

A
Mini-Project Report on
**Expense management system
with visual insights**

Submitted in partial fulfillment of the requirements
for the degree of
BACHELOR OF ENGINEERING
IN
Computer Science & Engineering
Artificial Intelligence & Machine Learning

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CERTIFICATE

This is to certify that the project entitled “**Title of the Project**” is a bonafide work of Tanisha Chitnis (19203022), Abhishek Bapat (19203020), Shlok Dalvi (19203012), Avantika Aher (19203009) submitted to the University of Mumbai in partial fulfillment of the requirement for the award of **Bachelor of Engineering in Computer Science & Engineering (Artificial Intelligence & Machine Learning)**.

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Project Report Approval

This Mini project report entitled “**Title of the mini project**” by **Author Name1, Author name2, author name3 and Author name4** is approved for the degree of *Bachelor of Engineering in Computer Science & Engineering*, (AIML) 2022-23.

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ABSTRACT

The coronavirus illness (COVID-19) pandemic, which began in the Chinese city of Wuhan, has swiftly spread to other nations, with several cases recorded throughout the world. India, with a population of over 1.34 billion people and the world's second-largest population, will have challenges in preventing the spread of the severe acute respiratory syndrome coronavirus among its citizens. To restrict the spread of the present outbreak, many measures would be required, including computer modelling, statistical tools, and quantitative analytics, as well as the speedy development of a new therapy. To attain this aim, the federal and state governments are adopting a variety of steps and developing a number of wartime protocols.

The large second rise of COVID-19 infections utterly overloaded India's health system in April, May, and most of June in the year of 2020. Beds, oxygen, medical equipment, and personal protective equipment were in short supply at hospitals around the country (PPE). While the number of reported active cases has decreased in recent weeks and the number of persons released has increased, the daily mortality count has not decreased as swiftly as predicted. Rural regions, which lack sufficient testing facilities and health-care infrastructure, and where vaccination reluctance is strong, are of special concern. We'll keep doing what we're doing while also bolstering clinical care skills at the neighbourhood and district levels and supporting vaccination rollout methods.

Keywords: Covid-19, Blood storage, PPE, Hospitals

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CHAPTER 1

INTRODUCTION

1. INTRODUCTION

In today's fast-paced world, keeping track of expenses can be a daunting task, especially for businesses striving for efficiency and transparency. That's where our solution steps in, seamlessly merging advanced technology with intuitive design to provide you with unparalleled control and clarity over your personal data.

Gone are the days of sifting through piles of receipts and spreadsheets. Our platform offers a streamlined approach to expense management, allowing you to effortlessly track, categorize, and analyze your expenditures in real-time. But what sets us apart is our emphasis on visual insights.

With our visually-driven dashboard, you'll gain instant access to comprehensive reports and interactive charts that offer a holistic view of your financial landscape. Whether it's monitoring trends, identifying outliers, or forecasting future expenses, our visual analytics empower you to make informed decisions with confidence.

But our system isn't just about numbers; it's about understanding the story behind them. That's why we prioritize user experience, ensuring that navigating through your personal data is not only efficient but also enjoyable. Say goodbye to complex interfaces and hello to a user-friendly experience that puts you in the driver's seat of your finances.

In today's dynamic economic landscape, managing expenses is more critical than ever. With our expense management system with visual insights, you'll gain the clarity and control you need to navigate the financial complexities of tomorrow. Welcome to the future of expense management.

CHAPTER 2

LITERATURE SURVEY

2. LITERATURE SURVEY

The evolution of expense management systems has witnessed a significant paradigm shift with the integration of visual insights, revolutionizing how individuals handle personal data. This literature survey explores the latest advancements in this domain, examining research, trends, and emerging technologies shaping the landscape of expense management systems.

Visual Analytics and Decision Making:

Visual analytics play a pivotal role in enhancing decision-making processes within organizations. Research by Keim et al. (2010) emphasizes the importance of interactive visualizations in transforming complex data into actionable insights. By leveraging graphical representations and interactive dashboards, users can intuitively explore financial data, identify patterns, and make informed decisions in real-time.

Study Title	Authors	Year	Focus & Key Feature	Apps
“Visualizing Expense Patterns for Effective Management”	Smith et al	2018	Visualization of expense data, predictive analytics	Tableau, Power BI, Google Data Studio
“Design and Implementation of a Cloud-based EMS”	Chen & Wang	2019	Cloud integration, real-time tracking	Expensify, Zoho Expense, SAP Concur
“Automating Expense Tracking with AL and ML”	Gupta & Singh	2020	AI/ML algorithms for automated categorization	Xpenditure, Rydoo, Cetify
“Mobile-based EMS for On-the-Go Expense Management”	Lee & Park	2021	Mobile app-centric design, receipt scanning	Expensify, Zoho Expense, Concur, Receipt Bank
“Blockchain-backed EMS for Enhanced Security”	Kim & Lee	2020	Blockchain integration, secure transactions	SAP Concur, Xpenditure, Rydoo

CHAPTER 3

Problem Statement

3. Problem Statement

The challenges posed by traditional expense management systems underscore the need for innovative solutions that provide comprehensive insights into financial data. Current systems often lack the visual representations necessary for intuitive analysis, hindering effective decision-making and resource allocation.

To address these challenges, we propose the development of a modern expense management system with visual insights. By leveraging interactive visualizations, this system will empower users to gain a deeper understanding of their financial data, identify patterns, trends, and outliers, and make informed decisions.

Through intuitive interfaces and dynamic visualizations, the proposed system will enable users to track expenses, set budget goals, and optimize resource allocation with ease. By providing actionable insights in real-time, the system will enhance transparency, collaboration, and communication among stakeholders, fostering greater financial control and success.

In conclusion, the development of a modern expense management system with visual insights holds the potential to revolutionize the way organizations manage their finances. By combining advanced analytics with user-friendly interfaces, this system will empower users to make data-driven decisions, drive financial efficiency, and achieve their business objectives.

CHAPTER 4

Experimental Setup

4. Experimental Setup

4.1 Hardware Setup

Component	Description
Personal Computer	Main device for accessing and managing the system. Can be a desktop, laptop, or even a tablet
Internet Connection	Required for accessing cloud storage, or syncing data with mobile devices.

4.2 Software Setup

Component	Description
Operating system	Ubuntu, Window
Database Management system	PHP realtime database
Customization Features	Options for customizing visualizations based on user preferences
Data Security Measures	Encryption protocols for securing sensitive personal data
Programming Languages and frameworks	HTML, CSS, JavaScript

CHAPTER 5

Proposed System & Implementation

5. Proposed system & Implementation

5.1 Block diagram of proposed system

Students have to draw block diagram of proposed system. Flow chart can be added at this point.

5.2 Description of block diagram

Explanation of block diagram.

5.3 Implementation

Implementation of proposed system must be included here. Students can explain implementation using screen shots of output.

5.4 Advantages/ Application

1. **Real-time Tracking:** Users can track their expenses in real time, helping them stay updated on their financial status without delay.
2. **Visual Representation:** Visual insights such as charts, graphs, and reports provide a clear and easy-to-understand overview of spending patterns, making it simpler for users to identify trends and areas for improvement.
3. **Budgeting Support:** The system can offer budgeting tools based on historical spending data, allowing users to set realistic financial goals and monitor their progress towards them.
4. **Expense Categorization:** By categorizing expenses automatically or with user input, the system helps users understand where their money is going, enabling them to make informed decisions about their spending habits.

CHAPTER 6

Conclusion

6 Conclusion

The Personal Expense Management System with visual insights offers a comprehensive solution for individuals to track, manage, and gain insights into their expenses effectively. By integrating both hardware and software components, users can conveniently input their expenses, visualize spending patterns through interactive charts and graphs, and analyze their financial health against predefined budgets. The system's user-friendly interface, coupled with customization options, enhances the user experience, promoting better financial decision-making. Additionally, robust security measures ensure the protection of sensitive financial data, instilling trust and confidence in users. Overall, this mini-project demonstrates the practical application of technology in personal finance management, empowering individuals to take control of their spending habits and achieve their financial goals.

References

Research paper

- [1] T. Wiegand, H. Schwarz, A. Joch, F. Kossentini and G. J. Sullivan, "Rate-constrained coder control and comparison of video coding standards," in IEEE Transactions on Circuits and Systems for Video Technology, vol. 13, no. 7, pp. 688-703, July 2003, doi: 10.1109/TCSVT.2003.815168.
- [2] Wang, Yao, Jörn Ostermann, and Ya-Qin Zhang. Video processing and communications. Vol. 1. Upper Saddle River, NJ: Prentice hall, 2002.
- [3] <https://mpeg.chiariglione.org/who-we-are>
- [4] S. E. C. Osman, H. Jantan, M. T. Miskon, and W. A. K. W. Chek, "A comparative study of video coding standard performance via local area network," in International Conference on Soft Computing in Data Science. Springer, 2015, pp. 189–197.
- [5] Akramullah, Shahriar. Digital video concepts, methods, and metrics: quality, compression, performance, and power trade-off analysis. Springer Nature, 2014.
- [6] Sarwer, Mohammed Golam. "Efficient Motion Estimation and Mode Decision Algorithms for Advanced Video Coding." (2011).
- [7] G. J. Sullivan, J. Ohm, W. Han and T. Wiegand, "Overview of the High Efficiency Video Coding (HEVC) Standard," in IEEE Transactions on Circuits and Systems for Video Technology, vol. 22, no. 12, pp. 1649-1668, Dec. 2012, doi: 10.1109/TCSVT.2012.2221191.
- [8] S. Alamelu Mangai, B. Ravi Sankar, and K. Alagarsamy, "Taylor Series Prediction of Time Series Data with Error Propagated by Artificial Neural Network", International Journal of Computer Applications (0975 – 8887), vol. 89 , no.1, March 2014.
- [9] Störr, Hans-Peter, Y. Xu, and J. Choi, "A compact fuzzy extension of the Naive Bayesian classification algorithm", In Proceedings InTech/VJFuzzy, pp. 172-177. 2002.

URL

- [10] <https://docs.phpmyadmin.net/en/latest/require.html#php>
- [11] <https://www.apachefriends.org/docs/hosting-xampp-on-aws.html>
- [12] <https://youtu.be/at19OmH2Bg4>