International Scientific Journal of Engineering and Management
Volume: 02 Issue: 07 | July – 2023
DOI: 10.55041/ISJEM01051
ISSN: 2583-6129
www.isjem.com
An International Scholarly || Multidisciplinary || Open Access || Indexing in all major Database & Metadata

STUDENT COMMUNITY LEARNING PLATFORM

Aakash A Nair Computer Science & Engineering
Adi Shankara Institute of Engineering & Technology
Kalady, Kerala, India
aakashnair2001@gmail.com

Abhijith V Manoj Computer Science & Engineering
Adi Shankara Institute of Engineering & Technology
Kalady, Kerala, India
abhy.manoj@ieee.org

Aishwarya Baiju Computer Science & Engineering
Adi Shankara Institute of Engineering & Technology
Kalady, Kerala, India
aishwaryabaiju_237@ieee.org

Asst. Prof. Neetha K Nataraj
Computer Science & EngineeringAdi Shankara Institute of Engineering & TechnologyKalady, Kerala, India
neetha.cs@adishankara.ac.in

***Abstract*- The main aim of this survey paper is to study and figure out the various methods and functionalities to implement an online platform where students of a particular college can share their projects and research done on any particular technology over a secure network which is locally hosted and is accessible to students and staff of a particular institution. The motto behind the project is to help build an interactive student/staff community where each user is able to showcase their talents and knowledge gained over an online platform. The content that can be uploaded ranges from any personal project, project ideas, blogs on new technology learnt or any research done on any topics. This paper covers the various Filtering algorithms & Server hosting. Towards the end of the paper, the future scopes are also discussed.**

Keywords- Content Filtering, MySQL,PHP, Machine Learning, Student Community, Learning Platform

I. INTRODUCTION

In this paper we detail the survey report from various papers related to the implementation of an online learning platform with knowledge sharing, news on new technologies, connection with alumni of the college which is locally hosted using the college servers. Both students and staff have access to edit their profiles and share valuable content which can only be viewed by other users where they can share their personal information and info about their interested or specialized domain that enables them to connect to them more easily. Students can react to the uploads of other users and download the projects and other details according to his/her needs and can have a touch with the alumni of the college. The user is able to upload his/hers personal projects, and other certified projects as well as tech-blogging and has space to display research work and shareable information related to technology. Applicable to all departments across college as it showcases anything innovative that can be put forward for other department students to access.

With the implementation of such a platform.The main advantages are for the students as it helps them to refer to works done in the past as well as to connect with the students who own the content for any further queries and doubts. The main objective of the project is to build up a community platform for a college so that the students, faculties and even the college alumni can connect each other, share any technical blogs, showcase their projects and interests in specific domains.Filtering of profiles based on the interest of the user so as to make the searching more easier. A chatbox facility with an automated email notification system so as to maintain or enable personal connections with the interested people in the community. Feature to download and upload technical news and to publish the academic projects

ISSN: 2583-6129
DOI: 10.55041/ISJEM01051
www.isjem.com

as well as the personal projects by any of the users so that the people could view it in public and use it for future references and their upcoming projects. College students could get updates about the alumini's of the college, their current working fields and could connect with them for any help or queries. Suggestions of profiles of the users in the particular domain could be available to a specific user who is currently searching details in that particular domain. Fractions like the uploads in the platform option could increase the popularity of the post so as to reach more and more users. Considering it to be college specific, it keeps data private and innovative ideas admits the college and helps prevent data leakage.

II. LITERATURE SURVEY

1. An improved content based filtering algorithm for movie recommendations

Recommender system comprises two prime methods which help in providing meaningful recommendations namely, Collaborative Filtering algorithm and Content-Based Filtering.
In this paper, we have used a hybrid methodology which takes advantage of both Content and Collaborative filtering algorithms into account. The algorithm discussed in this article is different from the previous work in this field as it includes a novel method to find the similar content between two items. The paper incorporates an analysis that justifies this new methodology and how it can provide practical recommendations. The above approach is tested on existing user and object data and produced improved results when compared with other two favorite methods, Pure Collaborative Filtering, and Singular Value Decomposition.The proposed algorithm takes into consideration the tags and genres specified in the dataset, and for the content-based prediction, we have applied a set matching comparator.
This comparator returns the number of common objects between two movies. The term object here refers to tags and genres. For each particular movie, the tags and genres are merged into a single set. This gives us a bulky content for each movie, and the more the content the better the predictions. After getting the set of common objects, the weight of each set for a movie is calculated. Once the weights are assigned to each of the sets, they are then used to provide the ratings of the unrated movies using the rated movies which were previously compared. In our methodology first, the tags for each movie assigned by different users are used and converted into a single list. The genres for each movie are appended to the same list of tags. This final list is referred to as the objects for a particular movie. The object set for each active movie is compared with the object set of every other movie in the dataset and the number of matching objects is assigned to a set.

2. A New PHP Web Application Development Framework Based on MVC

Hypertext Preprocessor (PHP) web application frameworks have become significantly popular in web development, by providing built-in libraries which could help developers to write codes without writing them from scratch. Because of their popularity, most developers are required to have solid knowledge on using the available frameworks.To create a dynamic and real-time web application, most of the developers use Ajax technology due to what it is capable of. However, most of the existing PHP frameworks do not have built-in Ajax libraries where users need to implement their own Ajax request. Therefore, in this paper, we develop a new PHP web application development framework based on the Model View Controller (MVC) architectural pattern and Ajax technology. The framework itself implements Ajax technology with its built-in library. After conducting this research, we concluded that the new PHP web application framework could be used as a web application development tool to help users to create a dynamic and real-time web application.

3. Real time mailbox alert system via SMS or email

Users find it convenient to be on alert of mails they receive to overwrite the conventional method of checking mailboxes. Because of the high confidentiality and official letters are increasing as a corresponding tool globally, the users seek for a better solution which enables them to be on their toes each time a mail is delivered. The state of the art electronics technology is incorporated into these conventional mailboxes as a solution. The programmable logic controller, interface module and the GSM modem can be incorporated by linking the user silas mailbox with short messaging system or email facilities and this enables the users to be notified whenever a new mail is delivered. Mails delivered into the users mailbox, the system will automatically generate an alert which is sent in the form of a short message system or email that typically details the real time of mail delivery.The system is designed to ease human life by sending short messaging systems or email to notify the users about important new mails reaching their mailbox.

4. A survey on RDBMS and NoSQL Databases MySQL vs MongoDB

Two most ordinarily utilized database database types are SQL and NoSQL databases. The key idea of the SQL database is that the SQL database is the main Table based for example Social Database (Relational DBMS).This paper covers ACID property which is followed by SQL and CAP theorem which is used by NoSQL.The primary focus of this survey is to compare the relational databases and NoSQL Database. This covers the properties, types, differences, limitations and query processing. Also specifically we represent MySQL for relational databases and MongoDB for NoSQL databases. Both MySQL and MongoDB have their advantages and limitations. By these comparisons, we can conclude that the relational database might be a great choice if you have structured data and need a traditional relational database. If you have unstructured and/or structured data with the potential for rapid growth then NoSQL will be the better choice.

5. The Research of PHP Development Framework Based on MVC Pattern

PHP is one of the leading web development languages, however,the development model of existing PHP organizes without a structure, which mixes the code of data access, the processing of business logic ,and web presentation layer together, as a result, it brought about many problems in the web applications, meanwhile, it could not meet the rapid development of web apply any more.In this paper, a implementation of PHP based on MVC design patterns - FDF framework was provided for PHP developers, which can offer a framework for web applications, separate the data, view and control of web applications, afford to achieve loose coupling, thereby enhanced the efficiency, reliability, maintainability and scalability of application development. MVC design pattern is a proven effective way of the generation of organized modular applications. As a design pattern, MVC is common to split an application into separate layers that can be analyzed, and sometimes implemented, separately.
By decoupling models and views, MVC helps to reduce the complexity in architectural design and to increase flexibility and reuse of code.
This study proposes a development framework of PHP based on the MVC design model, which might be an effective separation of data access, logic processing and user interface, and thus it could promote the efficiency and quality of PHP development.Indexes consume disk space – an index occupies its own space, so indexed data will consume more disk space too; Redundant and duplicate indexes can be a problem – MySQL allows you to create duplicate indexes on a column and it does not "protect you" from doing such a mistake.

6. Software Architecture for Adaptation and Recommendation of Course Content and Activities Based on Learning Analytics

This paper presents a software architecture for adaptation and recommendation of course content and activities based on learning analytics. It is composed of layers for ingestion layer, aggregation layer, storage layer and big data processing and analyses layer. An algorithm for prediction of student learning based on machine learning for processing and analysis of data and knowledge discovery with respect to main learner and teacher activities is presented. The proposed algorithm for student learning classification is implemented by using the Averaged Perceptron method. Experimental results are presented and discussed.The purpose of the study is to apply the software architecture on learning analytics by practical experiments for specific case study identifying event elements in sequenced learners' and courses' activities logs, and student learning prediction.In order for the analysis engine to provide guidance, it will use the available information base for each user as well as aggregate statistics on the behavior of a learner group. The information will be retrieved from the repository, and the machine will analyze and generate personal Recommendations.

7. Optimizing MySQL database system on information systems research, publications and community service

This paper demonstrates MySQL is the most trusted and depended-on open source database platform in use today. Many of the most popular and highly-trafficked websites in the world are built on MySQL because of its ubiquity across heterogeneous platforms and application stacks and for its well-known performance, reliability and ease of use.Research, publications and community service is one activity that is managed by the Institute for Research and Community Service. The process of managing these activities today cannot be separated from the Internet, therefore we need a system that can manage every activity. To obtain the proper management it needs a system that is supported by the database system is also good. This paper discusses how to conduct the process of optimizing the database system so that when the data is accessed does not affect the performance of server systems. Process optimization is done on the design of the database system. Database design plays an important role in determining system performance. Process optimization is done in this study by using one of the functions that have been given in MySQL by using VIEW.

ISSN: 2583-6129
DOI: 10.55041/ISJEM01051
www.isjem.com

8. Selection of Cloud Service Providers for Hosting Web Applications in a Multi-cloud Environment

This paper addresses the CSP selection problem for multiple applications in a multi-cloud environment comprising multiple criteria. It provides a holistic solution methodology that ranks the CSP combinations for each web application using a multiple-criteria decision-making (MCDM) technique. The solution methodology takes virtual machine and cloud centerselection into consideration for ranking the CSP combinations.However, selecting the top ranked CSP combinations for all applications may not be a viable option from the manageability and budget perspectives. Hence, we propose an optimization model to select CSPs for multiple applications of an enterprise considering budget and rank. We demonstrate our methodology through numerical experiments and provide various insights.A holistic methodology for CSP ranking. Consideration of DR regulations while solving the CC selection decision model.The VM selection and CC selection models provide input to the MCDM method for ranking the CSP combinations.An optimization model to select CSPs for multiple applications with restrictions on budget.

9. Design and Implementation of a Framework for a Social Network Application

The proposed framework implements the model view-controller (MVC) architectural pattern previously presented, it is extremely extensible, customizable and, most important, it's high performance and secure. This pattern will structure the application, avoid multiple implementation, and improve code reusability and the security of the data. All the algorithms and results obtained in this paper are developed and tested using the PHP programming language, with multiple JavaScript AJAX calls to improve the user experience and application flow overall. The best way to manage the code of the developing team is with GIT. It is a distributed version control system, meaning your local copy of the code is a complete version repository, which makes it easy to work offline or remotely from any computer or laptop. All the developer needs to do is commit their work, not before adding the code to the commit and then push it to the server. A commit is a virtual snapshot of all the files at a point in time.

10. Modern Web-Development using ReactJS

Recommender system known as information gathering system aims at creating an algorithm which keeps in consideration the diverse needs and varying level of competence. It offers better opportunities in the project development cycle under requirement phase and design phase. Social media and Ecommerce market has tapped into the recommender system to boost its growth by providing precise results. It provides either service or product recommendation using the information gathered in the software engineering process. It is broadly divided in three categories which are Collaborative, Content-based and Hybrid recommendation approach. This paper presents a model to generate recommendations based on marks of students. It discovers best solutions which would have otherwise remained hidden. The case study performed on the recommender system implementation in college campuses will result in a recommendation in placement of students (employee) to companies (employer) as per their requirements in the shortest possible time. It can be expected as a situation where we have tried to achieve the results while keeping in mind the requirements of employer and employee.

III. METHODOLOGY

The methodology for the student learning web application project involves a systematic approach to its development, implementation, and evaluation. Here is a general outline of the methodology:

1. Requirements Gathering: Begin by understanding the requirements and objectives of the project. Conduct meetings or interviews with stakeholders, such as college administrators, faculty, and students, to gather their inputs and expectations for the web application.

2. Research and Literature Review: Conduct a thorough literature review to gain insights into existing student learning platforms, recommendation systems, collaborative learning approaches, and best practices in web application development. This research will provide a foundation for decision-making and identifying key features and technologies to incorporate into the project.

3. System Design and Architecture: Based on the gathered requirements and research findings, design the system architecture and user interface for the web application. Create wireframes or mockups to visualize the layout and flow of the application. Determine the technologies, frameworks, and databases that will be used.

4. Front-end Development: Implement the front-end of the web application using HTML, CSS, and JavaScript. Focus on creating an intuitive and

International Scientific Journal of Engineering and Management
Volume: 02 Issue: 07 | July – 2023 DOI: 10.55041/ISJEM01051
An International Scholarly || Multidisciplinary || Open Access || Indexing in all major Database & Metadata
ISSN: 2583-6129
www.isjem.com

visually appealing user interface that facilitates easy navigation, project uploads, profile viewing, blog writing, and chat functionalities. Ensure the design is responsive and compatible with different devices and screen sizes.

5. Back-end Development: Implement the back-end functionality of the web application using the chosen technologies such as PHP and Python. Set up the database to store user profiles, projects, blogs, certificates, and chat messages. Implement user authentication and authorization mechanisms to ensure secure access to the application.

6. Content-Based Filtering Algorithm: Implement the content-based filtering algorithm for project recommendations using Python. Define the features, attributes, or tags that will be used for content analysis. Develop a scoring or similarity mechanism to match user profiles with relevant projects. Test and fine-tune the algorithm for accurate recommendations.

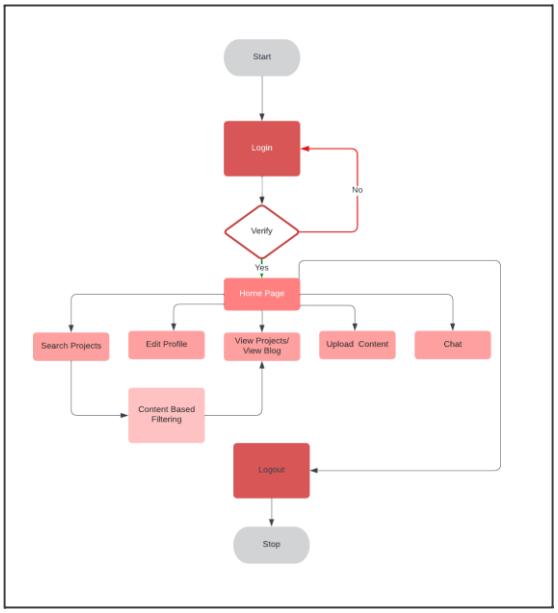
7. Integration and Testing: Integrate the front-end and back-end components of the web application. Perform comprehensive testing to ensure functionality, performance, and compatibility across different browsers and devices. Conduct user acceptance testing to gather feedback and make necessary improvements.

8. Deployment and Launch: Deploy the web application on a server or hosting platform, ensuring it is accessible to the intended users. Set up the necessary infrastructure, such as server configurations, domain mapping, and SSL certificates, to ensure a secure and reliable deployment. Communicate the launch of the application to the college community.

9. User Training and Support: Provide training and documentation to users on how to use the web application effectively. Offer technical support channels for users to address any issues or queries they may have. Gather user feedback and incorporate necessary enhancements or bug fixes based on user reports.

10. Evaluation and Iteration: Continuously monitor and evaluate the usage and performance of the web application. Collect user feedback and conduct surveys or interviews to assess user satisfaction, engagement, and the achievement of project goals. Use the feedback to iterate and enhance the application over time.

FLOW DIAGRAM



IV. IMPLEMENTATION

The implementation of the web application involved the follows steps:

1. Requirements Gathering:
- Identify the key stakeholders, such as college administrators, faculty, and students.
- Conduct meetings or interviews to gather their requirements and expectations for the web application.
- Document the functional and non-functional requirements, including features, user roles, and desired outcomes.

2. System Design and Architecture:
- Design the system architecture, considering factors like scalability, security, and performance.
- Create wireframes or mockups to visualize the user interface and navigation flow.
- Define the database schema and relationships between entities like user profiles, projects, blogs, and certificates.

3. Front-end Development:
- Develop the user interface using HTML, CSS, and JavaScript.
- Implement the different pages and components based on the wireframes.
- Ensure the design is responsive and compatible with various devices and screen sizes.

ISSN: 2583-6129
DOI: 10.55041/ISJEM01051
www.isjem.com

4. Back-end Development:
- Choose the appropriate back-end technologies like PHP and Python for server-side development.
- Implement the server-side logic for user authentication, authorization, and session management.
- Set up the database and implement the necessary CRUD (Create, Read, Update, Delete) operations for managing user profiles, projects, blogs, certificates, and chat messages.

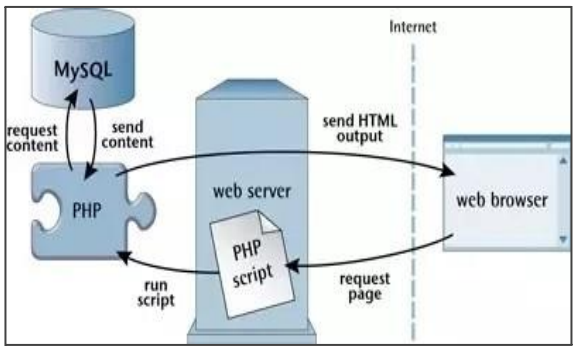
5. Content-Based Filtering Algorithm:
- Define the features, attributes, or tags that will be used for content analysis.
- Implement the content-based filtering algorithm using Python.
- Develop a scoring or similarity mechanism to match user profiles with relevant projects.
- Test and fine-tune the algorithm to ensure accurate recommendations.

6. Integration and Testing:
- Integrate the front-end and back-end components of the web application.
- Perform unit testing to verify the functionality of individual components.
- Conduct integration testing to ensure smooth interaction between different modules.
- Test the application across different browsers, devices, and screen resolutions to ensure compatibility.

7. Deployment and Launch:
- Set up the hosting environment, server configurations, and domain mapping.
- Secure the application with SSL certificates and implement necessary security measures.
- Deploy the web application to the production server or hosting platform.
- Conduct final tests to ensure the application is functioning properly in the live environment.

8. User Training and Support:
- Provide training materials or documentation on how to use the web application.
- Conduct training sessions for users to familiarize them with the features and functionalities.
- Set up support channels (e.g., email, chat, or a helpdesk system) to address user queries and issues.

9. Evaluation and Iteration:
- Monitor user engagement, feedback, and performance of the web application.
- Collect user feedback through surveys or interviews to assess user satisfaction and identify areas for improvement.
- Regularly update and enhance the application based on user feedback and emerging needs.
- Conduct periodic maintenance and bug fixing to ensure the smooth operation of the application.



V. TOOLS & SOFTWARE

Tools and software used in the development of a student community learning web application:

1. Integrated Development Environment (IDE):
   Visual Studio Code: A popular free andopen-source code editor with built-in support for HTML, CSS, JavaScript, PHP, and Python. It offers a range of extensions for enhanced development experience.

2. Front-end Development:
   HTML and CSS: Standard markup and styling languages for structuring and presenting the user interface of the web application.
   JavaScript: A programming language used to add interactivity and dynamic behavior to the front-end components.
   Bootstrap: A CSS framework that provides pre-built responsive components and layouts, making it easier to design a visually appealing and mobile-friendly interface.

3. Back-end Development:
   PHP: A widely used server-side scripting language for web development. It integrates well with HTML and supports various frameworks like Laravel and CodeIgniter.
   Python: A versatile programming language with extensive libraries and frameworks. It can be used for implementing the content-based filtering algorithm and integrating with the back-end.

ISSN: 2583-6129
DOI: 10.55041/ISJEM01051
www.isjem.com

4. Database Management:
   MySQL: A popular open-source relational database management system that can be used for storing and managing user profiles, projects, blogs, certificates, and chat messages.
   phpMyAdmin: A web-based tool for managing MySQL databases, providing an intuitive interface for creating, modifying, and querying the database.

5. Version Control:
   Git: A distributed version control system that helps track changes to the source code. It enables collaboration, allows for easy branching, and provides a history of code modifications.
   GitHub: A web-based hosting service for Git repositories. It provides version control, issue tracking, and collaboration features, making it easier to manage and share code with team members.

7. Testing and Debugging:
   Chrome DevTools: A set of web developer tools built into the Google Chrome browser. It allows developers to inspect and debug HTML, CSS, and JavaScript, test responsive designs, and analyze network performance.
   PHPUnit: A unit testing framework for PHP, used to write and execute tests for the back-end components.
   Selenium: An open-source framework for automating browser interactions and testing web applications. It supports multiple programming languages, including Python, and can be used for end-to-end testing.

8. Deployment and Hosting:
   Apache: Web servers commonly used for hosting PHP and Python applications.
   Railway: A cloud platform that simplifies the deployment of web applications. It supports PHP and Python, providing easy scaling, deployment automation, and monitoring capabilities.

VI. RESULT & ACCURACY

The result analysis of the project involved assessing user engagement, feedback, and satisfaction. Additionally, the effectiveness of the content-based filtering algorithm, chat functionality, and certificate management was evaluated. Performance, bug tracking, and user adoption were monitored to ensure a stable and valuable application.
The result analysis of the student learning website indicates positive outcomes in terms of user engagement, satisfaction, and the effectiveness of the implemented features. Users actively engaged with the website, as evidenced by high logins, frequent interactions, and prolonged usage duration. The availability of profile creation, project uploads, blog viewing, and certificate access contributed to a comprehensive user experience.Feedback from users indicated high satisfaction levels, with positive reviews highlighting the ease of use, relevant project recommendations, and the ability to connect with peers through the chat feature.The content-based filtering algorithm successfully provided accurate project recommendations based on user preferences, as validated by user feedback and comparison with user ratings.The website's stability and performance remained consistent, with minimal reported downtime and responsive page loading times. The implemented security measures ensured the protection of user data and maintained user trust.The analysis also revealed areas for improvement, including expanding the project database, enhancing the recommendation algorithm's accuracy, and incorporating additional interactive features to foster greater user engagement.

VII. CONCLUSION

In conclusion, the student learning web application developed for the college provides a platform for students to showcase their projects, view profiles and projects of others, write and share blogs, manage certificates, and engage in real-time chat with fellow students. The project aimed to enhance collaboration, knowledge sharing, and learning among students. Throughout the project, various technologies were utilized, including HTML, CSS, PHP, and Python. The front-end development focused on creating an intuitive and visually appealing user interface, while the back-end implementation involved database management, user authentication, and the integration of a content-based filtering algorithm for project recommendations.The project's scope encompassed user profiles, project uploads and viewing, blogging, certificate management, chat functionality, and personalized project recommendations. The agile methodology was followed, enabling iterative development, continuous feedback, and adaptation to user needs.

VII. FUTURE ENHANCEMENTS

For future enhancements, suggestions included incorporating gamification, social collaboration features, advanced search and filtering options, mobile application development, and machine learning-based recommendations. Personalized

ISSN: 2583-6129
DOI: 10.55041/ISJEM01051
www.isjem.com

learning paths, learning analytics, integration with learning management systems, and accessibility/localization improvements were also recommended.

VIII. REFERENCES

[1]A. Pal, P. Parhi and M. Aggarwal, "An improved content based collaborative filtering algorithm for movie recommendations," 2019 Tenth International Conference on Contemporary Computing (IC3), Noida, India, 2017, pp. 1-3, doi: 10.1109/IC3.2017.8284357.

[2]S. I. Adam and S. Andolo, "A New PHP Web Application Development Framework Based on MVC Architectural Pattern and Ajax Technology," 2019 1st International Conference on Cybernetics and Intelligent System (ICORIS), Denpasar, Indonesia, 2019, pp. 45-50, doi: 10.1109/ICORIS.2019.8874912.

[3] S. K. a. Subramaniam, S. H. b. Husin, Y. b. Yusop and A. H. b. Hamidon, "Real time mailbox alert system via SMS or email," 2007 Asia-Pacific Conference on Applied Electromagnetics, 2007, pp. 1-4, doi: 10.1109/APACE.2007.4603963.

[4]S. Palanisamy and P. Suvidha Vani, "A survey on RDBMS and NoSQL Databases MySQL vs MongoDB," 2020 International Conference on Computer Communication and Informatics , 2020, doi:10.1109/ICCCI48352.2020.9104047.

[5]W. Cui, L. Huang, L. Liang and J. Li, "The Research of PHP Development Framework Based on MVC Pattern," 2019 Fourth International Conference on Computer Sciences and Convergence Information Technology, Seoul, Korea (South), 2009, pp. 947-949, doi: 10.1109/ICCIT.2009.130.

[6]A. Aleksieva-Petrova, V. Gancheva and M. Petrov, "Software Architecture for Adaptation and Recommendation of Course Content and Activities Based on Learning Analytics," 2020 International Conference on Mathematics and Computers in Science and Engineering (MACISE), 2020, pp. 16-19, doi: 10.1109/MACISE49704.2020.00010.

[7]K. I. Satoto, R. R. Isnanto, R. Kridalukmana and K. T. Martono, "Optimizing MySQL database system on information systems research, publications and community service," 2016 3rd International Conference on Information Technology, Computer, and Electrical Engineering (ICITACEE), Semarang, Indonesia, 2016, pp. 1-5, doi: 10.1109/ICITACEE.2016.7892476.

[8]A. Ramamurthy, S. Saurabh, M. Gharote and S. Lodha, "Selection of Cloud Service Providers for Hosting Web Applications in a Multi-cloud Environment," 2020 IEEE International Conference on Services Computing (SCC), 2020, pp. 202-209, doi: 10.1109/SCC49832.2020.00034.

[9]P. Anghelescu and A. -F. Popa, "Design and Implementation of a Framework for a Social Network Application," 2018 10th International Conference on Electronics, Computers and Artificial Intelligence (ECAI), Iasi, Romania, 2018, pp. 1-6, doi: 10.1109/ECAI.2018.8679087.

[10]Sanchit Aggarwal et al. International Journal of Recent Research Aspects ISSN: 2349-7688, Vol. 5, Issue 1, March 2018, pp. 133-137

Aakash A Nair
B.Tech in Computer Science & Engineering
Adi Shankara Institute Of Engineering & Technology, Kalady.
aakashnair2001@gmail.com

Abhijith V Manoj
B.Tech in Computer Science & Engineering
Adi Shankara Institute Of Engineering & Technology, Kalady.
abhy.manoj@ieee.org

Aishwarya Baiju
B.Tech in Computer Science & Engineering
Adi Shankara Institute Of Engineering & Technology, Kalady.
aishwaryabaiju_237@ieee.org