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Subscription Management SaaS-based System

Mujtaba Shaikh[1], Muskaan Shaikh[2], Kaizad Beddingwala[3], Jabin Khan[4], Hrithik Gautam[5], Hamza Khan[6], Zainab Pirani[7]
[1, 2, 3, 4, 5, 6]*Department of Computer Engineering, M.H. Saboo Siddik College of Engineering, Mumbai, India*
[7]*Head of Department of Computer Engineering, M.H. Saboo Siddik College of Engineering, Mumbai, India*

Abstract: ***Btag is a Cloud-Based Web App that is designed to maintain the membership of any subscription-based business. The problem of management is not unknown in the world of business. We have to make sure that such problems are resolved to boost economic growth and to also add more businesses to the grid. Btag software does that for us. We have thought and analyzed through all possible lenses how to build good membership-based software. The system does what it's made for. The system will store the data of all the members. The member data includes the name, Aadhaar number of the user, sex, phone number, email, and status. There are three different statuses of any member which are Enquiry, Active and Inactive. At any given time a member will be in either of these three statuses. Each status denotes certain characteristics that help the business in better management. If the user has come for the very first time then the user will be in the Enquiry mode given the member hasn't paid yet. Once the member pays the status changes to Active. If the member has any dues then the status will change to Inactive. One can also search all the different members in the ecosystem based on different criteria which are as follows status, sex, name, phone number, etc. Based on the data collected by the user and the payment trends. This work also gives us statistics and relevant data which can help a business in driving sales. This will help revolutionize the subscription-based business scenario.***
Keywords: Cloud-Based Web App, Status changes such as Active, Inactive and Enquiry, Sales, Stats & Graphs, Payment trends.

I. INTRODUCTION

Btag is a SaaS-based software application that helps businesses manage, maintain, and track their business activities. It is mainly built for membership-based or subscription-based businesses to keep track of various transactions that go about in any business. The key features and points of the Btag are as follows. Keeps track of all the business-related activities. Provide proper graphs and charts as reports depicting business expenses and sales. Many MSMEs still use offline mode to keep records traditionally known as Khata. These traditional methods not only shunt the growth of these businesses but the user also finds it difficult when it comes to scaling. Our software can be revolutionary for such businesses which are trying to get more efficient. Printing reports, bills, and other data are also provided through this software.

BTAG has 3 major functions:

1) Managing all the members and providing the details whenever required.
2) Track Payments :
3) Stats & Graphs :

A. Managing All The Members And Providing The Details Whenever Required

The managing of members feature handles all the data and operations related to a member. A new user can be created and a check can also be kept on existing users. The search options' responsibility is to allow for a quick search of all the members. All the members will be visible on the home page and to navigate to the inactive members the admin will have to click the inactive button. In this way, all the information about inactive members will be visible.

B. Track Payments

The payment tracking function is immensely the heart and the sole of the system as it supplies data to the managing members and the stats and graphs function. Once the payment is received we can add the payment underneath the name of the respective member. Then will have to enter the mode of payment and the amount to save the payment in the database.

C. Stats & Graphs

Stats and graphs are one of the immensely important features of the system. The admin can check out the stats and graph section and make subsequent business decisions. The graphs will be broadcasted in the reports section. The graphs can be revealed on the basis of the duration of months and years. The report section also showed which members joined information and a pie chart related to the status of the members.

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D. Track Expenses

The admin can easily track the expenses.

One can add expense name, category, the amount spent, date and any comment if required. With the flashcards displayed over the table one can see the sum of the amount of a particular category which makes it convenient for the admin to understand the expenses.

II. RELATED WORKS

1) This paper combines the benefits of cloud functionality with mobile games, and designs and develops game management software. It is based on the SaaS cloud platform. In accordance with business requirements measurement indicators, in order to complete a basic performance evaluation module. The results showed that the system improved sales performance in the sector, and improved employee participation.

2) This paper aims to design and implement a simple prototype of cloud-based SME applications to manage their human resource challenges. The choice of the Employee Information Management System (EIMS) is due to the fact that one of the key challenges for SMEs is human resource management and how to effectively manage job information. The prototype developed in this study is based on the Software as a Service (SaaS) layer framework.

3) The system was designed and developed to replace the traditional job assignment process and as a tool for keeping track of the assigned tasks of each staff member

4) System designed to manage membership data files, employee records, and their related functions. Increasing efficiency and effectiveness, automation, accuracy, user-friendly interface, information availability, communication capacity, maintenance, and cost deduction make the system smarter than the existing system

5) The system aims to provide users in an organization with a simple and efficient mechanism to access, manage and share their information. It provides fundamental document manipulations, synchronization, and sharing functionalities, and considers the support of heterogeneous client devices. This highly facilitates the management of personal documents and improves the efficiency of collaboration among users

6) In this paper, empirical research has been done on key factors influencing the enterprise's technology adoption of SaaS by expanding classic TOE(Technology-Organization-Environment) and with enterprises as the object of study

7) This paper analyzes and concludes the new challenges of SaaSifying web applications, design a series of SaaSified Command for introducing SaaS capabilities to existing web-based applications automatically; and proposes SaaSified Command Set and rules to adapt the variety of both original and SaaSified applications.

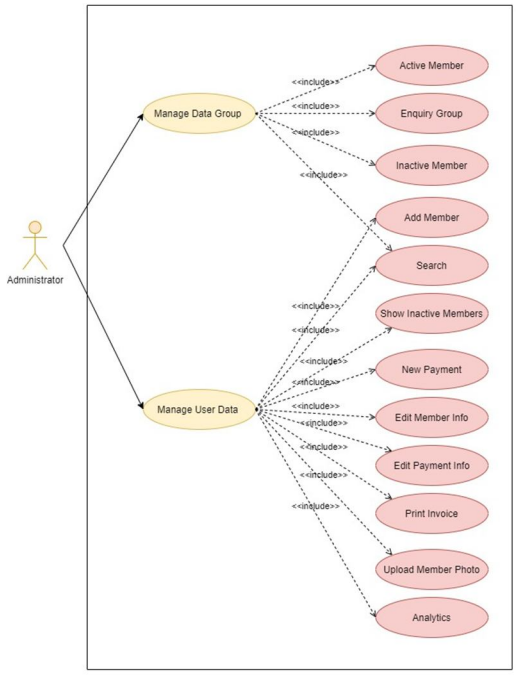


Figure 1: Use Case Diagram

III. SYSTEM ARCHITECTURE

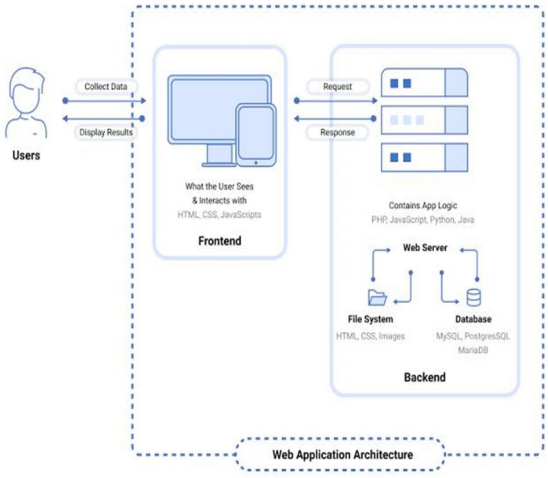


Figure 2: System Architecture

A. Technology Stack

This system is used keeping different technologies in mind and also the user as our first priority. Our main aim is to build a system that is robust and that stands the test of time which also helps us in the scalability of the product and is also beneficial to the user. Here we are using MySQL as the database. This is a very powerful database that helps us in managing our data properly.

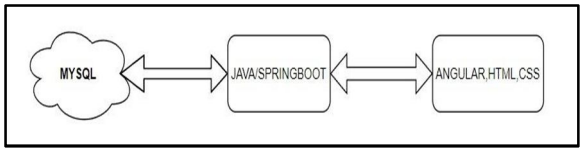


Figure 3: Technology Stack

MySQL due to its ability to store huge volumes of data and can be used as an excellent distributed database was the ideal choice, as the web application would be connected to companies' very own data centers to keep the integrity of their company.

Another technology that we used is Spring Boot. It is an open-source Java-based framework used to create a micro Service. It is developed by the Pivotal Team and is used to build stand-alone and production-ready spring applications. This has been quite helpful with our APIs and also various different functionalities that we have to fulfill. On the other hand, it is quite versatile and easy to understand.

For the front-end, we are using Angular, HTML, and CSS. The creation of the front-end becomes quite easy when we use Angular. The GUI and the entire front-end are made with great precision and better user understanding for easier navigation through our web application.



Figure 4: Interface Design

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B. Design

The UI has been designed in such a way that it is easy to use even if a person is not from a technical background. The layout is simple and easy to use. There are two navigation bars, one at the top and the other on the left side. The top navigation bar provides quick links to different tabs and an id search button, while the navigation bar on the left side contains the different parameters which can be used by the user to get the desired result. The result is displayed in a table which helps to highlight it and keep it in focus. The dashboard shows everything which is required by the user with options for filters. ThisThis makes it easy to view the desired output.

IV. IMPLEMENTATION

The proposed system aims to manage all the users of the organization in one place and also gives insights into the expenses and the revenue generated through the pie, bar, and line graphs. Thus, reducing various factors such as maintaining a diary or book that holds records, having no fear of losing data, and managing everything in one place that too from anywhere in the world. For understanding the system, we can divide it into various modules and understand them.

A. Data Flow

The entire process starts by creating/adding new users from the home page by the admin. Following are the stages of the system:-

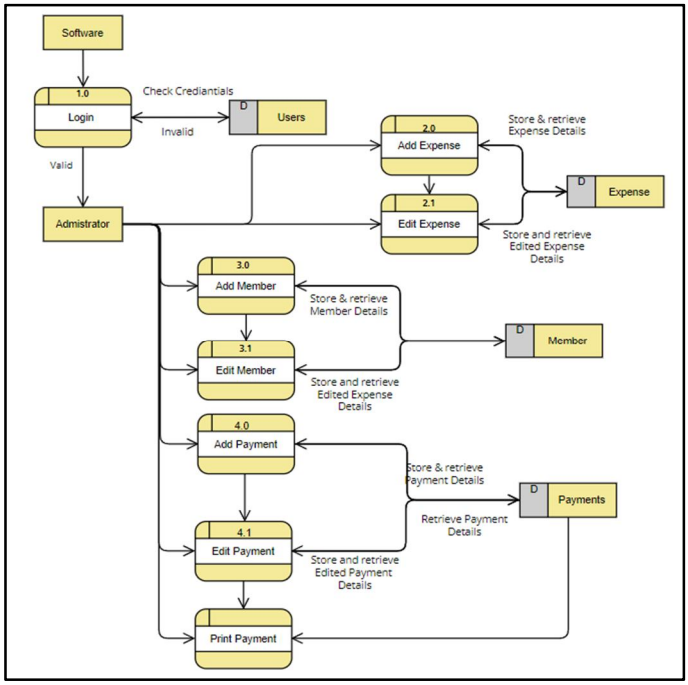


Figure 5: Data Flow Diagram

1) Adding new users: Once the admin is logged in he can successfully start adding new members to the system. The system asks for name, address, gender, mail id, etc to be entered while creating a new entry in the database. The admin can also "Search" any of the members by their "Id" as the Id of the member acts here as our primary key.

2) Our system shows the active/inactive members on the home page itself. The categorization is done on the basis of the payment paid by the users or not to use the service of the respected organization. Here comes the payment module implementation.

3) Adding payment details: Once the user is created its status is inactive. But once you click on the payment processing button which is seen after clicking on the user bar, you are asked to add details such as date, amount, period and after submitting this data, the user status is now active and also you can print the receipt of the payment made and give it to the respected person.

4) Reports module/insights for the organization: The data that is entered while creating a new user is now taken into consideration for showing total revenue and details of the member. Filters for the duration are provided if the organization is interested in knowing data about a particular period.

- The report has been further divided into two sections such as Records and Charts.

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5) Charts: In the Charts section one can see three subsections:

- *Line Graph* - Revenue calculated based on the payment date.
- *Pie Chart* - Displaying the Active and Inactive members.
- *Bar Graph* - Displaying the Activity of members monthly.

6) *Expense Module:* Here the admin can add the amount that is spent on the organization itself eg:- electric bill, utilities, etc. After adding the various amounts for various purposes, the admin will be shown the total amount that is spent on the organization so that he can easily calculate the profit or the loss the organization is going through.

V. SYSTEM ANALYSIS

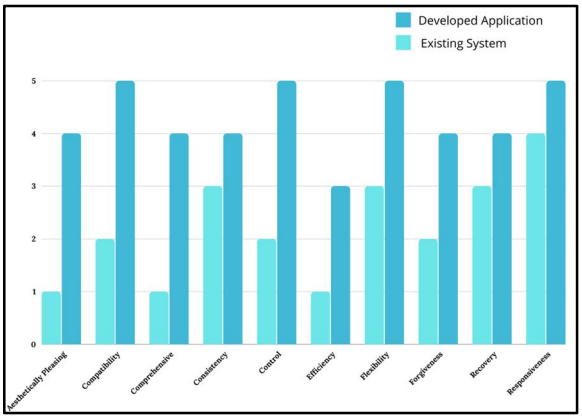


Fig. Comparison b/w Existing and Developed System.

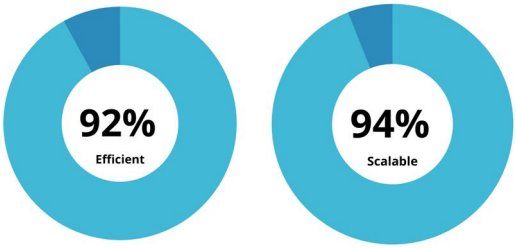


Fig. Efficiency and Scalability parameters

VI. RESULTS

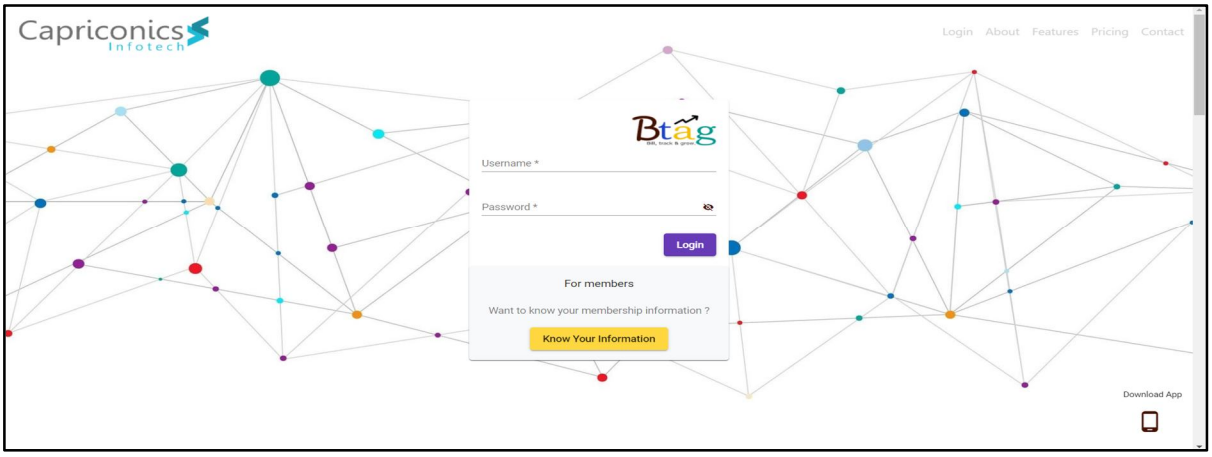


Fig.6.1 Login Page

Here we have displayed the login page where the client can log in using their credentials. The design is sleek and easy to understand with a modern design and a user-friendly interface. The client can log in using their Username and Password.



Fig.6.2 Home Page

The first page after the user logs in is the home page. Here we have displayed all the details of the user such as their status, name, gender, address, picture, payment details and all other relevant details of the user. From here the client can navigate to the Reports, Expenses, and the FAQs section.

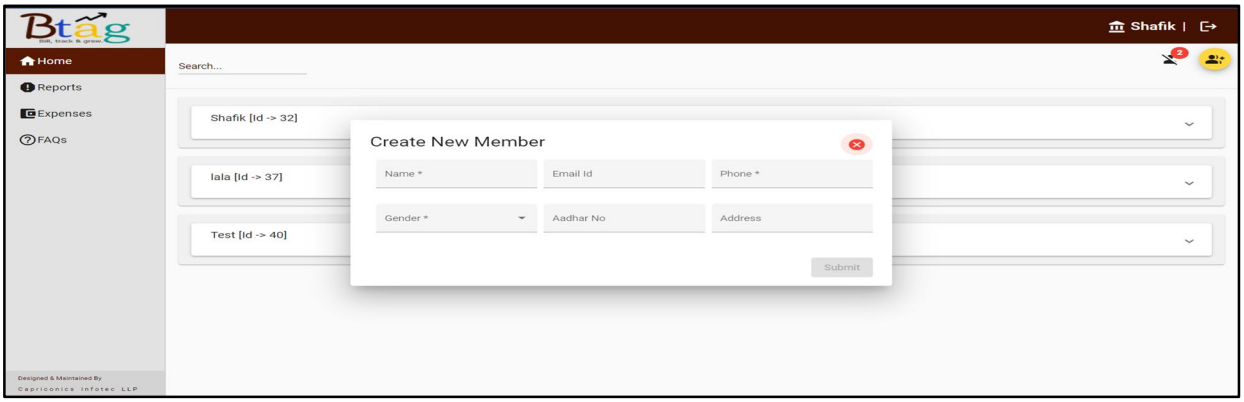


Fig.6.3 Creating new Member

Here the client can create new users and the user will be added to the database and displayed on the home page.



Fig.6.4 Showing Inactive Members.

Btag allows admins to display all inactive members altogether.

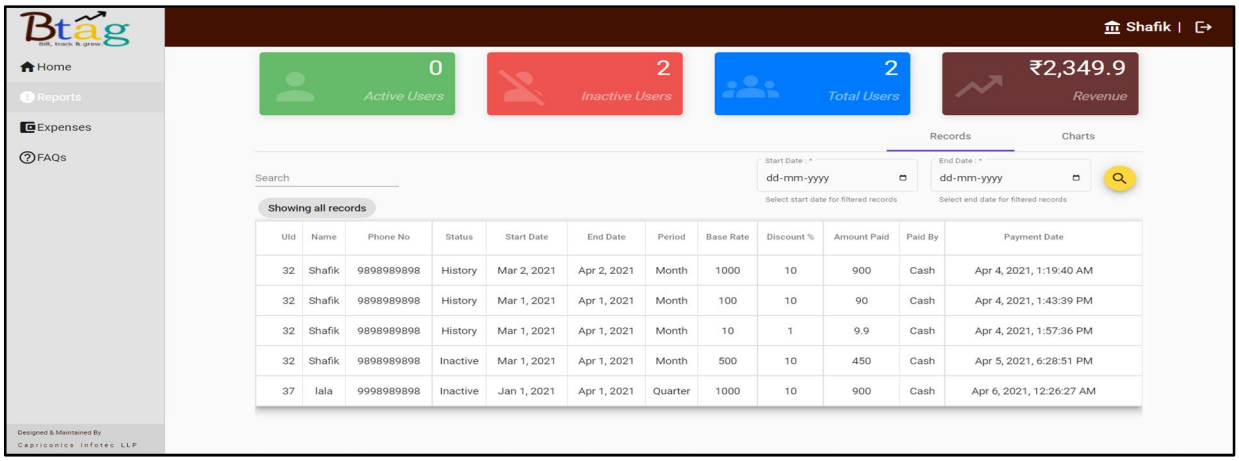


Fig.6.5 Displaying Records

The Records section displays information about all the users by default. Admin can filter the record with respect to start and end dates of membership.

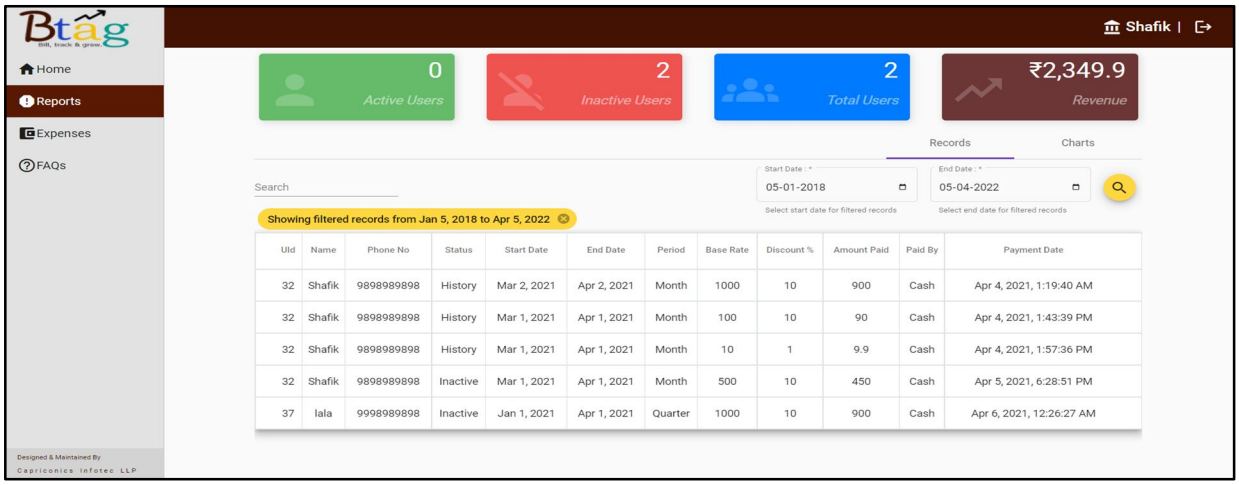


Fig.6.6 Displaying Filtered Records

All the records are displayed in tabular form. Appropriate filters can be applied to get the desired results from the software.

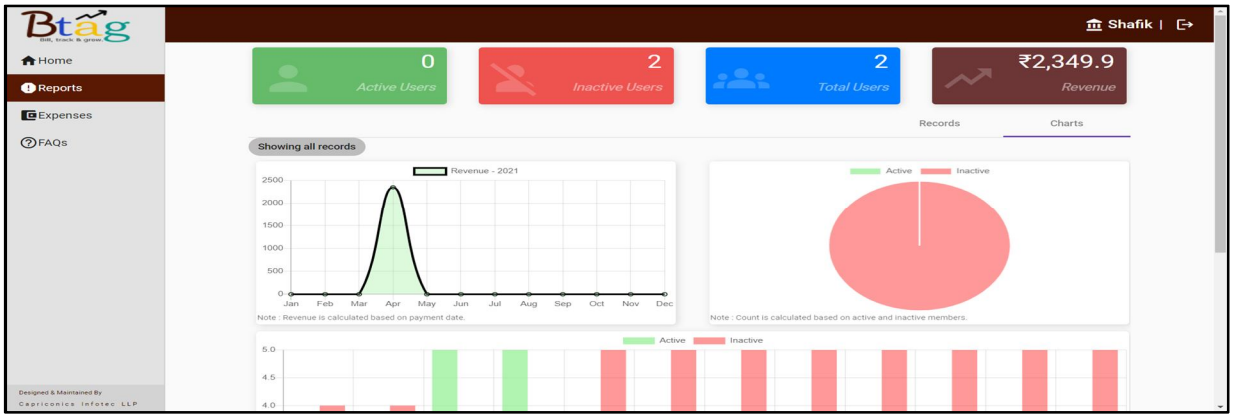


Fig.6.7 Reports Section

An important feature of Btag includes the Reports section where the client can get reports of active, inactive members and revenue generated.

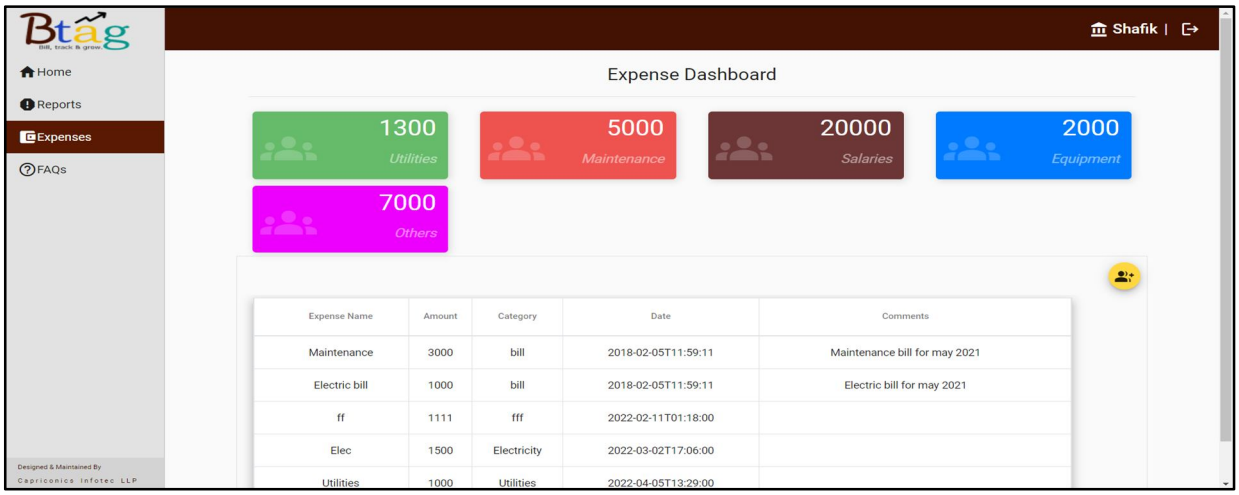


Fig.6.8 Expense Calculation.

BTAG provides us with an insight tab to all of the user's expenditures which are then categorized into five different cards.

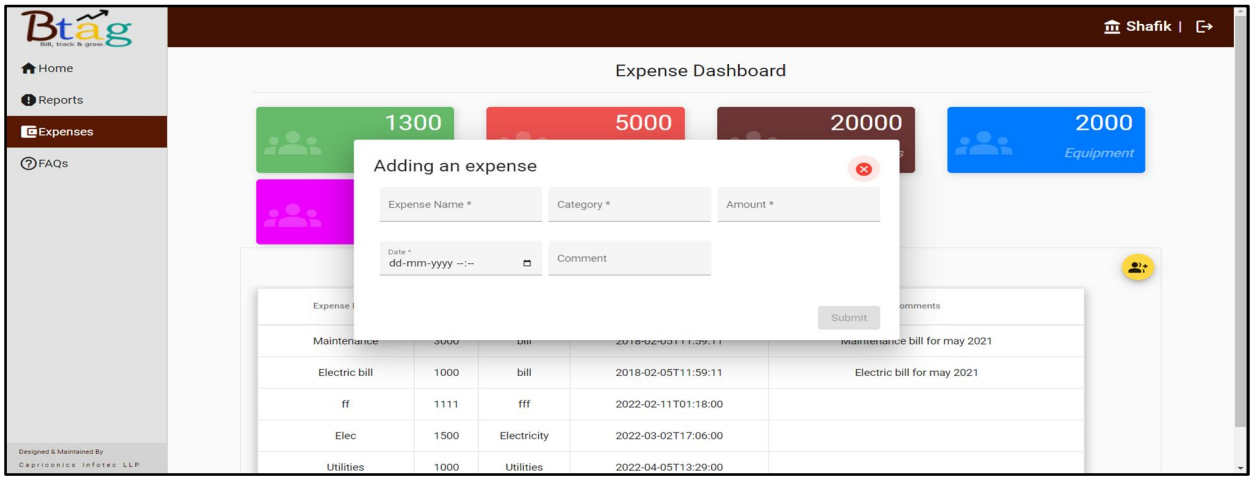


Fig.6.9 Adding an Expense

Admin can add expenses by filling out certain details such as Expense name ,categories such as utilities, maintenance, etc, total amount, date and any comment if required.

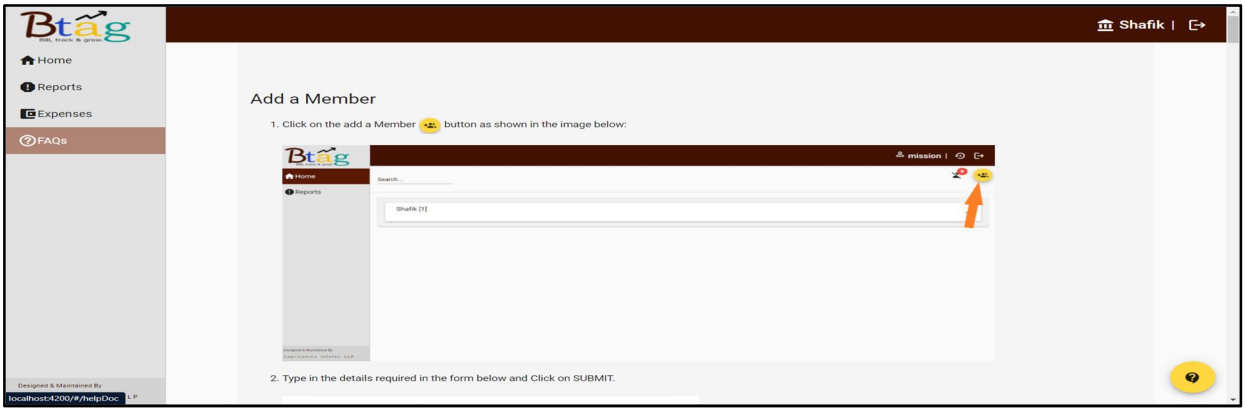


Fig.6.10:FAQ section to help the client know how to use the software

BTAG provides us with the FAQ section as a reference tab to perform the operations provided in the application

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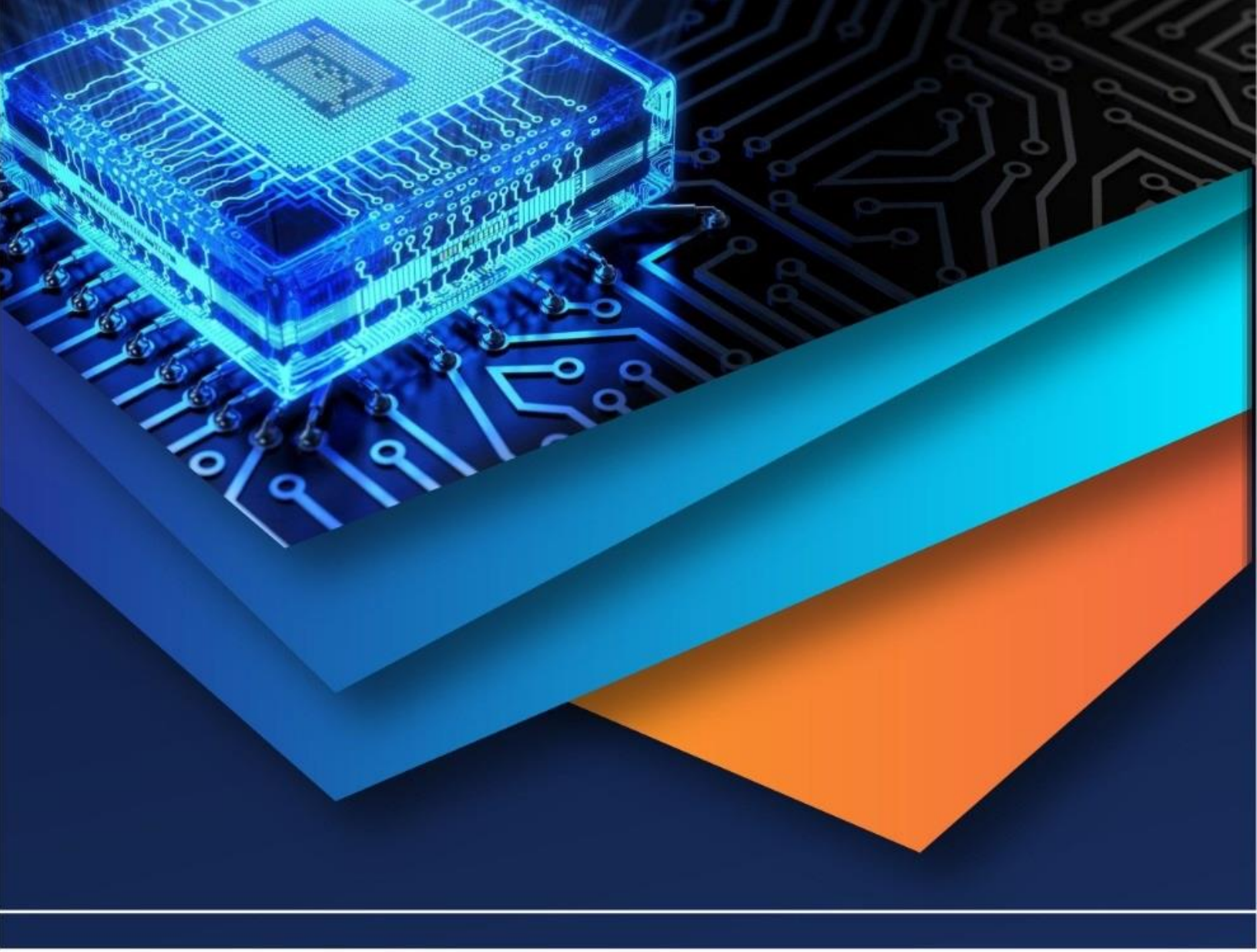
VII. CONCLUSION

We have summarized the entire workflow of our web app and have started implementing all the required modules that need to be completed in order to make our web app fully functional. Modules implemented are Login/signup for our service. Adding/Editing new members whose information needs to be stored in our database and showing details of all members in the dashboard which is on the home page. Added the payment tracking feature and also printed the payment receipt. We have implemented the reports module which provides insights to the organization about their revenue and whether they are still a part of that organization through pie graphs and histogram representation. We have implemented the FAQ module that shows how to use our web app for new clients and implemented the Expense module which will show how much expenses the organization is spending on themselves

REFERENCES

[1] Garg, B. Jan 26, 2019. Angular Architecture Overview.India.
[2] Johnson, R., Hoeller, J., Donald, K., Sampaleanu, C., Harrop, R., Risberg, T., Arendsen, A., ...Deleuze, S.(2004-2016). Introduction to the Spring Framework.
[3] Design and implementation of a membership management system (A case study of university hospital)
[4] A.V. Dinesh Kumar, K Bhargav Ram Rayal, M.Saraswathi-Payment and Charts (3-May-2020)
[5] Membership Management Software, Kindful, 2021
[6] The Daily Egg, The best practices of membership management software, 2021
[7] Ashish Upadhyay, Membership Management Software Capterra, 2021
[8] Stephen Hurrell, Subscription Management, 2021.
[9] Abhishek Singh1, Adithya R2, Vaishnav Kanade3, Prof. Salma Pathan4 - Agile methodology(June -2018)
[10] A. Corallo ; M.Esposito ;A.Massafra; S.Totaro
[11] Mingyi Zhang; Patrick Martin; Wendy Powley; Jianjun Chen(2018)
[12] Stephen Hurrell, Subscription Management, 2021,
[13] Khaoula BRAIKI; Habib YOUSSEF,2019
[14] Membership Management Software, Kindful, 2021.
[15] The Daily Egg, The best practices of membership management software, 2021
[16] Implementation of Subscription Management SaaS-based System, 2022.

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