WEB-HACKATHON-2.0

Our Problem Statement- AI SMART EXPENSES & PAYROLL MANAGEMENT

Our Idea:

Team 1022

Project Summary — GOJI: AI-Powered Expense and Payroll Management System

GOJI is designed as an end-to-end AI-powered web application that streamlines organizational expense tracking and payroll operations while delivering intelligent financial insights. The platform integrates modern web technologies, machine learning models, and workflow automation to create a scalable and data-driven financial management ecosystem.

On the backend, the system is built using FastAPI (Python), enabling high-performance API development for handling financial data, payroll processing, and ML model integration. The frontend is developed with ReactJS, delivering an interactive dashboard that visualizes expenses, payroll summaries, and financial health metrics in real time.

The application leverages PostgreSQL for structured financial data storage and Docker for containerization, ensuring portability, scalability, and consistent deployment across environments.

A key component of GOJI is its workflow automation layer, where Apache Airflow is used to schedule and manage DAG-based payroll pipelines. This ensures timely salary processing, automated calculations, and reliable task orchestration without manual intervention.

From an AI perspective, the platform incorporates multiple machine learning models built using TensorFlow and Scikit-learn, including:

Expense Categorization Model — Automatically classifies expenses into predefined financial categories.

Burnout Prediction Model — Analyzes payroll and workload patterns to identify potential employee burnout risks.

Cash Flow Forecasting Model — Predicts future inflows and outflows to support financial planning.

Financial Health Scoring Engine — Generates an overall financial wellness score based on spending, liquidity, and payroll stability.

Additionally, **the system integrates OpenAI APIs** to generate natural-language summaries of dashboard insights, enabling stakeholders to quickly interpret complex financial data through concise AI-generated reports.

Overall, **GOJI combines full-stack development, ML intelligence, and automated workflows** into a unified web application that enhances financial visibility, optimizes payroll operations, and supports proactive decision-making.