Rythmic Tunes – Your Melodic Companion

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Course: BCA 2nd Year

College: Arulmigu Kapaleeswarar Arts and Science College

Academic Year: 2024 – 2027

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# Abstract

The project 'Rythamic Tunes – Your Melodic Companion' is designed to provide a simple, user-friendly platform for exploring and executing rhythm-based tunes. It integrates a frontend interface with a backend JSON server to deliver a smooth experience. The project demonstrates practical knowledge of Node.js, dependency management, and server integration. The outcome is a successfully running application that highlights key concepts of modern web development.

# Introduction

Music is an integral part of human culture and daily life. With the growing reliance on technology, applications that provide melodic support have become increasingly relevant. 'Rythamic Tunes' was developed as a melodic companion platform, showcasing the ease of integrating frontend design with a simple backend server. The project not only enhances the user’s musical experience but also strengthens the developer’s understanding of web technologies and server integration.

# Objectives

* To design and implement a web-based melodic companion application.
* To provide an easy-to-use platform for exploring rhythm-based tunes.
* To integrate frontend functionalities with a JSON server backend.
* To demonstrate Node.js package management and server setup.

# System Requirements

Software Requirements:

* Node.js LTS version
* Visual Studio Code
* JSON Server
* Web Browser (Chrome/Edge/Firefox)

Hardware Requirements:

* Laptop/PC with minimum 4GB RAM
* Windows / macOS Operating System

# Methodology

1. Download and install Node.js from the official website.
2. Extract the project code folder from the provided zip file.
3. Open the project folder in Visual Studio Code.
4. Run 'npm install' in the terminal to install dependencies.
5. Execute the project with 'npm run dev'.
6. Create and start the JSON server using 'json-server --watch db.json --port 3000'.
7. Access the application at http://localhost:5173.

# Modules / Features

* Frontend: Provides user interface for accessing Rhythmic Tunes.
* Backend: JSON server managing data storage and retrieval.
* Execution Flow: Smooth integration of frontend and backend using Node.js.
* Interactive Platform: Ability to run locally with server support.

# Results & Output

The project was successfully executed. The application runs on http://localhost:5173, while the JSON server runs on port 3000. The integration works seamlessly, and the application delivers a functional melodic companion platform. Screenshots of the output can be attached here for reference.

# Conclusion

'Rythamic Tunes – Your Melodic Companion' demonstrates a successful integration of frontend and backend technologies using Node.js and JSON server. The project has provided hands-on experience with modern web development tools and enhanced the understanding of dependency management, server setup, and execution flow. It has been a valuable learning experience.

# Future Enhancements

* Adding user authentication and login functionality.
* Expanding the database with multiple rhythm and tune collections.
* Deploying the application online for wider accessibility.
* Integrating additional multimedia features.

# References

* Node.js Official Documentation – https://nodejs.org/en/docs/
* SmartInternz Project Portal
* Naan Mudhalvan Resources