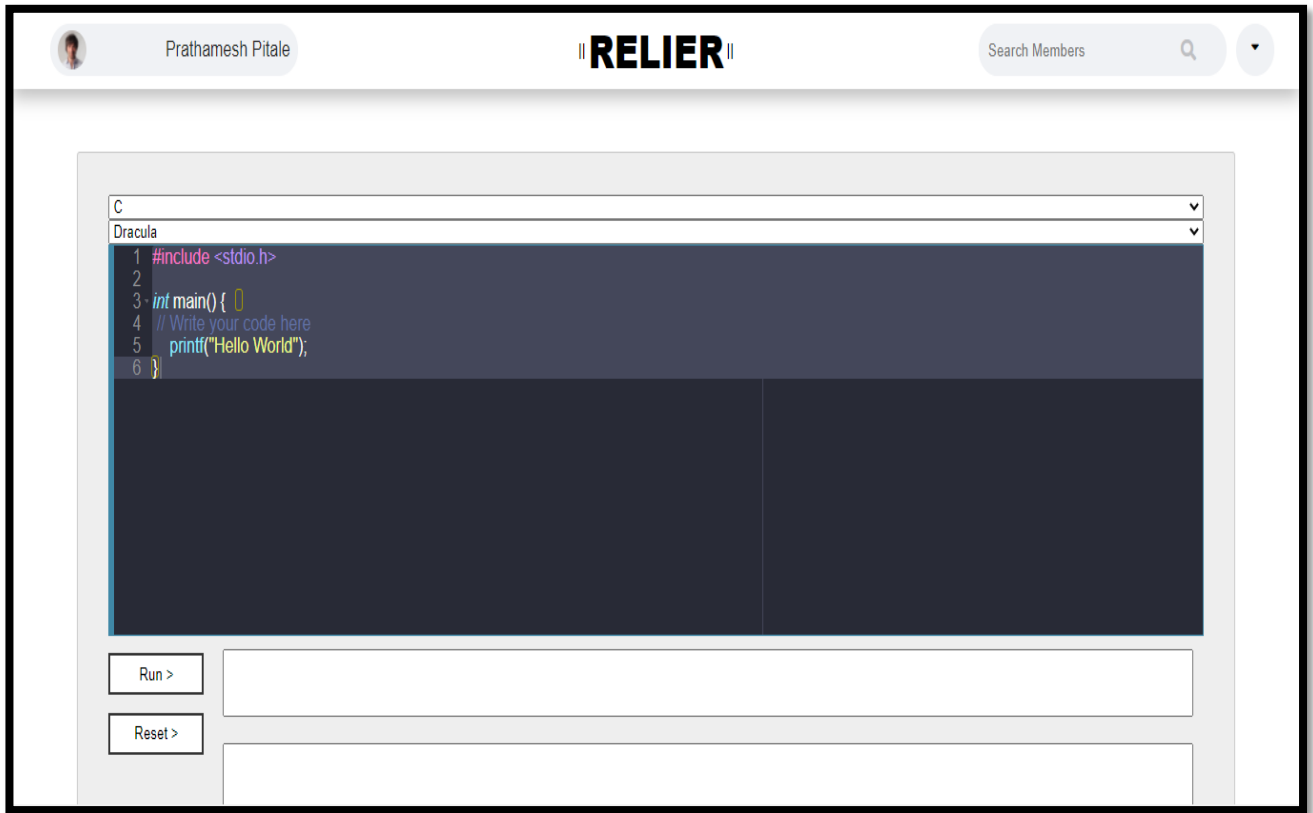


Fig.3.3 Edit & Compile Page

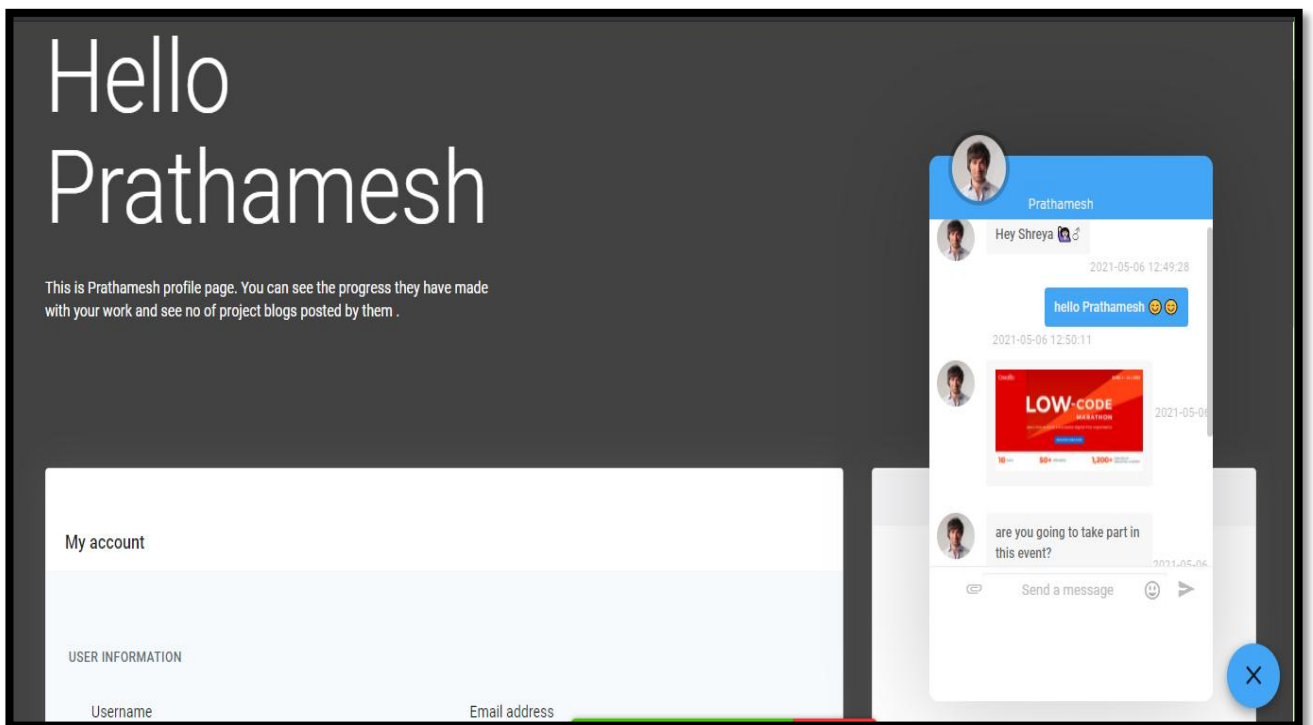


Fig.3.4 User Profile & Chat



IV.CONCLUSION

This platform will be primarily responsible for connecting like-minded individuals interested in emerging research, to come together, discuss, share knowledge and socialize thereby truly making an international family of inventive students helping each other. With this platform, students will be greatly benefitted throughout their project process, from the selection of topics, group activities to the final output. It will also be helpful for them to always stay up-to-date with latest trends and developments in their respective domain. It will help them to know about events of their choice and will be encouraged to attend and learn. It will benefit students to get queries solved in a short time. They can also edit and compile their codes, in multiple programming languages, anytime removing hardware dependencies.

V.ACKNOWLEDGEMENT

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