

Project Proposal: E-Commerce Analytics Dashboard

Introduction: Our project aims to develop an **E-Commerce Analytics Dashboard** that allows users to upload their sales data (Excel or CSV), process it, and view actionable insights through interactive visualizations. Users can log in, manage their data, and revisit historical dashboards for trend analysis and reporting. This project is designed to offer a user-friendly interface powered by advanced data analytics.

Overall Description of the Project: The **E-Commerce Analytics Dashboard**, branded as "**davids**", will streamline how e-commerce businesses, particularly Shopify merchants, gain actionable insights from their sales data. The project combines robust backend processing, an intuitive frontend interface, and seamless data storage to deliver a powerful tool for merchants to analyze and act upon their business data.

The **frontend** will be built with **Next.js**, ensuring a responsive, modern, and fast user experience. For styling, **TailwindCSS** will provide a clean, professional design, while **Plotly.js** will generate interactive visualizations, such as bar charts, line graphs, and pie charts. The **backend** will be powered by **FastAPI**, chosen for its speed and simplicity in creating RESTful APIs. **Pandas** will handle data cleaning and transformation, while **PostgreSQL** serves as the database, securely storing user data, uploaded reports, and generated analytics. User authentication will be managed with **NextAuth.js** on the frontend and **FastAPI Users** on the backend, ensuring secure access and personalized experiences.

The application focuses on several key user stories:

1. A **new user** can register, log in, and upload an Excel or CSV file containing their Shopify sales data.
2. Upon upload, the system will process the file to display real-time insights, including total sales, top-performing products, and regional sales distribution.
3. Users can access a **historical dashboard** that stores previously uploaded files and analytics for comparison and trend analysis.
4. A **dashboard user** can apply filters such as date range, product category, and region to customize their view of the data.

With these capabilities, "davids" will provide Shopify merchants with an easy-to-use platform to understand their sales trends, improve decision-making, and boost profitability.

Justification of the Project: The need for this project stems from gaps in existing Shopify analytics tools and the growing demand for user-friendly data solutions. Shopify merchants often rely on either the platform's limited built-in analytics or expensive, overly complex

third-party apps. "davids" addresses this gap by offering a lightweight, accessible, and cost-effective alternative tailored to small and medium-sized businesses.

From my professional background in managing databases for large-scale e-commerce operations, I have firsthand knowledge of the challenges businesses face in deriving actionable insights from their data. My experience includes building custom solutions for operational efficiency, which directly informs the design of this project.

Additionally, the Shopify App Store presents significant opportunities for innovation. Despite a competitive landscape, many analytics apps fail to provide scalable, easy-to-use platforms for merchants who lack technical expertise. "davids" fills this void by focusing on simplicity, interactivity, and accessibility, ensuring that merchants can quickly adapt and use the tool without steep learning curves.

By leveraging my experience and addressing these market gaps, "davids" has the potential to become a preferred choice for Shopify merchants seeking actionable insights from their sales data.