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Team Arcane

SmartPOS

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Problem Statement

The AI-integrated POS system aims to solve key challenges faced by small vendors, including inventory overstocking and stockouts, lack of actionable sales insights, manual data entry errors, and difficulties in managing multiple sales channels. It addresses the issue of poor customer experience due to long wait times or unavailable products, and ensures seamless operation even in areas with limited internet connectivity through offline functionality. Additionally, it helps vendors forecast demand, streamline stock audits, manage consistent pricing, and generate detailed reports to track business performance effectively.

Inventory Overstocking and Stockouts

The system will help predict inventory needs based on historical data and sales trends, reducing the chances of overstocking or running out of products.

Limited Internet Connectivity

In regions with unstable or no internet access, transactions can come to a halt. The offline functionality ensures that the POS system continues to work even without internet, ensuring seamless operation

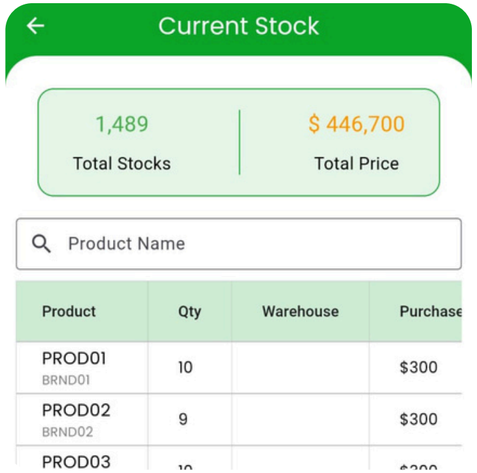
Limited Reporting Capabilities

Traditional systems may offer limited reporting, making it difficult to track business performance. The AI system can generate customized reports with deep insights into sales, stock, and customer behavior

Proposed Solution

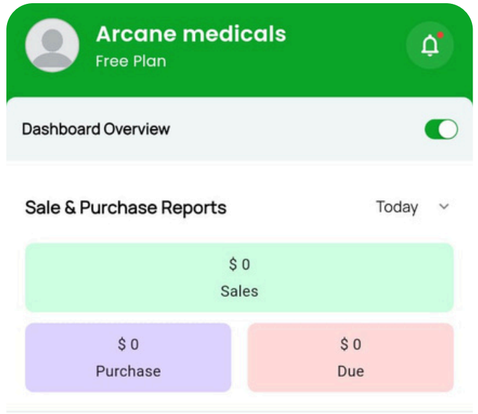
Goal One

To predict and maintain optimal stock levels, reducing overstocking and stockouts by leveraging AI-driven demand forecasting.



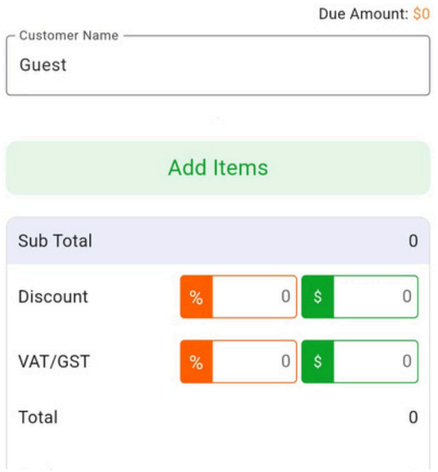
Goal Two

To provide vendors with actionable insights into customer preferences, sales trends, and performance metrics, enabling data-driven decision-making.



Goal Three

To ensure uninterrupted transaction processing and access to essential features, even in areas with limited or no internet connectivity.



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Technology Used

Firebase

Database connected with

Flutter

Applicaation Built with

Gemini AI API

For prototype AI integeration

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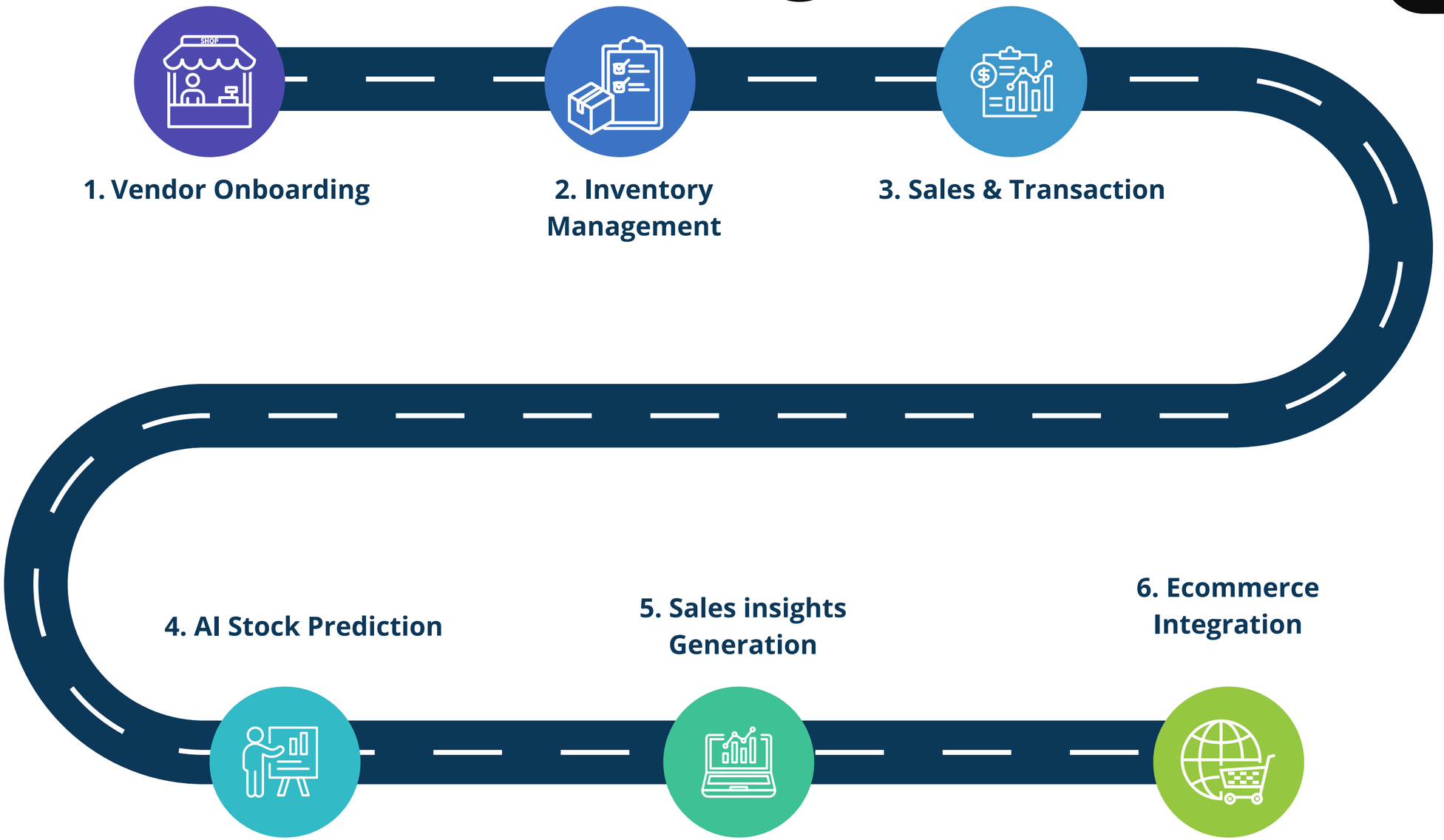
Flow Diagram



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Challenges Faced

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Onboarding Vendors

Small vendors may be resistant to adopting a digital POS system due to a lack of technological familiarity or fear of changing their traditional methods.

Connectivity

Implementing a reliable offline mode that can manage transactions and store data locally while ensuring smooth synchronization once internet connectivity is restored can be a significant technical challenge.

AI Reports

Producing accurate AI-generated sales insights and stock predictions is a challenge, especially when working with limited or incomplete data

Data Security

Ensuring that the system protects data both online and offline is crucial to maintaining trust and compliance with data protection regulations.

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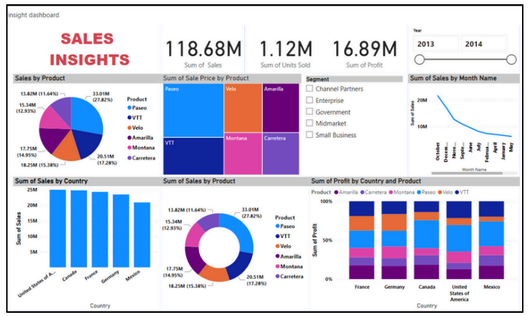
Advantages & Benefits

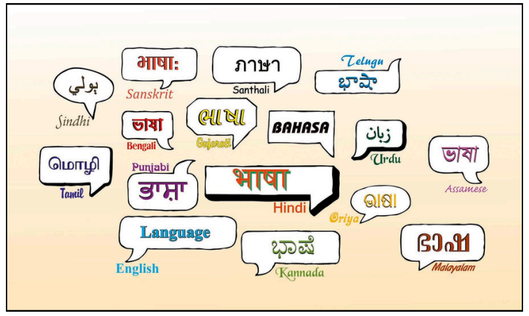
- AI Insights: Optimize stock and decision-making with advanced sales analytics.
- Offline Functionality: Manage transactions seamlessly without internet access.
- Increased Revenue: Boost sales by reaching more customers online.
- Regional Support: Access multilingual and localized support for diverse regions.



AI Driven Insights

Offline Functionality

Increased Revenue



Regional support

Future Scope

Digital Transformation

Beyond managing physical store transactions, the POS system can evolve to support e-commerce functionality, enabling vendors to set up online stores and reach a broader customer base.

E-commerce Integration

Integrating the POS system with major e-commerce platforms like Bigbasket, Flipkart, and Shopify could be another important step. This would allow vendors to manage both in-store and online sales from a single system, synchronizing inventory, sales, and order fulfillment across all channels.

AI-Enhanced CRM

This would allow vendors to collect and analyze customer data to offer personalized recommendations, loyalty programs, and targeted promotions. The system could automatically generate insights into customer buying behavior, helping vendors retain customers, improve satisfaction, and drive repeat business.

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Thank You!

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