**SmartExpense Tracker – Application Overview**

**Project Pitch**

SmartExpense Tracker is a web-based application that simplifies personal finance management by helping users track expenses and analyze spending habits. With an intuitive interface, users can categorize transactions, visualize financial data through bar and pie charts, and set budgets to stay on top of their finances.

**Reason for Choosing This Project**

Many individuals struggle with tracking their spending, leading to financial stress and poor budgeting. Traditional methods can be tedious, discouraging users from maintaining financial discipline. SmartExpense Tracker offers a simple, interactive, and user-friendly solution to make personal finance management easier and more engaging.

**Project Benefits**

* **Financial Awareness:** Helps users track expenses, categorize spending, and identify areas to save money.
* **Improved Budgeting:** Allows users to set financial goals and receive alerts when approaching their limits.
* **Data-Driven Insights:** Bar and pie charts provide clear spending trends for better financial decision-making.
* **Accessibility & Convenience:** A web-based platform accessible from any device, ensuring seamless expense tracking.

**Front-End Overview**

* Built using HTML, ensuring a simple and accessible user interface.
* Allows users to interact with the system via forms and visual reports.
* Connected to the backend through Python Flask to process requests and display data.
* Hosted on AWS EC2, ensuring scalability, reliability, and efficient service delivery.

**Back-End Overview**

* **Python Flask** handles backend logic and facilitates communication between the front end and the database.
* **Database:** The application uses MongoDB, a NoSQL database that efficiently stores and retrieves financial data, allowing for scalability and flexible data handling.
* **Cloud Deployment:** The backend services are deployed on AWS EC2, leveraging its computing power to handle user requests efficiently.

**Functional Requirements**

* **User Registration & Authentication:** Secure account creation, login, and profile management.
* **Expense Tracking:** Users can add, edit, and categorize expenses with details like date, amount, and notes.
* **Data Visualization:** Bar and pie charts help users analyze spending trends.
* **Budget Management & Notifications:** Users can set monthly budgets and receive alerts when approaching or exceeding limits.

**Non-Functional Requirements**

* **Performance:** Transactions and page loads must complete within 2 seconds.
* **Scalability:** Designed to handle increasing users and transactions with MongoDB ensuring efficient data storage.
* **Security:** HTTPS encryption and password hashing ensure secure data handling.
* **Availability:** 99.9% uptime with deployment on AWS EC2, ensuring high availability and global accessibility.