

PROOF OF CONCEPT WEB APP

2025

GROUP MEMBERS

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EXPENSE INTEGRATION AND REVENUE MANAGEMENT WITH MONTHLY SUMMARY FOR DBEMB ORGANIZATION

[YOUTUBE DEMO VIDEO LINK]

[GITHUB REPOSITORY LINK]

SECTION A224

INSTRUCTOR

CLYDE BALAMAN

MARCH 12, 2025

I. INTRODUCTION

Expense Integration and Revenue Management System with Monthly Summary is a web application designed for the Davao Blue Eagle Marching Band organization. This system aims to solve the band's financial management challenges by replacing outdated manual processes, such as handwritten ledgers and basic spreadsheets, with a centralized digital platform. The purpose of the project is to enhance the accuracy, efficiency, and transparency of the band's financial operations, enabling better expense tracking, revenue management, and automated financial reporting. To achieve this, the system will be developed using HTML, CSS, and JavaScript for the front-end to create a responsive and user-friendly interface, while Node.js and Express.js will handle the back-end logic, API development, and server-side operations. Additionally, MySQL will be used for database management to store and retrieve financial data securely, and Bootstrap will ensure a clean and simple design. By leveraging these technologies, the system will provide real-time updates, and automated monthly summaries. Ultimately, improving the band's financial management and operational efficiency.

II. ROLES AND CONTRIBUTIONS



James Albert S. Albinda

Role: API Tester and Documentation Specialist

Responsibilities:

- Creating and maintaining detailed project manuscripts, including technical documentation, user manuals, and system requirements.
- Testing the system's functionality..
- Identifying and reporting bugs or inconsistencies in the system and providing feedback for improvements.
- Collaborating with the front-end and back-end developers to ensure the system meets all functional and non-functional requirements.

Key Contributions:

- Developed comprehensive documentation that served as a reference for the team.
- Conducted rigorous system testing, ensuring the system's reliability and performance.
- Provided valuable feedback that led to system optimizations and improved user experience.

**Abrienne Junne F. Capricho****Role:** Back-end Developer and Database Administrator**Responsibilities:**

- Designing and implementing the back-end using Node.js and Express.js to handle server-side logic and API development.
- Managing the MySQL database, including schema design, data storage, and retrieval, to ensure data integrity and security.
- Integrating the back-end with the front-end to enable seamless data flow and real-time updates.
- Optimizing database queries and server performance for faster response times.

Key Contributions:

- Built a robust and scalable back-end system that supports the application's core functionalities.
- Designed an efficient database structure that ensures accurate and secure storage of financial data.
- Played a key role in integrating the front-end and back-end, ensuring smooth communication between the two.

**Allan Christopher D. Dela Cruz****Role:** Front-end Developer**Responsibilities:**

- Designing and developing the user interface using HTML, CSS, JavaScript, and Bootstrap to create a responsive and user-friendly experience.
- Implementing interactive features and dynamic content using Vanilla JavaScript to enhance user engagement.
- Ensuring cross-browser compatibility and mobile responsiveness for a seamless user experience.
- Collaborating with the back-end developer to integrate APIs and display real-time data on the front-end.
- Conducting usability testing to gather feedback and improve the interface design.

Key Contributions:

- Created an intuitive and visually appealing interface that simplifies financial management for non-technical users.

- Developed responsive designs that work seamlessly across different devices and screen sizes.
- Implemented dynamic features, such as real-time expense tracking and revenue updates, to improve user interaction.

The success of the project was driven by the strong collaboration and clear division of responsibilities among the team members. James's meticulous documentation and API testing ensured the system's reliability, while Abrienne's expertise in back-end development and database management provided a solid foundation for the application. Allan's focus on front-end development resulted in a user-friendly interface that made the system accessible to all users. By working together and leveraging their individual strengths, the team was able to deliver a robust, efficient, and user-centric financial management system that addresses the Davao Blue Eagle Marching Band's needs. This collaborative effort highlights the importance of teamwork in achieving project goals and delivering high-quality solutions.

III. WEB APPLICATION IDEA

Web Application Name: EXPENSE INTEGRATION AND REVENUE MANAGEMENT WITH MONTHLY SUMMARY FOR DBEMB ORGANIZATION	
Goal: Our goal is to develop an Expense Integration and Revenue Management System with Monthly Summary for the Davao Blue Eagle Marching Band. The system will automate financial processes, improve accuracy, and provide real-time updates, enabling the band to manage expenses, track revenues, and generate monthly summaries efficiently. This will enhance transparency, support better decision-making, and ensure the band's financial sustainability.	
Needs. This project needs to exist because the	Benefits. Implementing this project offers several

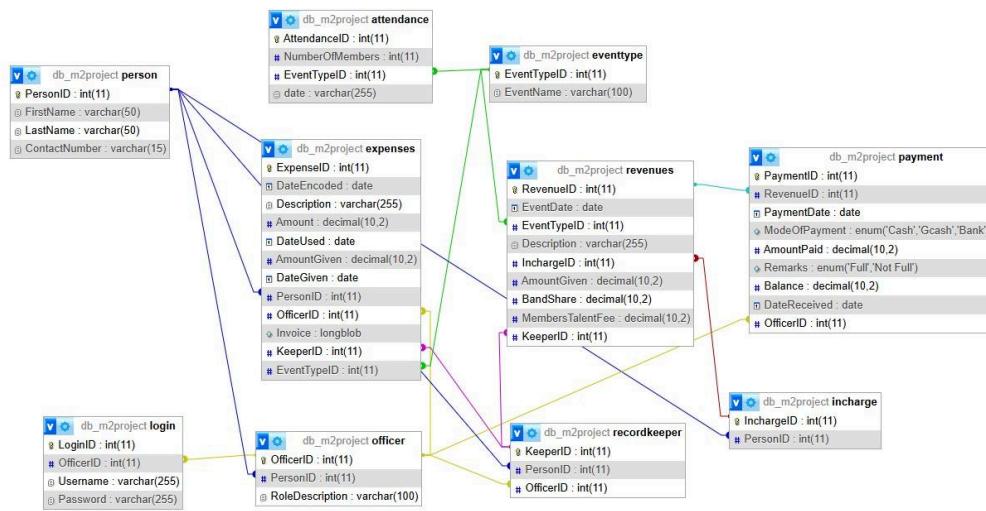
<p>organization currently relies on outdated manual processes, such as handwritten ledgers and basic spreadsheets, for financial management. These methods are time-consuming, prone to errors, and lack real-time updates, leading to inefficiencies in expense tracking, revenue management, and financial reporting. The absence of a centralized system makes it difficult to monitor finances accurately, resulting in budget overruns, delayed decision-making, and limited transparency. This project fills the gap by providing a digital, automated solution that streamlines financial operations, ensures accuracy, and offers real-time insights, enabling the band to manage resources effectively and focus on their core mission of musical excellence.</p>	<p>advantages for the Davao Blue Eagle Marching Band and similar organizations. The system will automate financial processes, reducing manual effort and minimizing human errors in expense tracking and revenue management. It provides real-time updates and comprehensive monthly summaries, enabling better financial oversight and informed decision-making. Users will benefit from a user-friendly interface that simplifies financial management, even for those with limited technical expertise. Additionally, the system enhances transparency and accountability, ensuring accurate record-keeping and improved budget adherence. Overall, the project will save time, reduce costs, and support the band's long-term sustainability by optimizing resource allocation and financial planning.</p>
<p>Solution: Our project addresses the Davao Blue Eagle Marching Band's financial management challenges by providing a centralized, web-based system that automates expense tracking, revenue management, and monthly financial</p>	<p>Differentiation: What makes our project unique is its tailored design specifically for marching bands and similar performing arts organizations. Unlike generic financial tools, our system addresses the unique needs of such groups, such as</p>

summaries. The system digitizes financial record-keeping, enabling real-time updates, accurate categorization of expenses, and seamless consolidation of revenue streams. It also generates automated reports, offering clear insights into the band's financial health. By replacing outdated manual processes with a streamlined digital solution, the system reduces errors, saves time, and improves transparency, allowing the band to focus on their performances and growth.

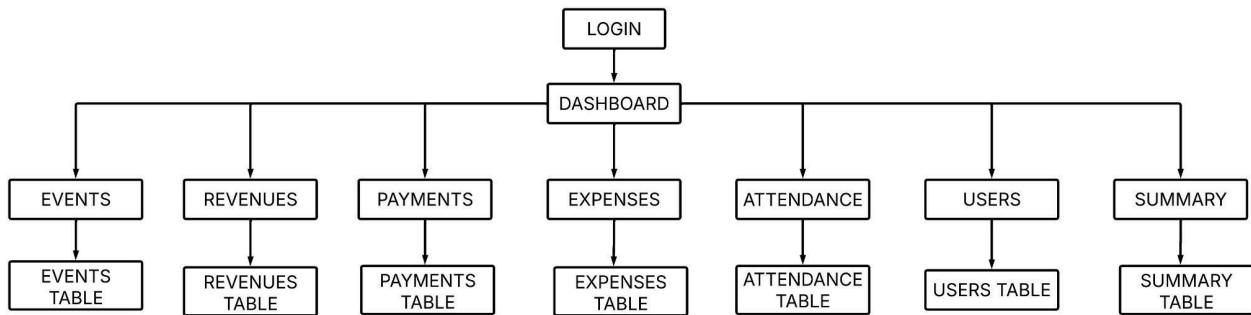
tracking performance fees, competition expenses, and member shares. It also features a user-friendly interface built with Bootstrap and Vanilla JavaScript, making it accessible to non-technical users. Additionally, the integration of Node.js, Express.js, and MySQL ensures scalability and security, while the focus on real-time updates and automated reporting sets it apart from traditional, static financial systems. This combination of customization, ease of use, and advanced functionality makes our solution uniquely suited to the band's needs.

IV. WEB APPLICATION DESIGN

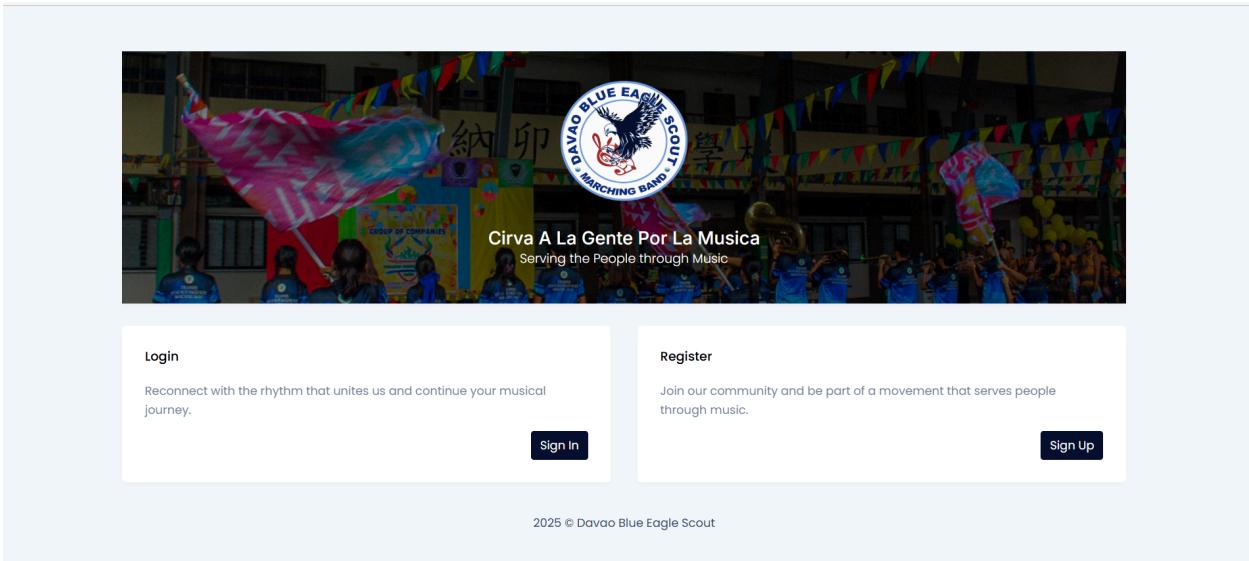
ERD



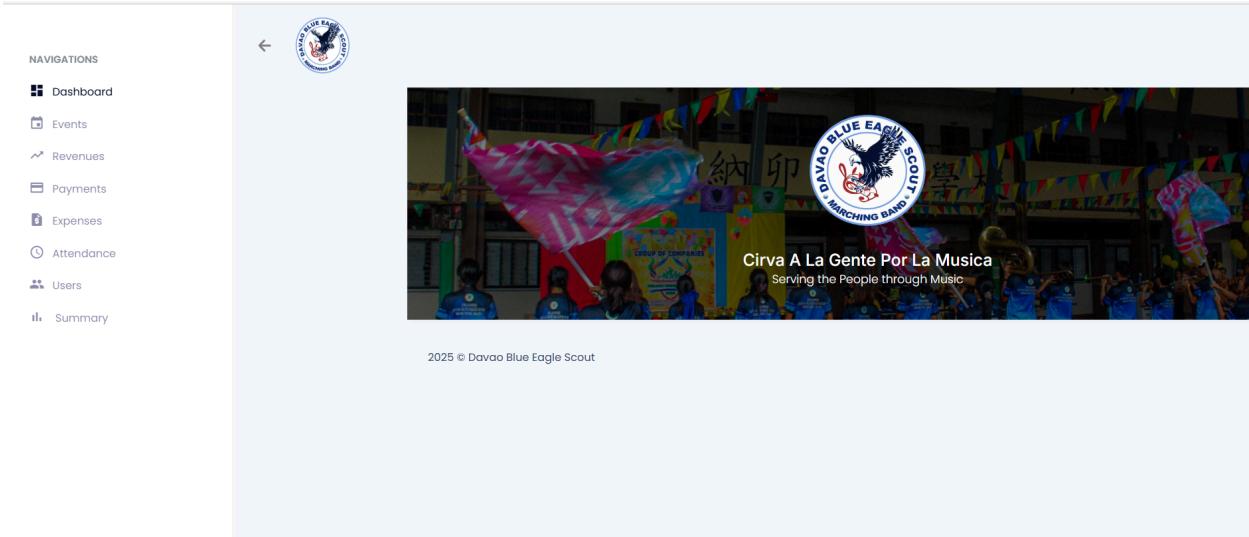
Sitemap



Wireframe



The main landing page features a large banner at the top with the text "Cirva A La Gente Por La Musica" and "Serving the People through Music". Below the banner are two side-by-side boxes: "Login" on the left and "Register" on the right. Both boxes contain a brief description and a "Sign In" or "Sign Up" button.



The dashboard wireframe includes a sidebar on the left with a "NAVIGATIONS" section containing links to "Dashboard", "Events", "Revenues", "Payments", "Expenses", "Attendance", "Users", and "Summary". The main content area features a banner for "Cirva A La Gente Por La Musica" and "Serving the People through Music". At the bottom of the content area is the text "2025 © Davao Blue Eagle Scout".

NAVIGATIONS

- [Dashboard](#)
- [Events](#)
- [Revenues](#)
- [Payments](#)
- [Expenses](#)
- [Attendance](#)
- [Users](#)
- [Summary](#)



(19) Events Management

Create New Events		Search Events
Event Name	Actions	
Funeral	Edit	Delete
Community Event	Edit	Delete
Networking Event	Edit	Delete
Anniversary Celebration	Edit	Delete
Public Performance	Edit	Delete
Award Ceremony	Edit	Delete
Sports Event	Edit	Delete

NAVIGATIONS

- [Dashboard](#)
- [Events](#)
- [Revenues](#)
- [Payments](#)
- [Expenses](#)
- [Attendance](#)
- [Users](#)
- [Summary](#)



(8) Revenues

Create New Revenue		Search Revenue			
Total Amount Given	PHP 38200.00	Total Band Shares	PHP 15280.00	Total All Fees	PHP 0.00

Event Date	Event Name	Description	Amount Given	Band Share	Members	Total Fee	Incharge	Keeper	Actions
March 16, 2025	Concert	Festival P	6300.00	2520.00	1260.00	0.00	Emily Williams	Emily Williams	Payment Edit Delete
March 12, 2025	Corporate Event	Corporate L	4100.00	1640.00	820.00	0.00	Sarah Jones	Sarah Jones	Payment Edit Delete
March 11, 2025	Wedding	Birthday K	3600.00	1440.00	720.00	0.00	David Brown	David Brown	Payment Edit Delete

[Microsoft Store]

NAVIGATIONS

-  Dashboard
-  Events
-  Revenues
-  Payments
-  Expenses
-  Attendance
-  Users
-  Summary

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(8) Payments record

Create New Payment

Total Amount Paid

PHP **38200.00**

Balance

PHP **1400.00**

Event Date	Payment Date	Mode of Payment	Amount Paid	Remarks	Balance	Date Received	Officer	Actions
March 16, 2025	March 16, 2025	Cash	6300.00	Full	0.00	March 16, 2025	Emily Williams	<button style="border: 1px solid #ccc; padding: 2px 5px;">Edit</button> <button style="background-color: red; color: white; border: 1px solid red; padding: 2px 5px;">Delete</button>
March 12, 2025	March 12, 2025	Bank	4100.00	Full	0.00	March 12, 2025	Sarah Jones	<button style="border: 1px solid #ccc; padding: 2px 5px;">Edit</button> <button style="background-color: red; color: white; border: 1px solid red; padding: 2px 5px;">Delete</button>
March 11, 2025	March 11, 2025	Gcash	3600.00	Not Full	400.00	March 11, 2025	David Brown	<button style="border: 1px solid #ccc; padding: 2px 5px;">Edit</button> <button style="background-color: red; color: white; border: 1px solid red; padding: 2px 5px;">Delete</button>
March 10, 2025	March 10, 2025	Cash	6200.00	Full	0.00	March 10, 2025	Emily Williams	<button style="border: 1px solid #ccc; padding: 2px 5px;">Edit</button> <button style="background-color: red; color: white; border: 1px solid red; padding: 2px 5px;">Delete</button>

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(11) Expenses

Create New Expenses

Total Amount

PHP **4950.00**

Total Amount Given

PHP **4540.00**

Date Encoded	Description	Amount	Date Used	Amount Given	Date Given	Officer	Event	Actions
March 8, 2025	Transportation	450	March 8, 2025	400	March 8, 2025	Officer Laura Davis	School Event	<button style="border: 1px solid #ccc; padding: 2px 5px;">Edit</button> <button style="background-color: red; color: white; border: 1px solid red; padding: 2px 5px;">Delete</button>
March 9, 2025	Miscellaneous	600	March 9, 2025	550	March 9, 2025	Director Robert Garcia	Religious Event	<button style="border: 1px solid #ccc; padding: 2px 5px;">Edit</button> <button style="background-color: red; color: white; border: 1px solid red; padding: 2px 5px;">Delete</button>
March 10, 2025	Food	500	March 10, 2025	450	March 10, 2025	Assistant Linda Martinez	Private Gathering	<button style="border: 1px solid #ccc; padding: 2px 5px;">Edit</button> <button style="background-color: red; color: white; border: 1px solid red; padding: 2px 5px;">Delete</button>
March 11, 2025	Decorations	300	March 11, 2025	280	March 11, 2025	Manager Thomas Rodriguez	Product Launch	<button style="border: 1px solid #ccc; padding: 2px 5px;">Edit</button> <button style="background-color: red; color: white; border: 1px solid red; padding: 2px 5px;">Delete</button>

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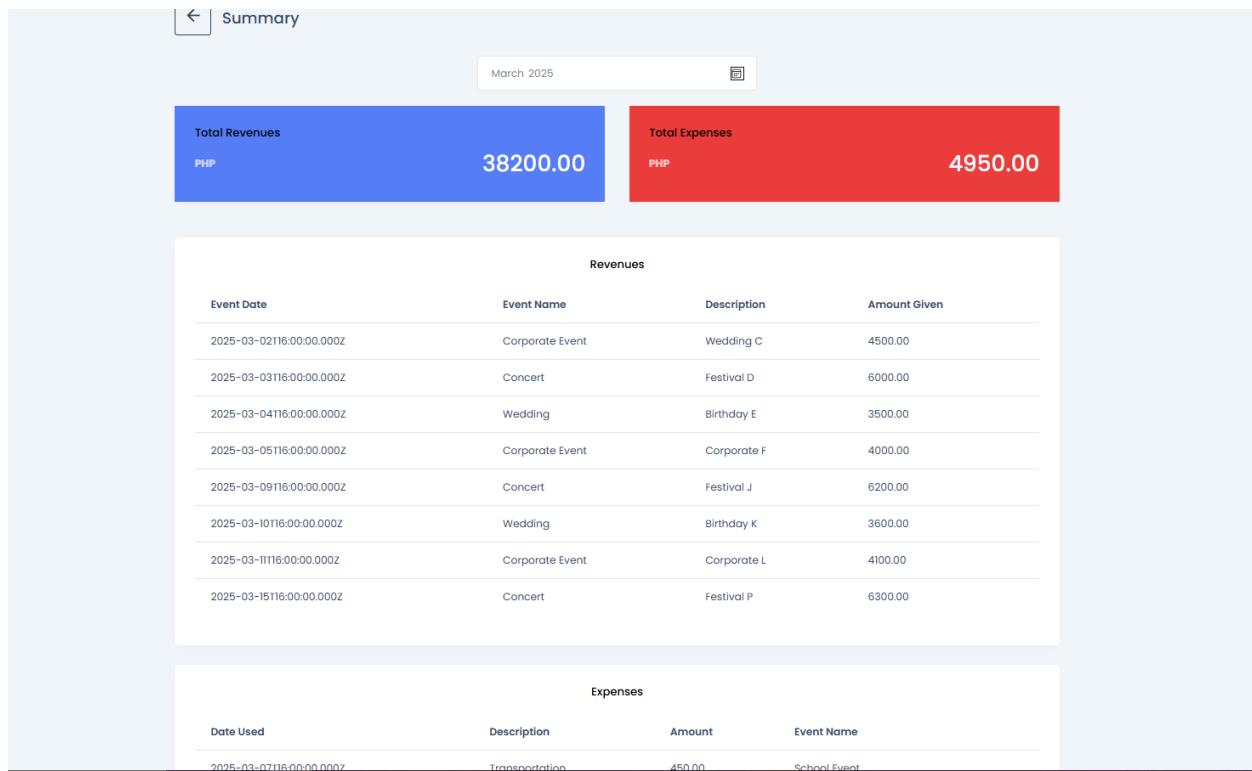
(19) Attendance Records

Create New Attendance		Search Attendance	
Event Name	# of Members	Date	Action
Community Event	31	March 21, 2024	<button>Delete</button>
Networking Event	29	March 20, 2024	<button>Delete</button>
Networking Event	29	March 20, 2024	<button>Delete</button>
Anniversary Celebration	17	March 17, 2024	<button>Delete</button>
Public Performance	32	March 16, 2024	<button>Delete</button>
Award Ceremony	26	March 15, 2024	<button>Delete</button>
Sports Event	21	March 14, 2024	<button>Delete</button>
Fundraising Event	19	March 13, 2024	<button>Delete</button>
Product Launch	14	March 12, 2024	<button>Delete</button>

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(19) User Accounts

Create New Users		Search Users			
First Name	Last Name	Contact Number	Username	Role	Actions
Michael	Johnson	09345678901	user3	Coordinator	<button>View</button> <button>Edit</button> <button>Delete</button>
Emily	Williams	09456789012	user4	Supervisor	<button>View</button> <button>Edit</button> <button>Delete</button>
David	Brown	09567890123	user5	Administrator	<button>View</button> <button>Edit</button> <button>Delete</button>
Sarah	Jones	09678901234	user6	Secretary	<button>View</button> <button>Edit</button> <button>Delete</button>
James	Miller	09789012345	user7	Lead	<button>View</button> <button>Edit</button> <button>Delete</button>
Laura	Davis	09890123456	user8	Officer	<button>View</button> <button>Edit</button> <button>Delete</button>
Robert	Garcia	09901234567	user9	Director	<button>View</button> <button>Edit</button> <button>Delete</button>
Linda	Martinez	09112345678	user10	Assistant	<button>View</button> <button>Edit</button> <button>Delete</button>
Thomas	Rodriguez	09223456789	user11	Manager	<button>View</button> <button>Edit</button> <button>Delete</button>
Jessica	Wilson	09334567890	(Microsoft Clipchamp)		<button>View</button> <button>Edit</button> <button>Delete</button>



The Expense Integration and Revenue Management System connects the user interface (UI) with a MySQL database to streamline financial data input, retrieval, and management. The front-end captures user input, which is sent via HTTP requests to the backend for processing. The system executes CRUD operations to store and retrieve financial data, ensuring real-time updates. Key functionalities include a dashboard for financial summaries, expense tracking page, and revenue tracking page for data entry. The automated report generation feature compiles monthly summaries, while user authentication secures access. Data is stored in structured tables, retrieved via SQL queries, and displayed dynamically. Automated calculations ensure accurate tracking. This integration improves efficiency, transparency, and security in financial management for the Davao Blue Eagle Marching Band.

V. TECHNOLOGY AND RESOURCE

Software Tools:

Development Environments & IDEs

- Visual Studio Code (VS Code) – Primary IDE for coding and debugging.
- Browser Developer Tools – Used for inspecting elements, debugging, and API testing.

Programming Languages & Frameworks

- HTML, CSS, JavaScript (Bootstrap) – Front-end development for a responsive UI.
- Node.js & Express.js – Backend framework to handle API requests and server-side logic.

Database & Storage

- MySQL – Relational database for storing financial records, user data, and reports.
- phpMyAdmin – Web-based database management tool for MySQL.

Version Control & Deployment

- GitHub – Code repository for collaboration and version control.
- Localhost (Node.js) – The system runs on a local development server instead of cloud hosting.

Hardware Tools:

Servers

- **Localhost Server** – The application is hosted and tested locally on a personal computer instead of being deployed to the cloud.

User Devices

- **Desktops and Laptops** – Users can access the system via browsers on these devices.

The tools used in this project ensure efficient development, functionality, and usability. VS Code, GitHub, and browser developer tools streamline coding, testing, and debugging, while

Node.js and Express.js enable smooth API and database interactions. The MySQL database securely stores financial data, and user access across desktops and laptops ensures cross-platform functionality. Although currently running on localhost, future hosting options can enhance accessibility and scalability. By leveraging these tools, the project provides a reliable, scalable, and user-friendly financial management system for the Davao Blue Eagle Marching Band.

VI. TEST CASES

The following test cases are just a guide. You can use them, but feel free to modify, add, or create your own. Just make sure to follow the provided format.

Test Case	Expected Results	Actual Result
The web application has functioning navigation links.	Each link takes the user to the correct page without errors.	[/] Passed [] Failed
The web application has accessible error messages on the front-end.	The system displays a clear and user-friendly error message indicating the problem, and it is easy for the user to understand.	[/] Passed [] Failed
The web application has API endpoints that properly retrieve specific records from the database.	The API successfully retrieves the specific record from the database and returns the correct data in the response.	[/] Passed [] Failed
The web application has responsive design for mobile devices.	The layout adjusts appropriately for smaller screens, and all features remain accessible.	[/] Passed [] Failed
The web application has proper error handling for invalid URLs.	The system shows a 404-error page or a custom "Page Not Found" message.	[/] Passed [] Failed

VII. CONCLUSION

The Expense Integration and Revenue Management System is a web-based financial management tool designed to enhance the efficiency, accuracy, and transparency of financial operations for the Davao Blue Eagle Marching Band. By automating expense tracking, revenue management, and monthly financial summaries, the system replaces outdated manual processes, minimizing errors and improving decision-making. The expected outcomes include real-time financial updates, automated reporting, and streamlined data management, allowing users to monitor finances more effectively. This project aligns with real-world applications by addressing common financial management challenges in small organizations and nonprofits, demonstrating its potential for scalability and adaptability in similar industries. Ultimately, the system improves financial oversight, reduces administrative workload, and ensures better resource allocation, benefiting the organization's long-term sustainability and operational efficiency.