

Expense Tracker: A Smart Approach to Track Daily Expense

Asst. Prof Dr. Pooja Bhatt

CSE, Parul University. Vadodra, India

Sai Charan Nutheti

CSE, Parul University. Vadodra, India

Ganesh Mamidipaka

CSE, Parul University Vadodra, India

Uday Kiran. Kondapally

CSE, Parul University, Vadodara, India.

Harthik Lokineni

CSE, Parul University Vadodra, India

Abstract

Current life offers an excess of options of services and goods for consumers. As a result, people's expenses have risen, for example, compared to ten years ago, and the cost of living has been increasing day by day. Thus, it becomes integral to keep a check on expenses to live a comfortable life with a proper budget setup. Know Your Budget is an Expense Tracker & it is an everyday expense control application designed to track costs effortlessly and efficiently each day. This helps users to get rid of the need of paper responsibilities that systematically maintain information. This site can be utilized by any individual to govern their income expenditure from 'Each day to Annual basis and to hold an eye on their spending. On a weekly, monthly, and yearly basis, details of expenses will be displayed in the form of a 'PIE CHART'. On one way of thinking they face a money crisis, in such cases Knowing your Budget can help people to track their income & expense. We have categories in the expense tracker such as add expense, monthly expenses, add new expense, and so on. In this Project, we have a new feature named as 'BOOKKEEPING'. It aids us in adding information about what money we receive from others and what it costs. Including the person to whom the payments were made and the purpose for the payment.

Keywords: User Account Registration/login, Add Income, Add Expense, Budget Analysis, View Expenses, Delete a record, GUI (more user friendly).

I. INTRODUCTION

One tool for tracking and keeping an eye on your everyday spending patterns is an expense tracker. It makes it easier for you to manage your finances by keeping track of your earnings and outlays. You can quickly see where your money is going and spot areas where you might need to make expenditure cuts if you use an expense tracker. You can make a spending tracker as basic or as sophisticated as you like. To make keeping track of your purchases easier, some cost trackers even let you scan your receipts. One useful tool for handling your money is an expense tracker. It can assist you in cutting costs, preventing overspending, and pinpointing areas where your budget might need to be adjusted. You may make better financial decisions and work toward your financial objectives by keeping track of your spending.

One of the most typical issues that people who want to manage their money well have is tracking their expenses. Many people find it difficult to monitor their expenditures, which can lead to overspending, inability to save money, or difficulties reaching their financial objectives. Those with complicated financial circumstances, frequent expenditures, or various sources of income may find this issue especially difficult to solve. An expense tracker can be a helpful tool to solve this issue. One digital tool that helps people better manage their finances and keep track of their expenditures is an expense tracker.

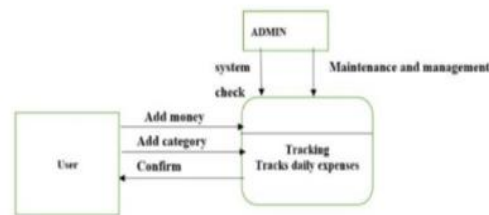


Figure 1.1: Process modeling(DFD-0-DFD-1)[R.1]

However, but not all expense trackers are made equal, and some might not be able to adequately accommodate the unique requirements of various users. Finding the ideal expenditure tracker to meet a person's unique demands is therefore a major issue with expense tracking. Understanding the key components of efficient expense monitoring, such as usability, precision, adaptability, and report generation capabilities, is necessary for this. People also need to be educated on the advantages of recording their expenses and the proper way to use an expense tracker to enhance their financial well-being. The difficulty of keeping track of spending consistently is another issue associated with expense tracking. A lot of people may use an expense tracker at first, but they might soon lose interest in it or forget to record their spending, which could result in data that is erroneous or lacking. Due to this, it could be difficult to obtain a clear image of one's financial status and to make wise financial decisions. All things considered, the issue surrounding spending tracking is complex and calls for a trifecta of technology, education, and drive to be effectively managed and financial health improved.

II. LITERATURE REVIEW

Daily Expense Tracker [1] is a small rule in imitation of successfully bossing one's costs easily. It is raised in imitation of superintending the daily expenses in an extra efficient and manageable way. By using the software, we perform to decrease the guide calculations regarding-by-day by fees care of period these effects desire to stay stored because of each user. Daily Expense Tracker helps by maintaining the document regarding daily

costs yet month-to-month income because someone person or additionally generates a month-to-month file over the expense. Daily Expense Tracker is a gadget that is being developed to help customers in budget planning. It allows end customers to file their earnings and costs within the finances that have been planned. Furthermore, customers are capable of song on their spending so they are not wasting their money barring doubt.

Expense Tracker [2] is an Android based application. This application allows the user to maintain a computerized diary. Expense tracker application which will keep track of the expenses of a user on a day-to-day basis. Expense Tracker is going to be a mobile application that It can be accessed at any time required. The first one is the database tier, where all the data and financial data will be stored. Second it will be the user interface which will support the application user to communicate with the system we have developed such a type of android application that helps the users to reduce their effort in handling daily expenses. The application will have various components for updating and viewing users' expenditures.

“Daily Expense tracker” [3] is based on an income and expense tracking system. This project offers some opportunities that will help users to sustain all financial activities like automated dairy The proposed system should provide different categories for the user to select from and they can enter text (for what they used the money) and enter the amount. The DailyExpense Tracker has overcome most of the limitations that occurred during the old times regarding expense or budget management.

This paper represents a Daily Expense Tracker [4]is a tool that resides on a remote server and is accessible via browsers. As the name suggests Daily Expense Tracker is a web application that allows you to track the daily expenses of the user and help them to better manage their resources. Daily Expense Tracker divides the Income based on daily expenses, If exceeds today’s expenses, the system will calculate Tracking your expenses daily can save you an amount, but it can also help you set and work for financial goals for the future.

“Personalized Expense Managing Assistant UsingAndroid Mobile Applications” [5] stood top amongusability and user convenience. Many applications areavailable in the market to manage personal and groupexpenses. This section of the paper is very important and this will guide our team to accomplish the goals set for research. Here, the research project methodology describes the steps and approaches to befollowed to attain the final product. In this, they develop a mobile application that keeps track of user personal expenses, his/her contribution towards group expenses, maintains monthly incomes, and recurring and ad-hoc payment sing.

“Application for Predictive Recommendation and Visualization of Personal Expenses” [6] We prefer to spend money on all kinds of stuff in our lives every day. It is possible to recall a large amount and also aid in the final tallying of the expenditures and profits The user should be able to manually enter the transaction amount. Attributes such as Date, amount, description, and category of the transaction would also need to be filled in during data entry. Therefore, our application aims to help the user not lose track of his/her expenses and hence help them properly manage their finances. We have discussed the important features that our application will support.

This paper represents a Daily Expense Tracker[4]is a tool that resides on a remote server and is accessible via browsers. As the name suggests Daily Expense Tracker is a web application that allows you to track the daily expenses of the user and help them to better manage their resources. Daily Expense Tracker divides the Income based on daily expenses, If exceeds today’s expenses, the system will calculate Tracking your expenses daily can save you amount, but it can also help you set and work for financial goals for the future.

“Personalized Expense Managing Assistant UsingAndroid Mobile Applications” [5] stood top amongusability and user convenience. Many applications areavailable in the market to manage personal and groupexpenses. This section of the paper is very important and this will guide our team to accomplish the goals set for research. Here, the research project methodology describes the steps and approaches to befollowed to attain the final product. In this, they develop a mobile application that keeps track of user personal expenses, his/her contribution towards group expenses, maintains monthly incomes, and recurring and ad-hoc payment sing.

“Application for Predictive Recommendation and Visualization of Personal Expenses” [6] We prefer to spend money on all kinds of stuff in our lives every day. It is possible to recall a large amount and also aid in the final tallying of the expenditures and profits The user should be able to manually enter the transaction amount. Attributes such as Date, amount, description, and category of the transaction would also need to be filled during data entry. Therefore, our application aims to help the user not lose track of his/her expenses and hence help them properly manage their finances. We have discussed the important features that our application will support.

“Online Income and Expense Tracker” [7] will maintain data of daily, weekly, monthly, and yearly expenses, and Manage your expenses and earnings simply and intuitively. Users can select a category of expenses, enter other information like user can capturing a photo, add a location, select the amount of expenses, etc. This new Online Income and Expense Tracker in PHP will eliminate all the demerits that are found under the existing system. To reduce manual calculations, we propose an application that is developed by PHP. Each user will be required to register on the system at registration time, the user will be provided id, which will be used to maintain the record of each unique user. Tracking your expenses daily can save your amount, but it can also help you set financial goals for the future. If you know exactly where your amount is going every month, you can easily see where some cutbacks and compromises can be made

“To avoid Income and Expense calculations” [8] and in the same manner to remind a person, we develop an Android application that may be helpful in all situations and it can be installed in our Android phones. Make a list of all your income sources and expenses for a specific period, such as a month or a year. Some of the expense trackers are connected to the database and must link to either tracking system. We developed this android application mainly to improve and to avoid the manual way and also to avoid confusion like who are the persons want to give money to us and what the expenses have to do on a date

“Application for Tracking Personal Expense” [9] This application allows the user to maintain an online diary. The expense tracker application will keep track of the Expenses of a user on a day-to-day basis. It keeps a record of your expenses and also will give you a category-wise distribution of your expenses. There are different ways to track expenses, such as using an app, a spreadsheet, or a paper-based system. Choose the method that works best for you and fits your lifestyle. The development of this application has been conducted in a stepwise manner using a well-defined methodology, customized according to the requirements of the system.

“Expense Tracker” [10] will maintain data of daily, weekly, monthly, and yearly expenses, Manage your expenses and earnings simply and intuitively. Decide how often you want to track your expenses, whether it's daily, weekly, or monthly. This will help you stay on top of your spending habits and make adjustments as needed. Tracking your expenses daily can save your amount, but it can also help you set financial goals for the future. If you know exactly where your amount is going every month, you can easily see where some cutbacks and compromises can be made.

The web application “Expense Tracker” [11] is developed to manage daily expenses in a more efficient and manageable way. By using this application, we can reduce the manual calculations of the daily expenses and keep track of the expenditures. Daily Expense Tracker divides the Income based on daily expenses, If exceeds the day's expense, the system will calculate income and will provide a new daily expense allowed amount. The new system has overcome most of the limitations of the existing system and works according to the design specifications given. The project that we have developed is work more efficient than the other income and expense tracker.

An android application named as “Expense Tracker”.

[12] As the name suggests, this project is an android app which is used to track the daily expenses of the user. User are provided with three options for data entry namely Income, Expense and Wish List. If you select income or expense, you would be provided with its types and subtypes. For wish list only items can be inserted. Monitoring your everyday expenses can set aside you cash, yet it can likewise help you set your monetary objectives for what's to come. On the off chance that you know precisely where your sum is going much of a stretch see where a few reductions and bargains can be made.

This “Expense Tracker” [13] is a web application that facilitates users to keep track of and manage their personal as well as business expenses. This application helps the users keep a digital diary

It is time to stop using paper and Excel sheets to keep track of your digital as well as cash payments. Using paper is

not easy to manage. It is common to delete files accidentally or misplace files Tracking your expenses daily can not only save your amount, but it can also assist you set financial goals for the longer term. If you know exactly where your amount goes every month, you will easily see where some cutbacksand compromises can be made.

“Spending Tracker” [14] is a daily expense management system designed to track day-to-day expenses easily and efficiently. It helps the user to track the daily expenses of unpaid and paid transaction through a computerized system which eliminates the need for hardcopy output. System design is the process of defining architecture, components, interfaces, and data for a system to meetdemanded needs as per user requirement. Systemdesign can be seen as the main factor of systems theory to product development efficiently

In this paper, after making this application we assure that this application will help its users to manage the cost of their daily expenditure. It will guide them andaware them of their daily expenses. It will prove to behelpful for the people who are frustrated with their daily budget management

“EXPENSE TRACKER” [15] In today's frantic and expensive society, we are in a great hurry to make money. We did, however, split ways after the month. We are unknowingly squandering money on insignificant and unwanted products. As a result, we've devised a system for keeping track of ourearnings. Expense Tracker will be a mobile application that can be used at any time.: the first is the database layer, which will hold all of the data andfinancial information. Second, the program will besupported by the user interface.

Expense Tracker was developed in several stages. Themethod utilized is a top-down approach, with the focus on what comes first, followed by how, and then on to subsequent levels of detail. Many issues were uncovered during this research thathave hampered the effectiveness of the old manual approach.

III. METHODOLOGY

A. Planning

The "Expense Tracker" project, built using the MERNstack, begins with meticulous project planning and requirement analysis. Define objectives, scope, and features, and create a comprehensive requirements document. Next, design the MongoDB database schema for user accounts and expenses.

B. backend development:

Set up the Node.js environment and create the backend of the application using Express.js. DevelopRESTful APIs for user authentication (registration, login, logout), user management, and expense management (add, edit, delete). Implement user authentication mechanisms such as JWT or OAuth, and incorporate features like email verification, password reset, and account activation.

C. Frontend:

Create the front end using React. Design user interfaces for registration, login, and user profile.Develop pages for adding, editing, and deleting expenses. Integrate data visualization components to present data in the form of pie charts and progress bars, employing libraries like D3.js or Chart.js. Ensure a responsive design for accessibility on various devices.

D. Integrations:

The front end and back end through API requests, allow role-based user access. Rigorous testing includes unit testing, integration testing, and security checks. Deploy the frontend and backend, configure domains, and monitor security and complianceConnect the frontend to the backend through API requests using tools like Axios or Fetch. Implement user authentication on the front end to control access to specific features based on user roles.

E. Testing:

Comprehensive testing is critical. Perform unit testing for both the frontend and backend components, as well as integration testing to ensure the system functions seamlessly. Pay close attention to security testing to identify and address vulnerabilities. Enhance usability and functionality. Document the application and ensure security and compliance measures. Provide training for users and maintain the application with regular updates and improvements. Consider scaling, marketing, and support, and establish monitoring tools for performance tracking. Adapt this methodology to your project's specific requirements and goals

F. Database:

Begin by designing the MongoDB database schema. This step involves structuring the data for user accounts, expenses, and related information, considering the flexibility of MongoDB

G Maintenance and Updates:

Ensure regular updates, patch security vulnerabilities, and enhance features based on user feedback.

H. User Training:

Provide training for users, administrators, and support staff to effectively use the application.

I. Monitoring and Support:

Establish monitoring tools to track application performance and user behavior. Offer user support and address issues promptly. Adapt this methodology to align with your project's specific requirements and organization's goals.

IV. RESULTS

- In the email, you'll find an activation link. Click on the link.
- You'll be directed to a confirmation page, and your account will be activated.

If you don't see the activation email in your inbox, please check your spam or junk folder. If you still can't find it, you can request a new activation link from the login

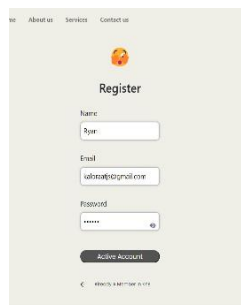
The image shows a web browser window displaying a registration form. At the top, there is a navigation bar with links for 'Home', 'About us', 'Services', and 'Contact us'. Below the navigation bar is a header with an orange circular logo and the word 'Register'. The form itself has four input fields: 'Name' with the placeholder 'Your', 'Email' with the placeholder 'yourname@gmail.com', and 'Password' with the placeholder 'password'. There is a small eye icon to the right of the password field to toggle visibility. Below the input fields is a dark grey button labeled 'Active Account'. At the bottom left of the form, there is a small copyright notice: '© 2024 All Rights Reserved'.

Fig. 1: Registration

C. Login:

Once your account is activated, you can log in to yourExpense Tracker account:

- Go to the homepage and click on the "Login" button.
- Enter your email and password.
- Click the "Login" button to access your account.

In case you forget your password, you can use the "Forgot Password" feature to reset it. Simply click on the "Forgot

Password" link on the login page, enter your registered email address, and you'll receive a password reset link in your email to set a new password.

A. Registration

.

To get started with our Expense Tracker, you need to create an account. (Figure 1) Follow these simple steps to register:

- Click on the "Register" button on the homepage.
- Fill in the registration form with your details, including your name, email, and a secure password.
- After completing the form, click the "Register" button.
- You'll receive an email confirmation with an activation link.

B. Activation Link:

To activate your account, follow these steps:

- Check your email for a message from "Expense Tracker" with the subject "Account Activation."

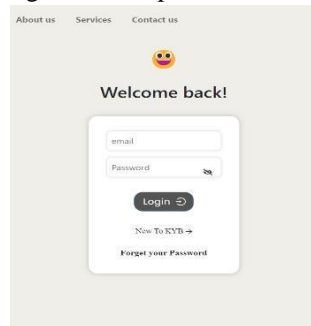


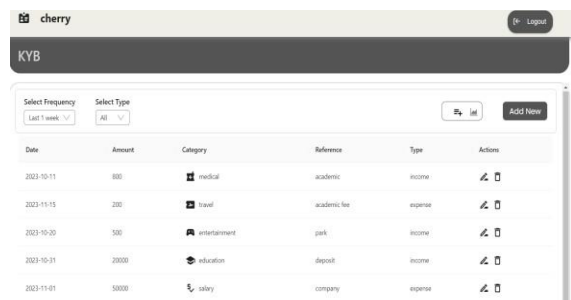
Fig. 2: Login

D. Expense Record Table:

In the "Table" . (Figure 3) section of our Expense Tracker, you can easily view and manage your expense records in an organized and user-friendly format. This table provides a detailed breakdown of your expenses, including date, category, type (income or expense), reference, and

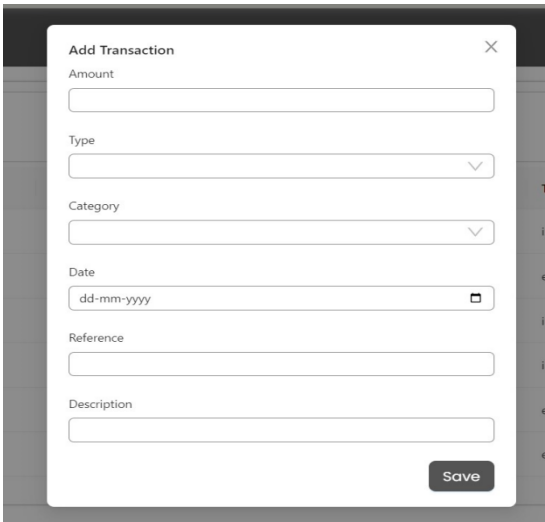
E. Expense Record Table Columns:

- **Date:** This column displays the date when the expense or income was recorded. It helps you track when each financial transaction occurred.
- **Category:** The category column categorizes each expense or income, making it simple to identify where your money is going or coming from. Common categories may include housing, transportation, groceries, and entertainment.
- **Type (Income or Expense):** This column specifies whether the entry is an income or an expense. It helps you differentiate between the money you earn and the money you spend.
- **Reference:** The reference column allows you to add notes or a brief description of the expense or income source. This can be helpful for providing additional context.
- **Amount:** The amount column shows the numerical value associated with the expense or income, helping you understand the financial impact of each transaction.



cherry					
KYB					
Select Frequency		Select Type			
Last 1 week		All			
Date	Amount	Category	Reference	Type	Actions
2023-10-11	800	medical	academic	income	
2023-11-15	200	travel	academic fee	expense	
2023-10-20	500	entertainment	park	income	
2023-10-31	20000	education	deposit	income	
2023-11-01	50000	salary	company	expense	

Fig. 3: Record Table



Add Transaction

Amount

Type

Category

Date

Reference

Description

Save

Fig. 4: Record Table Columns

F. Income vs. Expense:

Here, you will find a visually intuitive pie chart (Figure 5) that illustrates the balance between your income and expenses. The chart provides a clear representation of your financial health, allowing you to quickly assess whether you're spending within your means.

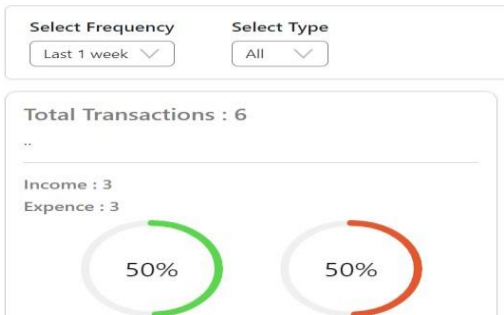


Fig. 5: chart

G. Category-Wise Progress Bars(Figure 6):

To help you understand your spending habits in detail, we've included category-wise progress bars. These bars show

the percentage of your expenses in various predefined categories, making it easy to identify where you're allocating most of your funds.

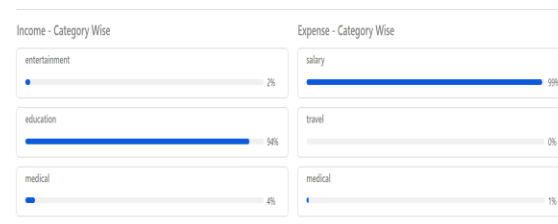


Fig. 6: Progress bars

E. Total Turnover:

A key metric in financial tracking is your total turnover, which indicates the overall financial movement within your account. We provide you with a snapshot of your total turnover, allowing you to see how your financial situation evolves over time.

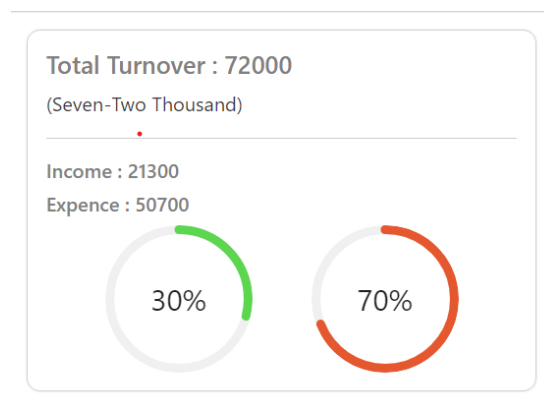


Fig. 7: Total Turnover

V. CONCLUSION

An Expense Tracker (Know Your Budget) project is a useful tool for individuals and businesses to keep track of their expenses and manage their finances effectively. In this project, we have designed a system that allows users to enter their expenses, categorize them, and track their spending over time. The system can generate reports and charts to help users analyse their spending patterns and make informed financial decisions. Through the development of this project, we have learned about the importance of data management and security. We have implemented measures to protect user data and prevent unauthorized access. We have also gained experience in database design and management, as well as web development frameworks and technologies. Overall, this project has been a valuable learning experience, and we believe that it can be a useful tool for individuals and businesses looking to manage their expenses effectively. By continually improving and updating the system, we can help users make better financial decisions and achieve their financial goals.

REFERENCES

1. Tamia Ruvimbo Masendu^{1*}, Aanajey Mani Tripath, May 2022, Daily Expense T Tracker, International Journal of Research in Engineering, Science and Management, 5(5), pp.90-92
2. Abishek Hagawane, 2Roshan Gopalghare, 3Prathmesh Isawe, 4Mrunal Aware, 07 June 2022, Daily Expense Tracker, International Journal of Scientific Research in Computer Science, Engineering and Information Technology, 8(3), pp. 265-268.
3. Velmurugan.R, Mrs. P. Usha², March 2021, Expense Tracker Application, INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH IN TECHNOLOGY, 7(10), pp.191-194.
4. Shivam Mehra, Prabhat Parashar 2021 Daily Expense Tracker, International Journal of Research in Engineering and Science (IJRES), Volume 09(12), pp. 70-73.
5. N.ZahiraJahan, K. I.Vinodhini, 2016 Personalized Expense Managing Assistant Using Android, International Journal of Computer Technique, Volume 3(2) pp. 60-67.
6. Darsh Shah, Sanay Shah, Ritik Savani, Dr. Bhavesh Patel, Ashwini Deshmukh, 2021, Application for Predictive Recommendation and Visualization of Personal Expenses, Journal of Emerging Technologies and Innovative Research (JETIR), 8(3) pp.2196- 2201.
7. S. Chandini¹, T. Poojitha², D. Ranjith³, V.J. Mohammed Akram⁴, M.S Vani⁵, V.Rajyalakshmi, Mar 2019, Online Income and Expense Tracker, International Research Journal of Engineering and Technology (IRJET), 6(3), pp.4119-4124.
8. P. Thanapal , Mohammed Yaseen Patel, T.P. Lokesh Raj and J. Satheesh Kumar, 2015. Income and Expense Tracker, Indian Journal of Science and Technology (IJST), 8(S2), pp 118–122.
9. M. Harish Kumar, G.P. Shree Harini, D. Thenmullai, 2022. Application for Tracking Personal Expense, International Journal of Advanced Research in Computer and Communication Engineering (IJARCCE), 11(S4), pp 863-866.
10. Ram Kumar Sharma, Shwetank Pandey, Vaibhav Tripathi, Sonam Gupta, Neha kumari, 2021. Expense Tracker, International Journal of All Research Education and Scientific Methods (IJARESM), 9(S6), pp. 3166-3170.
11. Prof Miriam Thomas, Lakshmi P, and Dr. Mahalekshmi T, 2020 sept, Expense Tracker, International Journal of Advanced Research in Science, Communication and Technology (IJARSCT), 9(4), pp.5-9
12. ATIYA KAZI¹, PRAPHULLA S. KHERADE², RAJ S. VILANKAR³, PARAG M.SAWANT, MAY 2021, Expense Tracker, ICONIC RESEARCH AND ENGINEERING JOURNALS, 4(11), pp.19-21.
13. Aman Garg, Mukul Goel, Sagar Mittal, Mr. Shekhar Singh⁴, Apr 2021, Expense Tracker, International Journal for Research in Applied Science & Engineering Technology (IJRASET), 9(IV), pp.1067-1070.
14. Uday Pratap Singh, Aakash Kumar Gupta, Dr Balamurugan, 2021 April, Spending Tracker, Turkish Journal of Computer and Mathematics Education, 12(6), pp.5095-5103.
15. Nidhi Jitendra Jadhav^{*1}, Rutuja Vijay Chakor^{*2}, Trupti Mahesh Gunjal^{*3}, Damayanti. D. Pawar^{*}, April-2022, EXPENSE TRACKER, International Research Journal of Modernization in Engineering Technology and Science (IRJMETS), 4(4), pp.1676-1679