Receipt and Invoice Digitizer

Milestone 3 – Dashboard & Reporting

TEAM - A

Team Members:

- Harini Kaveti
- Abhay Maurya
- Vaibhavi Vernekar
- Pattem Dharmika

1. Problem Statement:

Although invoice data was successfully extracted and stored in the database, critical gaps remained in data presentation and business insights. There was no centralized dashboard, no visual spending trends, no structured monthly summaries, and limited reporting/export functionality.

2. Milestone 3 Objectives:

- Build an interactive Stream lit dashboard for centralized data access.
- Implement monthly spending analytics and KPI calculations.
- Add CSV, Excel, and PDF export functionality.
- Create vendor and item-level business insights.
- Provide a clean, responsive, and user-friendly interface.

3. Team Roles & Responsibilities:

Harini Kaveti – Analytics Module

- Designing analytics logic
- Monthly spending calculations
- Vendor and item statistics
- Data aggregation and trend analysis
- KPI calculation and month-over-month comparison

Abhay Maurya – Visualization Module

- Designing and implementing charts
- Creating Plotly visualizations
- Ensuring clarity and readability
- Applying consistent design themes
- Building reusable chart functions

Vaibhavi Vernekar – Dashboard & UI

- Structuring dashboard layout
- Implementing filters and user controls
- Ensuring responsive UI design
- Integrating backend with frontend
- Displaying KPIs and insights

Pattem Dharmika – Reporting & Export

- Implementing CSV, Excel, and PDF exports
- Structuring summary and detailed reports
- Ensuring export accuracy
- Handling data validation and error management
- Maintaining secure data export process

4. Module Description:

1. Analytics Module

The Analytics Module is responsible for processing structured invoice data and generating meaningful financial insights.

- Calculates key performance indicators (KPIs) such as:
    - Total Spend
    - Average Spend per Month
    - Total Number of Transactions
    - Unique Vendor Count
    - Average Transaction Value

2. Visualization Module

The Visualization Module converts processed data into interactive graphical representations.

- Generates monthly spending trend line charts.
- Displays vendor-wise and category-wise distribution using bar and pie charts.
- Creates payment method analysis charts.
- Shows transaction frequency using histograms.
- Presents item-level insights for detailed financial breakdown.
- Uses Plotly to enable zooming, hovering, and interactive exploration.
- Maintains consistent theme, layout alignment, and readable chart labels.
- Supports responsive resizing for better user experience.

3. Dashboard & UI

The Dashboard & UI module provides a centralized and user-friendly interface for interaction.

- Integrates analytics results and visualizations into a single dashboard view.
- Displays KPI cards for quick summary insights.
- Provides filters such as date range, vendor selection, and category filtering.
- Allows real-time updates when filters are applied.
- Ensures clean layout with proper spacing and structured sections.
- Connects frontend components with backend processing logic.
- Designed using Streamlit for fast deployment and easy maintainability.

4. Reporting & Export Module

The Reporting & Export Module manages structured report generation and secure data downloads.

- Supports exporting financial data in:
    - CSV format
    - Excel format
    - PDF format
- Provides both Summary Reports (aggregated KPIs) and Detailed Reports (transaction-level data).
- Ensures correct formatting and data consistency in exported files.

5. System Architecture:

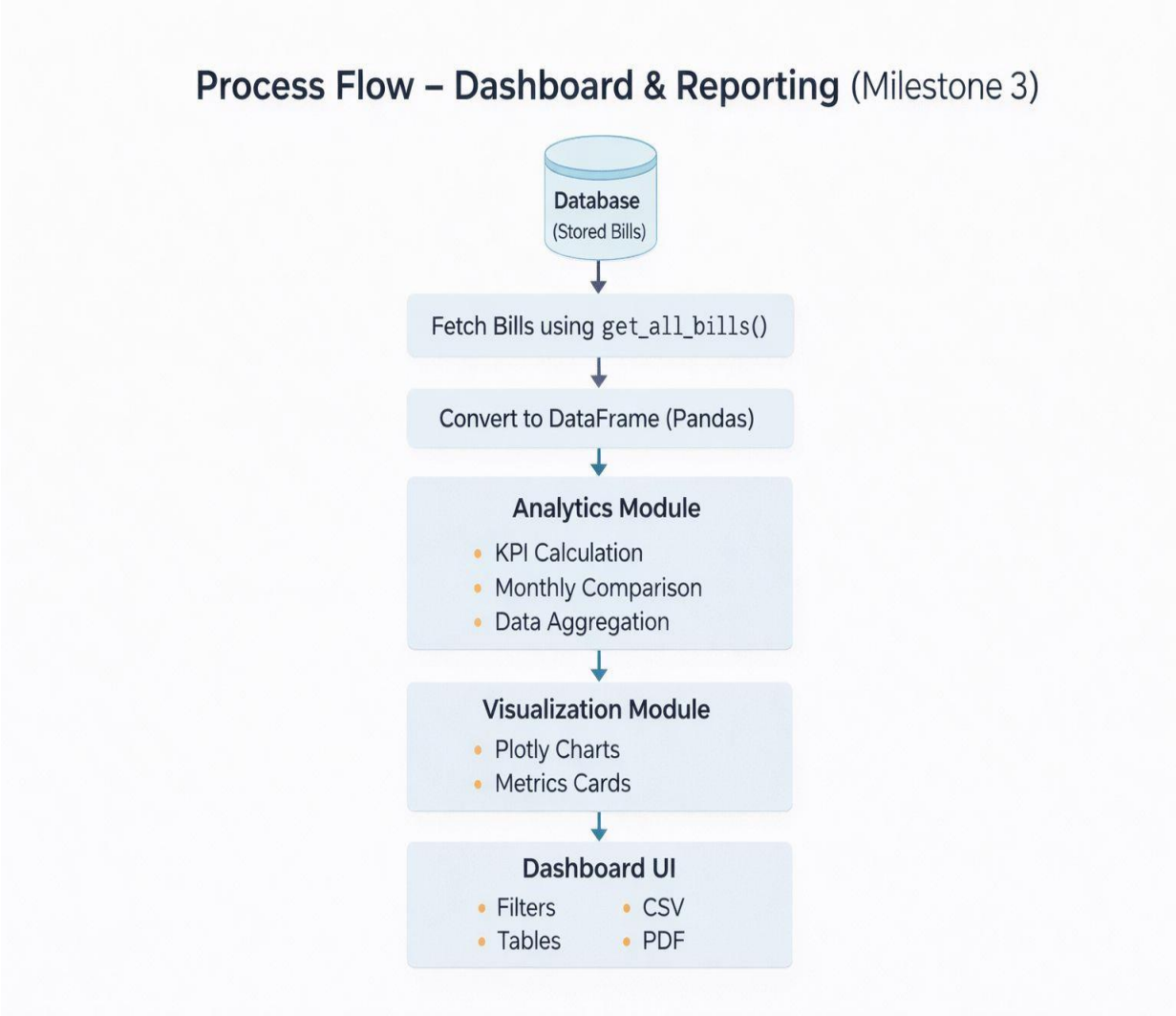
The system follows a three-layer architecture:

- Presentation Layer – Dashboard & UI
- Application Layer – Business Logic & Analytics
- Data Layer – Database & Storage

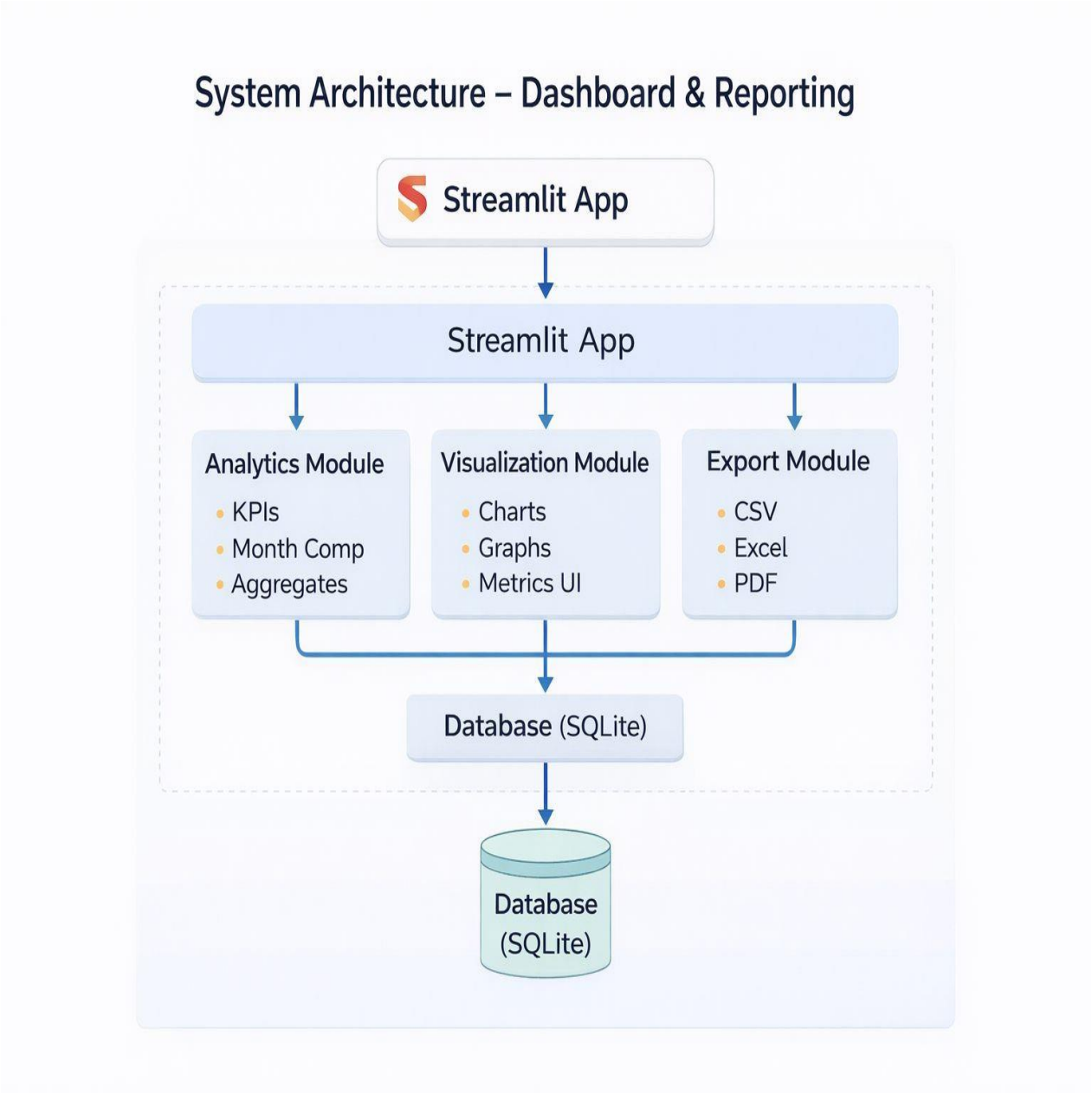
Data flows from the user interface to backend processing, then to database retrieval, and back to the dashboard for visualization and reporting.

The architecture of a system reflects how the system is used and how it interacts with other systems and the outside world. It describes the interconnection of all the system's components and the data link between them. The architecture of a system reflects the way it is thought about in terms of its structure, functions, and relationships.

7. Process Flow:



8. System Architecture:



9. Development Timeline (Weeks 5–6):

Week 5 – Planning & Structure

- Designed dashboard layout and structure
- Created analytics logic
- Defined data flow and processing steps
- Planned visualization and export features

Week 6 – Development & Testing

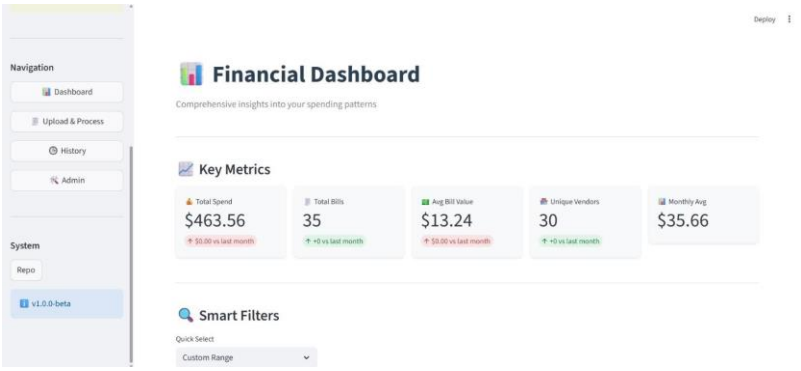
- Implemented KPIs
- Added export functionality (CSV/Excel/PDF)
- Integrated frontend and backend
- Performed testing and debugging
- Final validation and deployment preparation

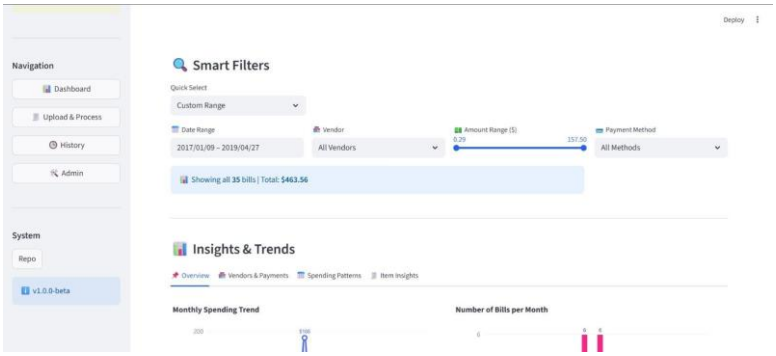
10. Conclusion:

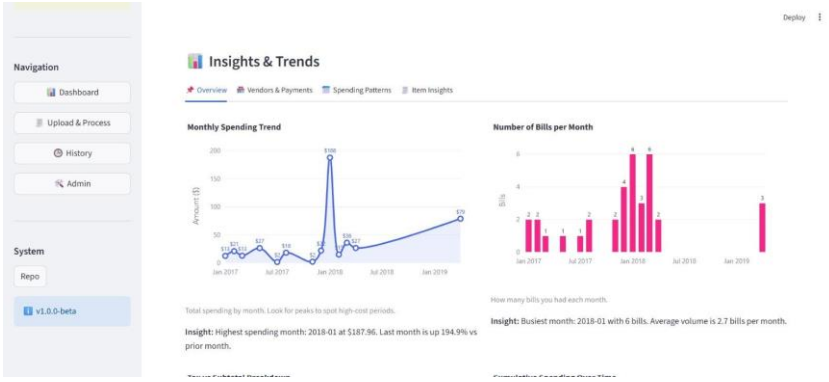
The successful completion of Milestone 3 marks the transformation of the Receipt and Invoice Digitizer system from a data extraction tool into a complete financial analytics platform. The implementation of a centralized Streamlit dashboard enabled structured data visualization, real-time KPI monitoring, and improved decision-making support.

The integration of analytics logic, interactive Plotly visualizations, and secure export functionality (CSV, Excel, and PDF) ensures that users can not only view insights but also generate professional reports for business use. The modular three-layer architecture enhances scalability, maintainability, and performance.

10. Final Output:







11. References

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