

# FinanceFit: A Smart Application to Stay on Track with Expert Advice and Insights

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**Abstract:** Technology has impacted us hugely and influenced our daily lives. From connecting with people to gathering information about the smallest of things, technology has been an important aspect of our lives. Thus, technology has proved to be a boon for us. While we use technology for the doing the smallest of tasks, it can also be helpful to us for managing our finances. Most of us students or the people venturing newly into the service/business world struggle with managing their finances and hence it takes a toll on our savings. Using technology to regulate our expenses based on our income can help us manage our finances efficiently and, in the process, increasing our savings. As money has become an important thing in our life, managing and efficiently regulating it can help us lead a smooth and better life. Manually tracking our expenses can be a bit tiresome and difficult, but using technology to manage our expenses based on our income is easier, faster and more effective in our technology-laden lifestyle. We can track our expenses on the go using a mobile whenever we are spending an amount within a certain timeframe. Using technology to get an analysis of our expenses and our income, helps us to see the growth in income and savings while regulating our expenses. It motivates us to increase our savings with time and can help us to lead a better and easy lifestyle. It can also help us to avoid critical financial situations by helping us to minimize unwanted and unexpected expenses. Overall, it can be a great tool to assist us in managing our finances efficiently.

**Keywords:** *finance tracker, expense tracking, consulting, blog, financial sustainability, web application, Django*

## 1. Introduction

Managing our finances manually become a cumbersome task for us and thus this Income Expense Tracker aims to provide an efficient way to regulate our finances in the currency specified by the user. User is able to log in their income and expenses and based on that a report is generated which helps the user to get a glance at their savings and expenses. It generates a visually stimulating report of all financial activities which can be downloaded in a csv/excel format to store the record in offline mode. The user interface of this application is simple, easy-to-use and attractive. In this age, where technology has made the cash flow/ currency flow seamless, people struggle with managing their finances and tend to overspend. These overspending issues not only leads to limited savings but also can lead to debt traps, which makes tracking one's finances necessary to smartly handle expenses. But tracking each and every expense manually is a tough job and can be prone to errors. In addition, there is no such tracking solution present which gives an easy-to-understand analysis of their expenses along with an option to get valuable insights from experienced financial advisors. This application not only provides the user an easy and effective interface to log in their expenses to keep a track of them and provides a summarized view from which their financial situation can be analyzed. In addition to that, this application also contains a blog feature from which the user can gain diversified insights about savings and investment. Users can also avail the consulting services provided by several experienced financial advisors. Consultants have a separate interface where they can create slots according to their availability and set fees for their services. Additionally, consultants can contribute blogs that are visible to users, enhancing

engagement. Consultants also have tools to track their own income and expenses, providing a comprehensive platform for financial professionals to manage their practice efficiently. Overall, this application provides an efficient way to manage one's finances.

## 2. Literature Review

Since trade has been introduced to humans, tracking their expenses has become naturally a habit of humans. Since then, several traditional and technological approaches of calculating our expenses have emerged. Since time immemorial, we have been manually tracking our expenses by writing them down somewhere. Now, several desktop and mobile apps have emerged to facilitate the process. Microsoft Money [1] and Quicken [2] were the first desktop applications that emerged but users were not so familiar with them. Personal capital [3] and Dollar Bird [4] were the applications that used the calendar system to view the user's expenses. QuickBooks [5] was the application for small business owners to track their business transactions. YNAB [6] expense tracker app used automatic tracking via credit or debit cards. However, these applications do not give the user the facility to analyze their data using graphical representations and charts easily. Also, these applications do not give the user the flexibility to log in even minute expenses in their chosen currency. Additionally, these applications do not provide any financial consultant who can help users manage their finances with a proper plan. FinanceFit aims to provide a solution using a simple user interface and by providing a visually stimulating analysis of the user's expenses and also a way to consult top financial advisors and a blog to help the users with several useful finance tips to achieve financial sustainability with the use of technology.

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### 3. Technology Used

A. Django: Django [7] is a Python framework useful for developing complex websites. It is an open-source framework that has extended community support. Django was originally developed for a news-oriented site in Lawrence, Kansas. The Django framework is based on three major parts: model, view, and template.

Model - A model represents a table in the database. The attributes of the model represent the fields of a table in the database. The model helps to define the way data is stored in the database/Django Admin. Views collect data from these models and display it to the user.

View - The view is the short form of the view file. It is a file containing Python functions that take web requests and returns web responses. A response usually consists of HTML or XML documents along with required information from models or a 404 error. URLconf links a view function to its respective URL so that when a request is sent via a URL, the appropriate view function is called.

Templates - A template is HTML or XML file which is actually displayed to the user. The template contains variables and tags. The view replaces the variables with their appropriate value from the models. Tags control the structure of the template. The template basically defines how the data will be displayed to the user.

The model, view, and template together form the MVT architecture of Django. According to the architecture, a user can interact with the Django application using a URL listed in the urls.py. The URL is then passed to the MVT architecture. The URL mapper redirects the request to the appropriate view based on the URL. The View listed in views.py will interact with the Model and retrieve the necessary data from the database via the Model and then will render an appropriate template along with the retrieved data to the user.

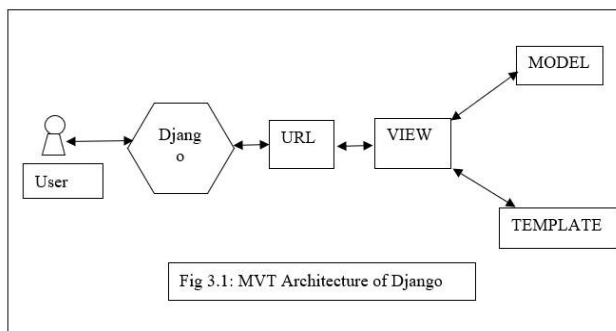


Figure 1. Mvt Architecture of Django

B. HTML: HTML [8] stands for HyperText Markup Language. HTML defines the essential structure of a webpage. It defines how the content will be displayed structurally. As HTML is a markup language, the use of special formatting commands and tags defines how the webpage should be displayed to the user. These tags are represented by angle brackets < >. The textual content is enclosed within these tags. Most tags have their corresponding ending tag which is represented by a / before the name of the tag within the angle brackets. HTML documents are interpreted by a Web Browser by using the HTML code to display the webpage to the user using proper formatting. The first standard HTML specification was 'HTML 2.0' which was released in 1995. Nowadays, HTML 5.0 released in 2001, is popularly used to structure webpages.

C. CSS: The word "data" is plural, not singular. CSS [9] stands for Cascading Style Sheets which helps in making a webpage look beautiful and appealing to the user. While HTML helps in structuring the contents of the webpage, CSS helps in designing and displaying the content in an attractive way. CSS can be linked with the HTML document by creating a different CSS file. CSS can also be defined within the HTML document by enclosing the CSS code within <style></style> tags or by using

inline CSS along with the HTML code. The CSS styling is applied on a priority basis with inline CSS holding the highest priority. CSS can also be used on XML documents. CSS was primarily developed to separate the presentation of the document/webpage from the structural content of the webpage. CSS also helps in increasing flexibility and accessibility in the document presentation and reduces the complexity and repetition of structural content. It also helps multiple webpages to use the same formatting styles at once.

D. Bootstrap: Bootstrap [10] is a front-end framework that is popularly used to develop a responsive and mobile-friendly website. It is an HTML, CSS, and JavaScript framework used for easier and faster web development. It contains various templates to design webpages and their contents. It also contains JavaScript plug-ins. It helps us to create responsive designs. Bootstrap is free to use and has huge community support. The bootstrap framework helps us in rapid and responsive development that is consistent and well-assisted by the development and design community.

E. JavaScript: JavaScript (JS) [11] is a programming language that is primarily used to make the components of a webpage dynamic. Nowadays, JavaScript is used in most of the web-browsers and helps the client-side scripts in interacting with the user. It also helps in controlling the browser and communicating asynchronously. It is also used to alter the contents of the document that is being displayed to the user. JS can also be used in creating desktop applications, game development, server-side programming, and in PDFs. Various JavaScript libraries and platforms built on JavaScript VMs have increased the use and popularity of JavaScript in web applications.

F. jQuery: jQuery [12] is a JavaScript library that helps in simplifying the creation and navigation of web applications. Basically, jQuery helps in simplifying Asynchronous JavaScript and XML (Ajax), HTML Document Object Model (DOM) manipulation, and event handling. Also, jQuery can incorporate JavaScript functionalities by manipulating some CSS properties. jQuery is a widely used open-source JavaScript library and is supported by thousands of user-created plug-ins.

G. Ajax: Ajax (an acronym for Asynchronous JavaScript and XML) is not a single technology but a group of interrelated web development technologies which is useful in creating asynchronous web applications. Ajax helps web applications to send and retrieve data to and from a server asynchronously in the background, without interfering with the display and behaviour of the existing displayed webpage. Although the name stands for Asynchronous JavaScript and XML, JSON (JavaScript Object Notation) is often used instead of XML. Also, the requests being asynchronous is not necessary. Along with HTML and CSS being used to display content in an appealing manner, JavaScript is used to access the DOM to display data dynamically and allow the user to interact with the information provided.

H. PostgreSQL: PostgreSQL [13] is an open-source object-relational database management system renowned for its flexibility, dependability and robustness. It is also known as Postgres. It supports a variety of data formats like arrays and JSON, advanced SQL features, and complicated queries. The extensibility of PostgreSQL enhances its versatility by enabling users to construct new functions and data types. It provides many indexing strategies for optimal speed and is completely ACID-compliant, guaranteeing transaction integrity. PostgreSQL provides robust security features that make it ideal for a variety of applications, including data warehousing, geographic databases, and web development.

I. Zoom API: The Zoom API [14] is mostly used to developers to integrate the various features of Zoom (a video conferencing platform) into their applications. The features include user management, meeting scheduling, chat window and so on. Zoom API allows you to set webinars for scheduling, handling user accounts, creating, altering and removing meetings and viewing cloud recordings. The API allows for secure authentication using OAuth 2.0 and enables task automation thereby enabling efficiency and collaboration in multiple domains (e.g., business, healthcare, education). Zoom's features can be used by applications that enable seamless virtual communication and customized user experience.

J. Razorpay API: With Razorpay API [15] developers can integrate their applications with secure and simple payment options that accept multiple forms of payment like net banking, UPI, and credit/debit cards. It comes with several functionalities such as processing refunds, recurring payments through subscriptions, creating and managing orders and collecting payments (most used feature). The API uses webhooks to ensure real-time notifications on payment events and secure transactions according to PCI DSS. Comprehensive reporting and analytics enables easy tracking and reconciliation of transactions by the developers. For e-commerce, SaaS or other online businesses that need reliable payment processing capabilities along with financial management features the Razorpay API is appropriate.

K. CKEditor: The strong, user-friendly and easily customizable rich text editor known as CKEditor [16] helps developers to include a robust text-editor with various formatting options in their online applications. It has extensive support for media and picture embedding, collaborative editing features, and text formatting capabilities. Editor experiences may be customized to suit specific use cases thanks to its comprehensive configuration options and plugin system. Moreover, it has strong content management features like real-time collaboration and version control. Blog platforms, content management systems, and any web application needing sophisticated text editing features will find CKEditor to be both secure and scalable

## 4. Methodology

This project is a collection of interrelated applications in Django. These apps were created using the command: `python manage.py startapp 'app_name'`. The different applications were created to facilitate different functions of the project 'Income Expense Tracker' and to organize the project in a way that it is easier to debug and incorporate new features later on. The applications in this project are: authentication, advisor, expense, userincome, userpreferences. PostgreSQL [13] is used as a database for this application. The login page of the application offers two options for new users: one for regular users accessing consulting and expense tracking services, and another for verified Financial Consultants. As a new regular user, one needs to register himself in the application by providing a unique username, email address and password. A verification email will be sent to his email address with a verification link. When the user clicks on the link, he will be directed to the login page and he can now log in to the application using the credentials he provided during registration. Without verifying himself, user will not be able to log in to the application. After the user logs in he will be taken to the expense dashboard. The user can now log in the expenses by filling out a form. The user is also able to edit and delete the expenses. The user is also provided with a feature to download the data that was saved on the application in an excel or csv format. The income dashboard contains similar features that the user can use to track the income from various sources. The user can set his currency preference from the user settings menu. Another interesting feature that the user has access to is the Financial Blog section where the user can read and gain insights from articles written by experienced consultants on the platform. The user can also book various free and paid consulting services with top financial advisors / consultants registered with FinanceFit. The user can do so by clicking the consultancy option in the side menu which will direct the user to a page where various consulting services are listed. For paid consulting, the user will be directed to a payment gateway where the user can pay and book the specified service by the consultant. After using the application, the user can log out from the application by clicking on the log out button on the top navbar. For Financial Consultants to use the application and provide services to customers, they would have to register and get verified from the admin. The process for a Financial Consultant registering on our platform involves creating an account as a consultant which again involves email verification similar to that of a regular user. Upon registration, a detailed form must be completed, which includes providing a prefix, first

name, last name, phone number, email address, years of experience, designations, and highest qualification. Additionally, several documents such as a passport-sized photo, voter card, Aadhar card, PAN card, designation certificate, and CV need to be submitted by consultant. These documents and details undergo verification by the admin team. Once approved, the consultant is scheduled for a meeting to verify their identity. An email notification is sent containing the meeting details and a 'Join Meeting' button for accessing the session directly on our website. If any document is rejected, consultants are given the opportunity to re-submit. Upon approval, consultants gain access to the FinanceFit platform, where they can create consulting slots at their convenience and set fees accordingly. They also have access to tools for tracking and analyzing their incomes and expenses. Consultants can contribute to blogs visible to users, thereby enhancing engagement. Additionally, the admin interface allows the admin team to perform activities like verifying Consultants and their documents, interviewing them to verify their identity and confirming meetings between users and Consultants after users have booked services. Admin privileges include additional functionalities such as Consultant Ranking for monitoring the performance of verified consultants and Consultant Approval for reviewing and approving or rejecting consultant registrations. The admin has the possibility to extend the staff, giving permission to the worker in accordance with his or her position. In addition, the admin team deals with the customer response regarding consultants and has all the rights in the world to blacklist any consultant.

## 5. Results and Discussions

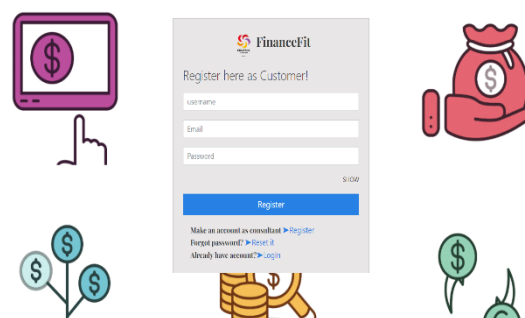


Figure 2. Registration Page for Customers

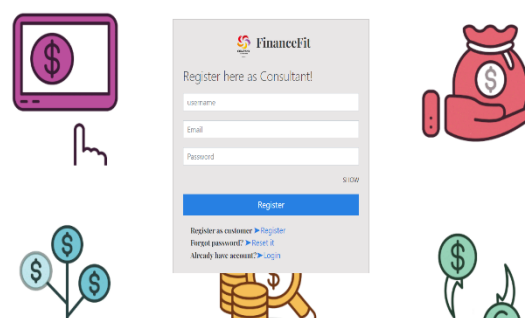


Figure 3. Registration Page for Consultants

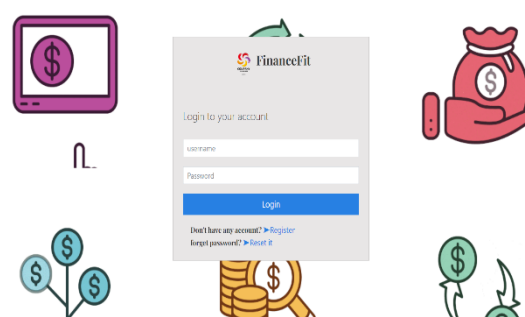


Figure 4. Login Page

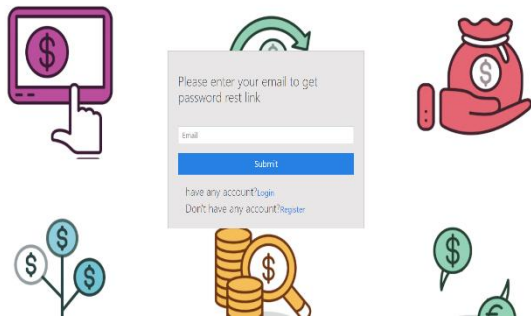


Figure 5. Reset Password

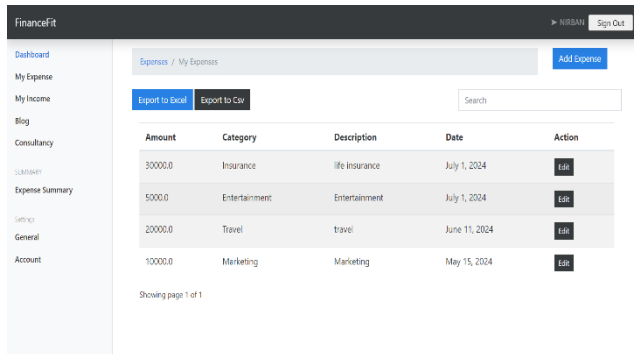


Figure 6. Expense Dashboard

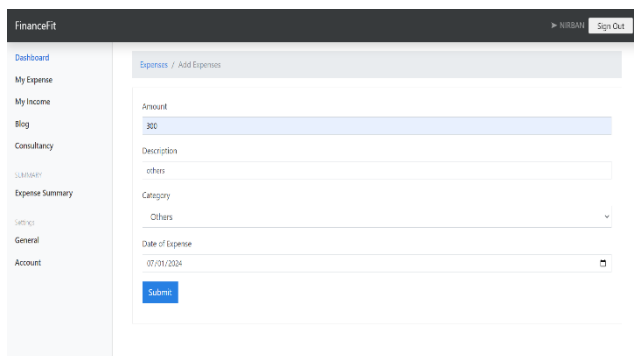


Figure 7. Add Expense Page

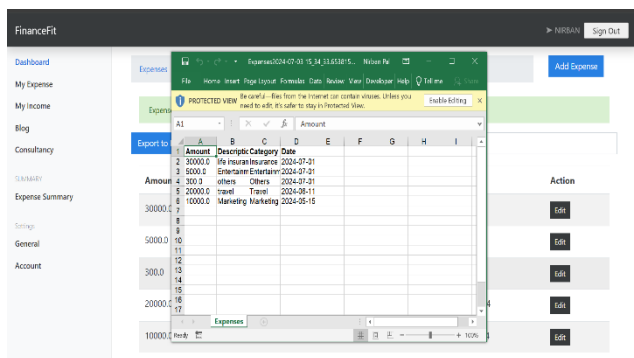


Figure 8. Export Expenses to Excel

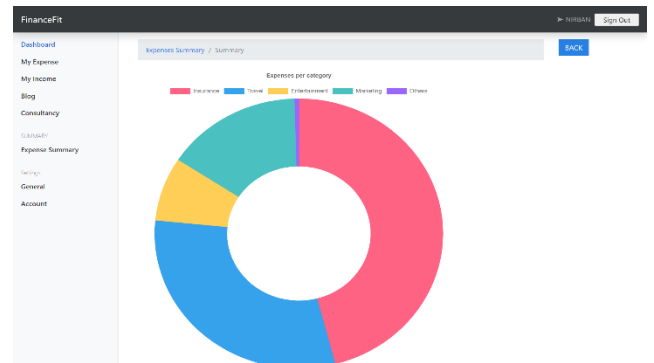


Figure 9. Expense Summary

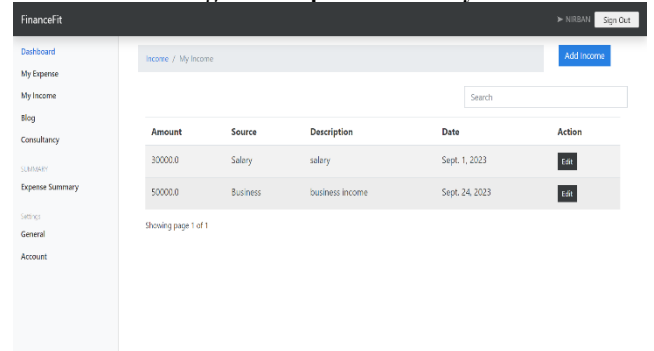


Figure 10. Income Dashboard

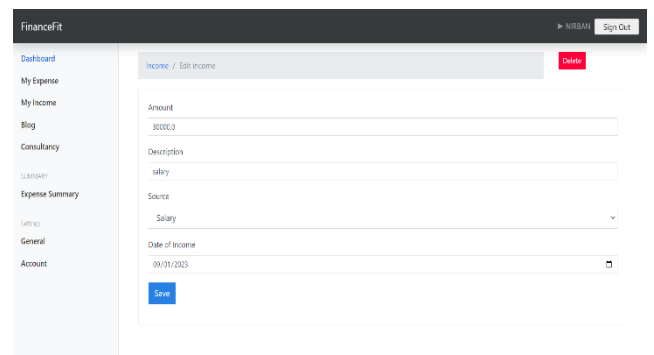


Figure 11. Edit Income Page

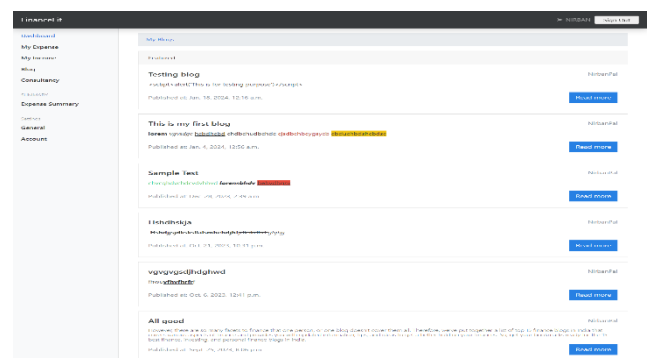


Figure 12. Blog Page for Users

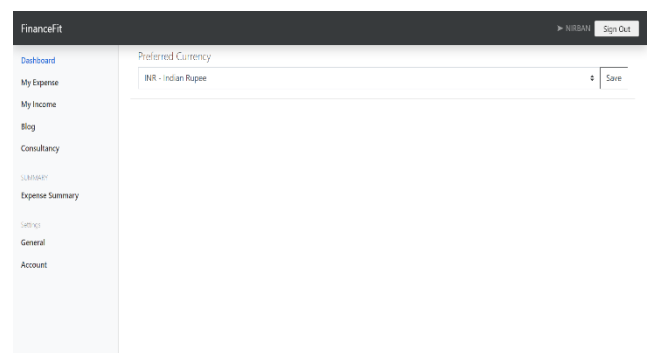


Figure 13. Settings-Currency Preference

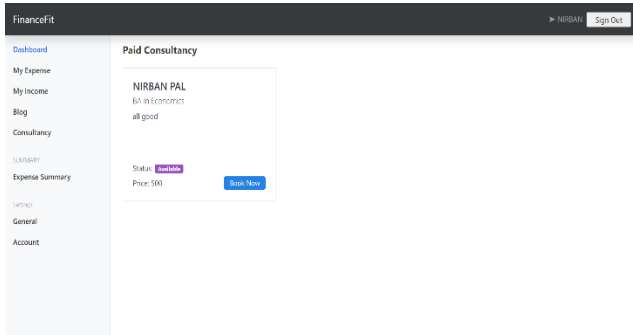


Figure 14. Available Consultancy

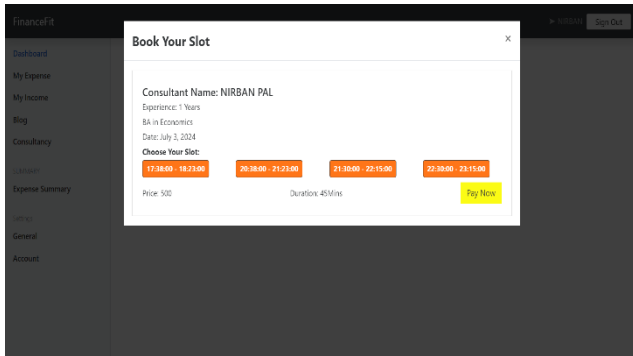


Figure 15. Book slots for consultancy

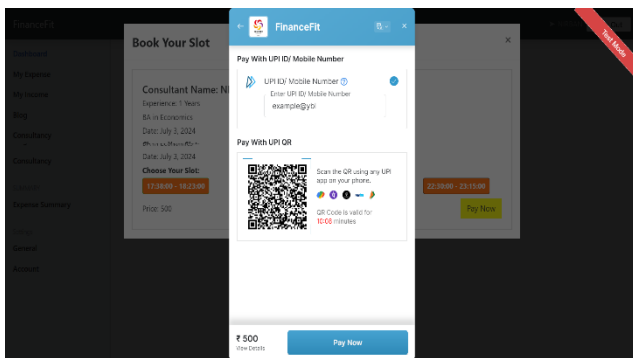


Figure 16. Payment Gateway-Razorpay

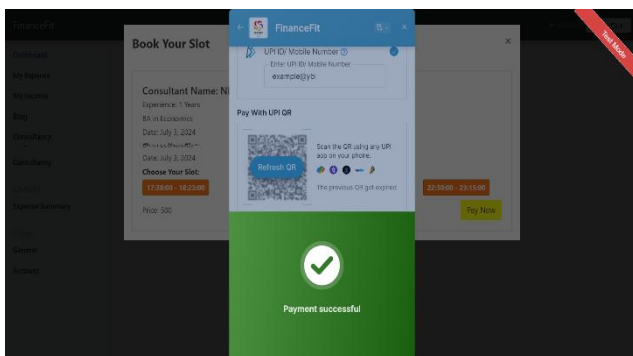


Figure 17. Payment Gateway-Payment Succeeddful

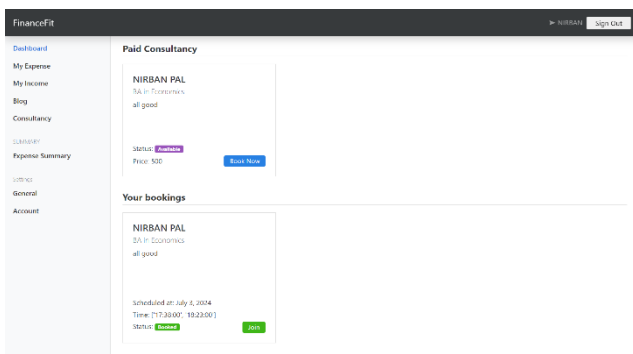


Figure 18. Consultancy Page Showing Booked Meetings



Figure 19. Scheduled Meeting on Zoom Platform

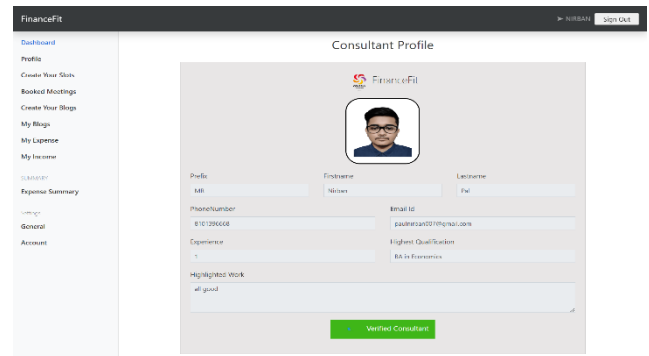


Figure 20. Consultant Profile

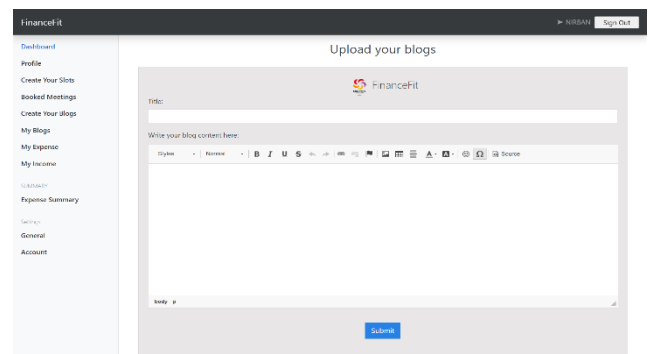


Figure 21. Consultant View-Upload Blogs

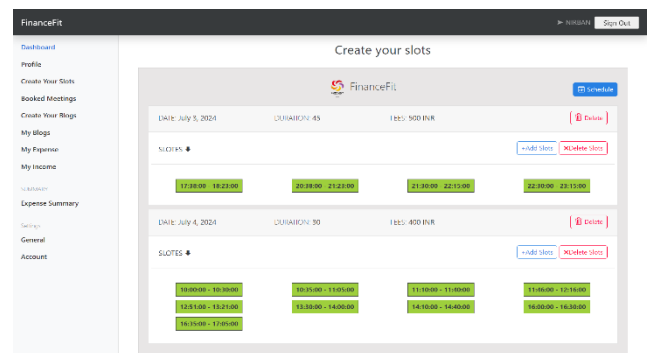


Figure 22. Consultant View-Create Slots for Meetings

The screenshot shows a web application interface for 'FinanceFit'. On the left is a sidebar menu with options like Dashboard, Profile, Create Your Slots, Booked Meetings, Create Your Blogs, My Blogs, My Expense, and My Income. The main area is titled 'Your meetings' and contains a table with the following data:

| Name   | Email                   | Time                 | Price | Duration | Meeting status | Completed        |
|--------|-------------------------|----------------------|-------|----------|----------------|------------------|
| nirban | nirbanpaul007@gmail.com | [13:49:00, 14:19:00] | \$00  | 30       | Start          | Mark as complete |

Below the table, it says 'Showing 1 to 1 of 1 entries' and has 'Previous' and 'Next' buttons.

Figure 23. Consultant View-Booked Meetings

## 5. Conclusion and Future Work

This application can be used as an overall solution that helps effectively and effortlessly deal with daily expenditures. It empowers users to analyse their income and expenses by providing detailed insights of their expenses in the form of comparative charts and graphs which in turns helps the users to identify areas of cost-cutting and savings enhancement. Additionally, it promotes financial literacy and offers valuable advice from financial advisors, helping users make informed decisions. Overall, this application is a smart solution for managing finances to improve one's financial health and promoting financial sustainability.

Although this application makes managing one's finances easier and more regulated, the scope for advancement is still vast with numerous opportunities for improvement and growth. The following can be included in future enhancements–

- Email Notifications and Reminders: Email notification and reminder for the users to log in their income and expenses and also if the user exceeds his expense limit.
- Savings Objectives and Limits: To improve financial planning, let users specify savings objectives and daily spending caps for a personalized experience.
- AI & Machine Learning: Combine cutting-edge algorithms to provide predictive analytics and individualized financial advice.
- Enhanced Security: Use blockchain technology and biometric authentication to protect data.
- Expanded Features: Tax management, investment tracking and automated bill payments.

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