

# E-COMMERCE PLATFORM FOR SAARTHI PEDAGOGY SCHOOL CASE STUDY

An integrated online system that simplifies the process of buying and distributing school materials such as books, stationery, and uniforms through a centralized platform.



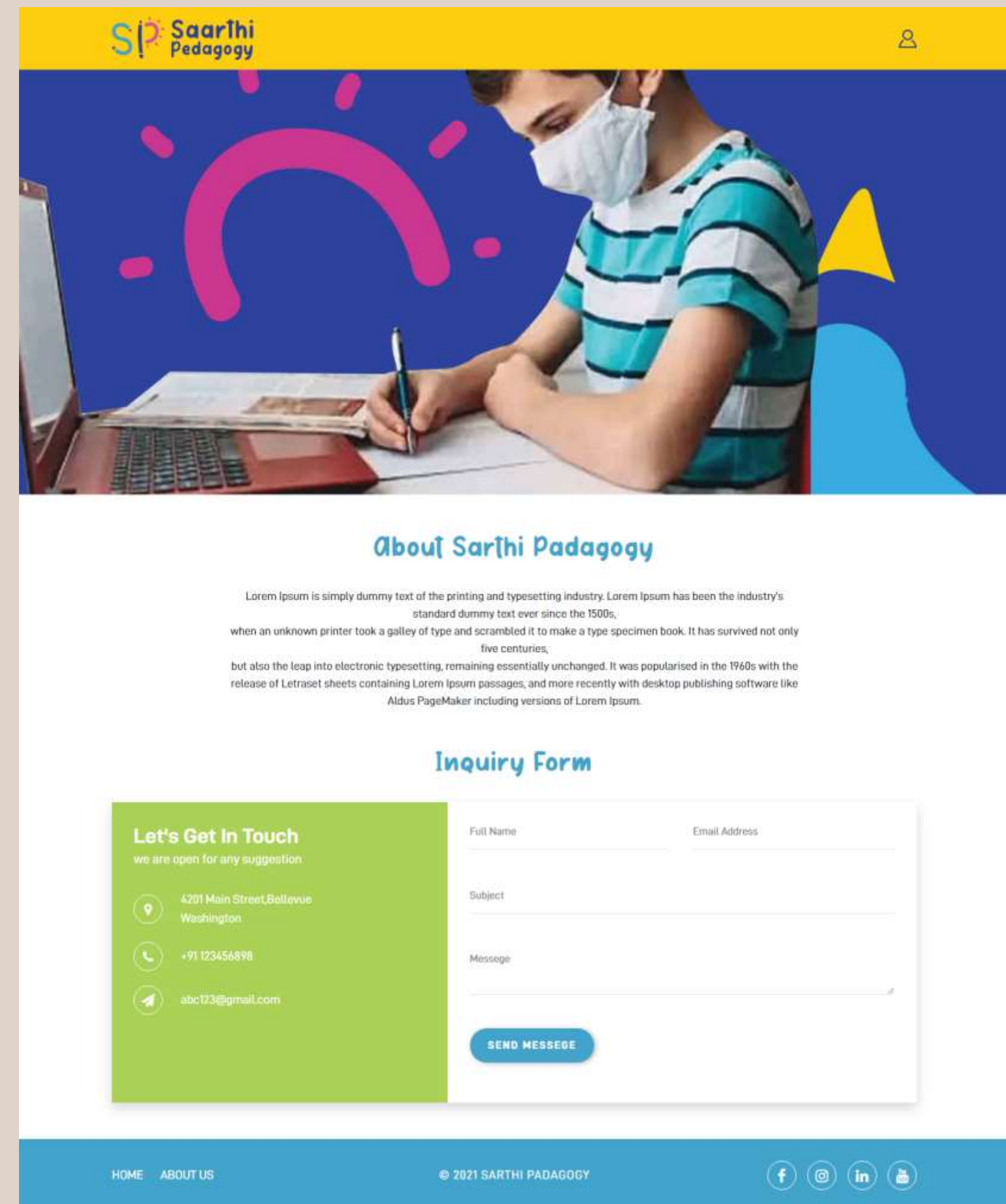
# INTRODUCTION

- ✓ The Platform is a comprehensive online solution designed to simplify the school supply process for all stakeholders – schools, distributors, suppliers, and parents.
- ✓ It centralizes the supply chain, allowing distributors to manage school-specific product catalogs, schools to track sales and commissions, and suppliers to monitor distribution performance.
- ✓ Parents can access a dedicated store link for their child's school, view class - wise product bundles, and make secure purchases from the comfort of their homes.
- ✓ By connecting every participant in one digital ecosystem, the platform ensures transparency in pricing, automated commission calculations, and a smooth, data-driven purchasing experience.



# PROJECT OBJECTIVE

- ✓ To create a complete digital solution that connects schools, distributors, suppliers, and parents in one ecosystem.
- ✓ The goal is to make school shopping more convenient, ensure transparency in pricing and commissions, and automate most of the manual coordination tasks.



# PROJECT SCOPE

✓ The system serves five main user groups:

1. **Admin:** Controls users, products, and reports.
2. **Distributor:** Handles school assignments, product links, and payments.
3. **Supplier:** Monitors stock and distributor transactions.
4. **School:** Tracks commissions and overall sales.
5. **Customer:** Purchases products through a personalized school store.



# SYSTEM ARCHITECTURE

- ✓ The platform follows a modular web-based architecture. Data is stored and retrieved dynamically using structured APIs to ensure quick communication between backend and frontend components.
- ✓ The design supports real-time dashboards, secure logins, and instant synchronization across all user roles.



# MODULES OVERVIEW

- ✓ The system is divided into multiple panels and interfaces:
  1. **Admin Panel** – For complete control and system configuration.
  2. **Distributor Dashboard** – For order handling and inventory control.
  3. **Supplier Portal** – For monitoring product-wise performance.
  4. **School Dashboard** – For viewing commissions and reports.
  5. **Customer Website** – For browsing, shopping, and tracking orders.



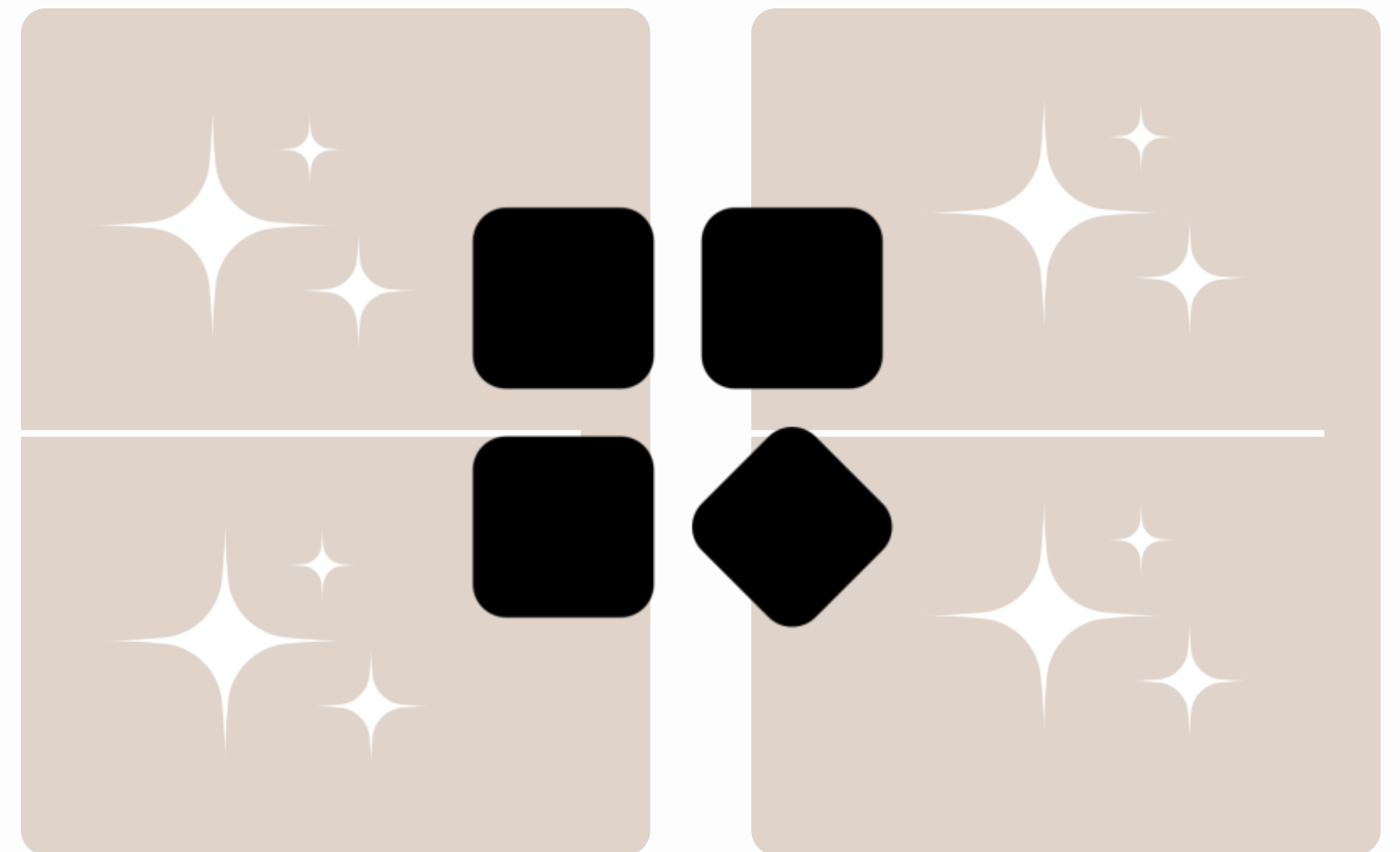
# ADMIN FEATURES

- ✓ Provides a summary dashboard of platform activities.
- ✓ Manages distributors, suppliers, schools, and their permissions.
- ✓ Controls global settings like pricing, charges, and tax rules.
- ✓ Can enable, disable, publish, or restrict specific content.
- ✓ Generates analytics reports and exports them in multiple formats



# DISTRIBUTORS FEATURES

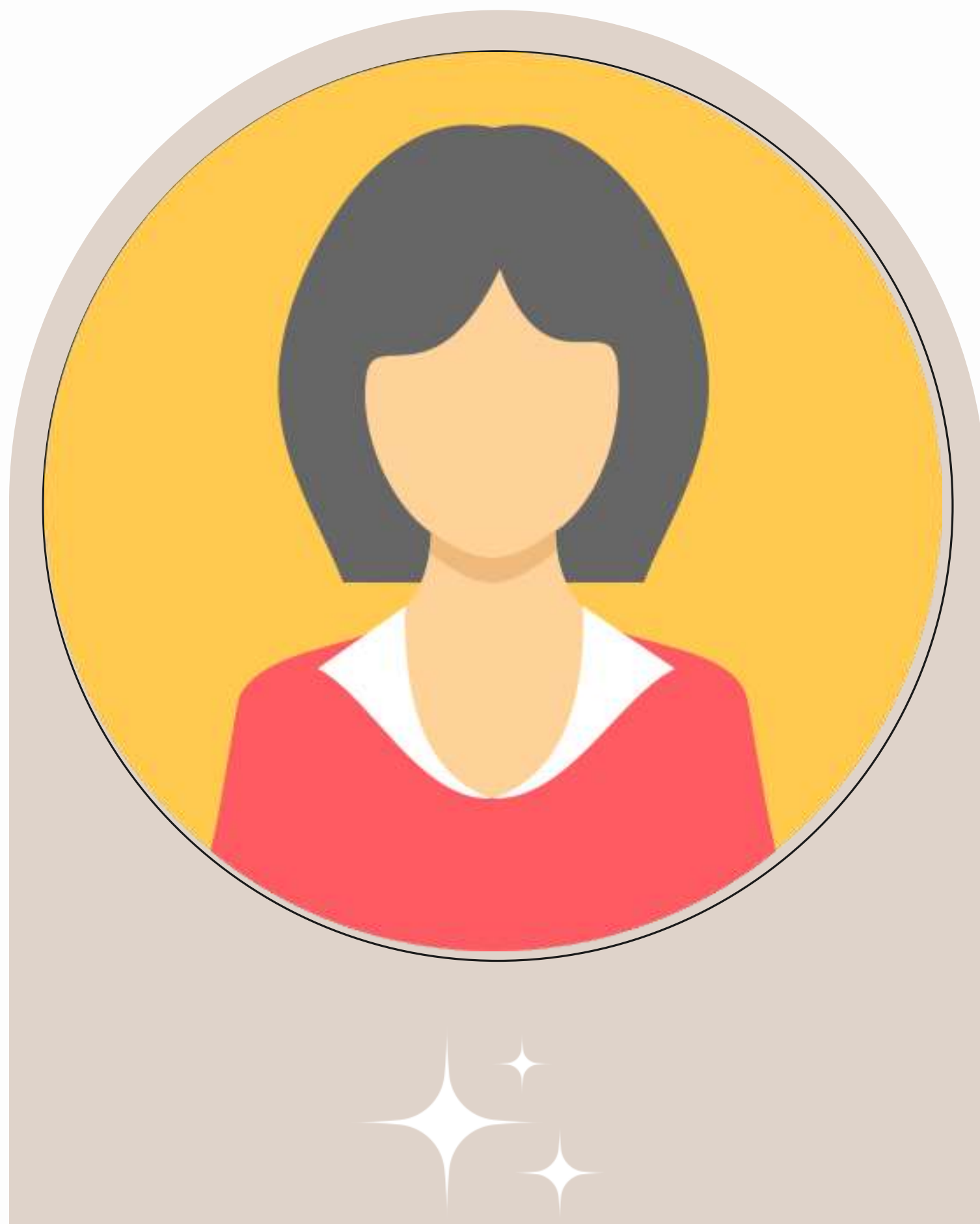
- ✓ Adds and manages school-wise product lists.
- ✓ Updates inventory quantities and tracks product flow.
- ✓ Sets discounts and commissions based on school or product.
- ✓ Monitors payment history and generates order invoices.
- ✓ Accesses data-driven reports to plan stock and sales.





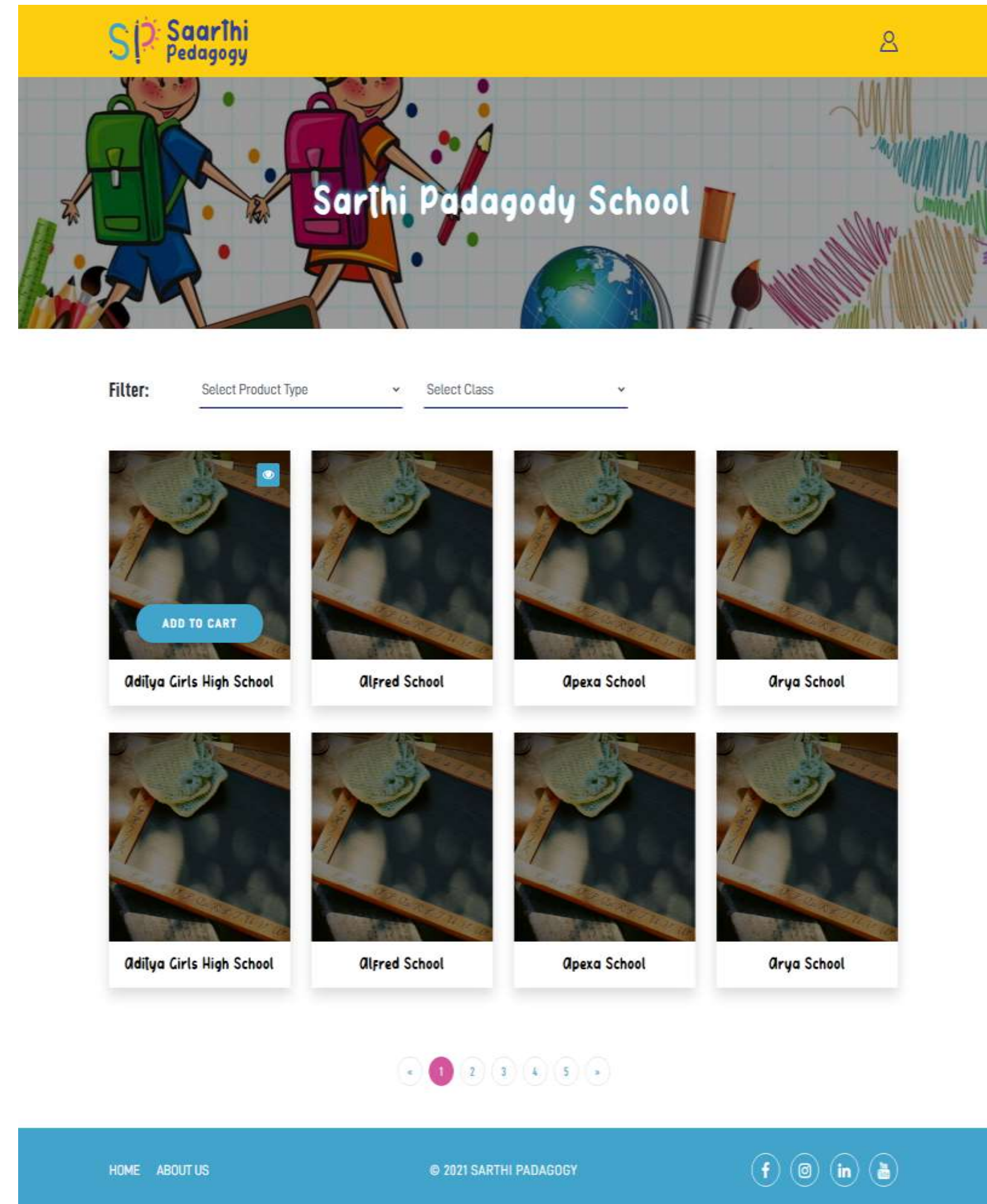
## CUSTOMER FEATURES

- ✓ Customers visit the unique store page of their child's school.
- ✓ View categorized products for each class and subject.
- ✓ Can add products to cart, wishlist, or purchase directly.
- ✓ Multiple payment options and live delivery tracking are available.
- ✓ Users can review past orders and download receipts anytime.



# SUPPLIERS AND SCHOOL FEATURES

- ✓ **Suppliers:**  
Track distributor-wise sales, payments, and remaining stock levels.
- ✓ **Schools:**
  - Monitor real-time commission details, total order values, and distributor settlements through an interactive dashboard.
  - This creates a transparent financial workflow between all stakeholders.



# PRICING AND

## BILLING WORKFLOW

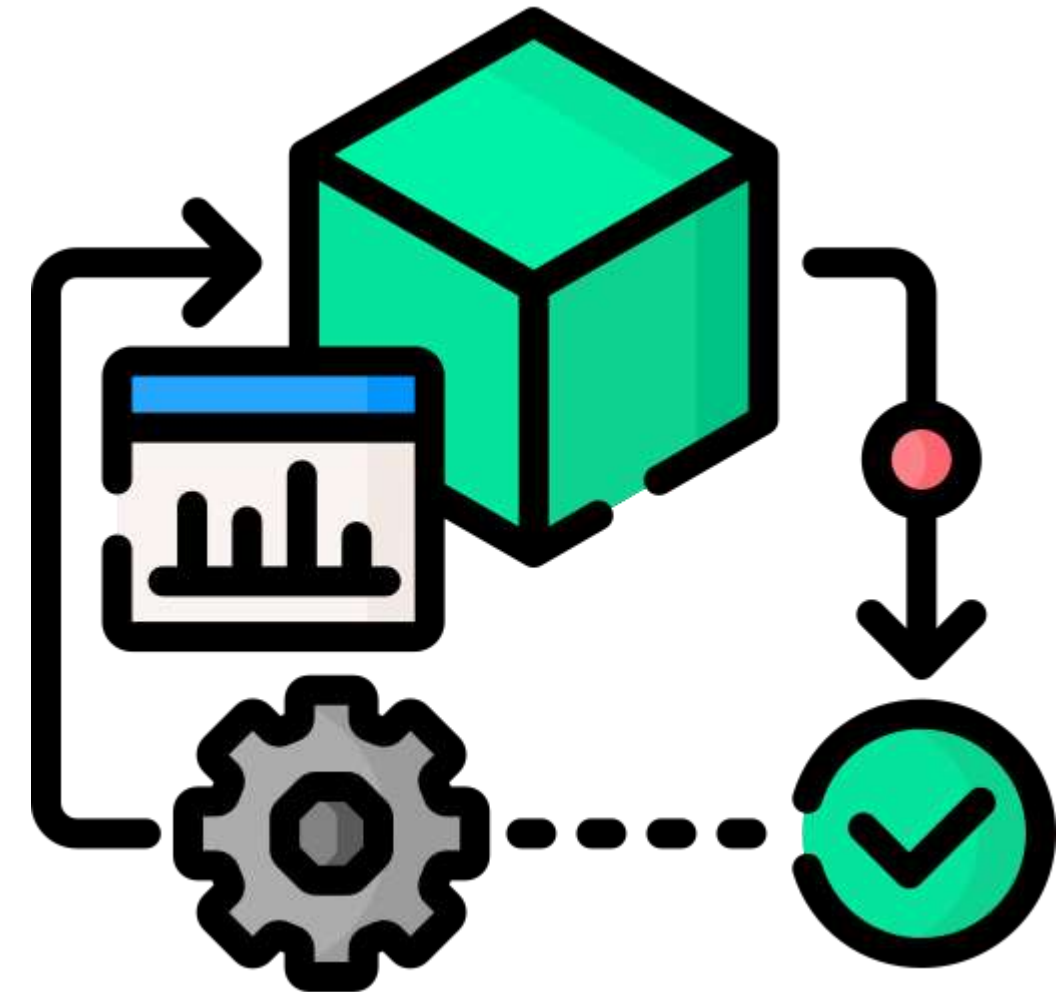
- ✓ The pricing mechanism includes multiple layers: MRP, tax, platform fee, discounts, and commissions.
- ✓ The system automatically calculates all values, generates invoices, and records customer payment digitally.
- ✓ Each transaction is traceable, ensuring clear and accurate billing for all involved parties.





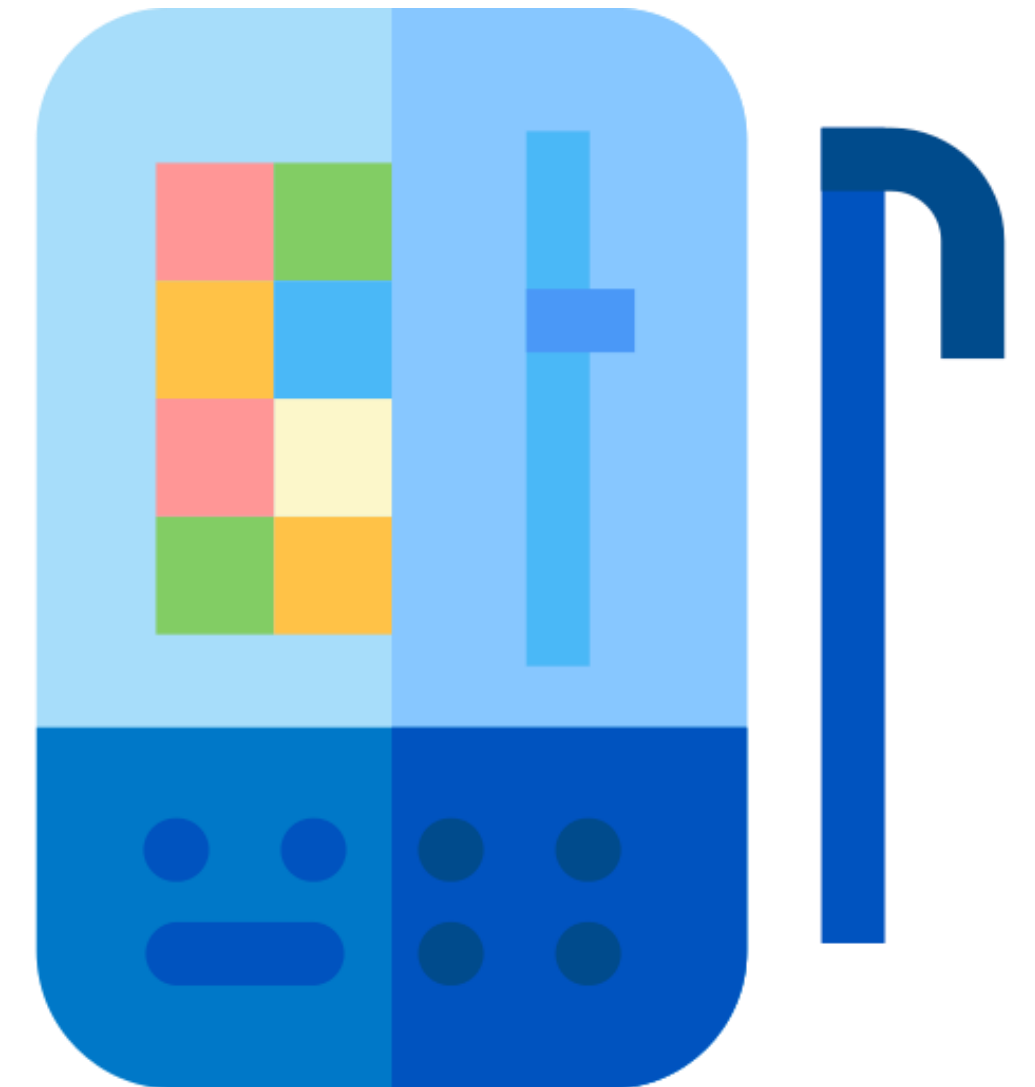
# DATA MODELS

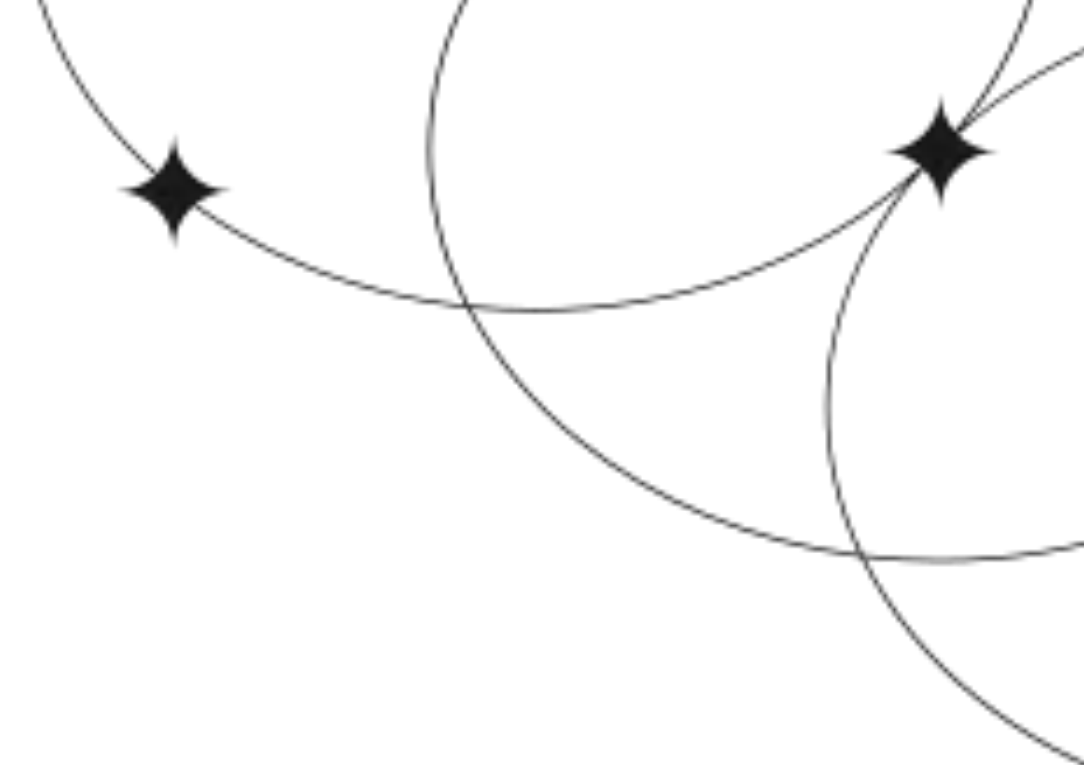
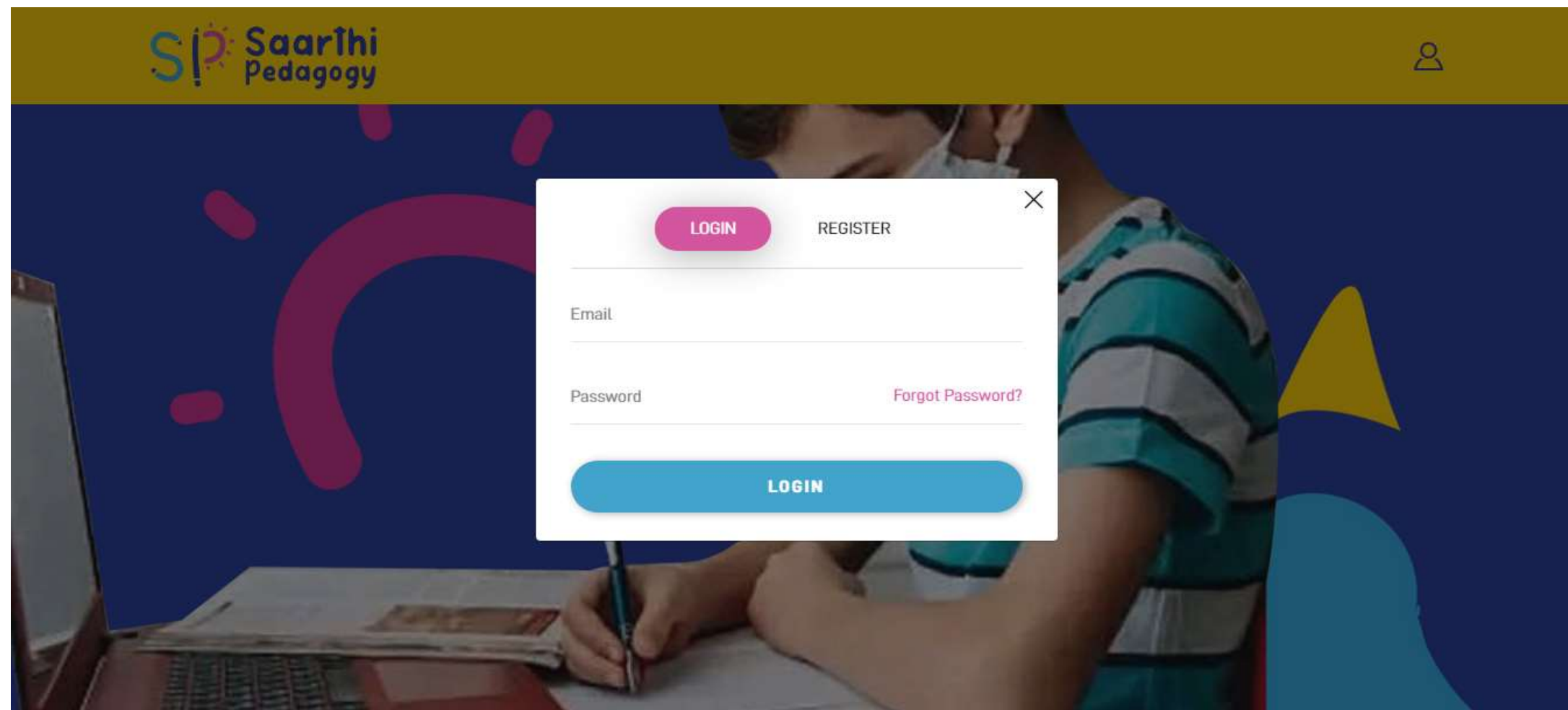
- ✓ The database stores entities like Users, Products, Orders, Schools, and Payments.
- ✓ Each record contains metadata such as creation date, status, and responsible user ID.
- ✓ All financial records remain consistent even if related products or users are later modified or deleted.



# TECHNOLOGY STACK

- ✓ **Backend:** Laravel framework
- ✓ **Database:** MongoDB
- ✓ **Web Server:** Nginx
- ✓ **Security:** Cloudflare and Google reCAPTCHA
- ✓ **Other Tools:** REST APIs, JSON-based data exchange, and automated deployment scripts.

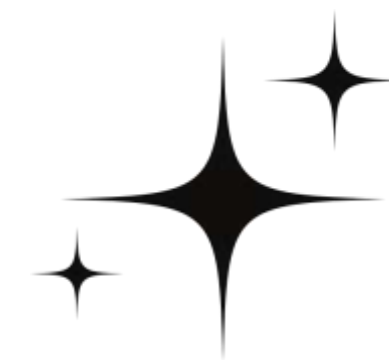




# SECURITY AND PERFORMANCE

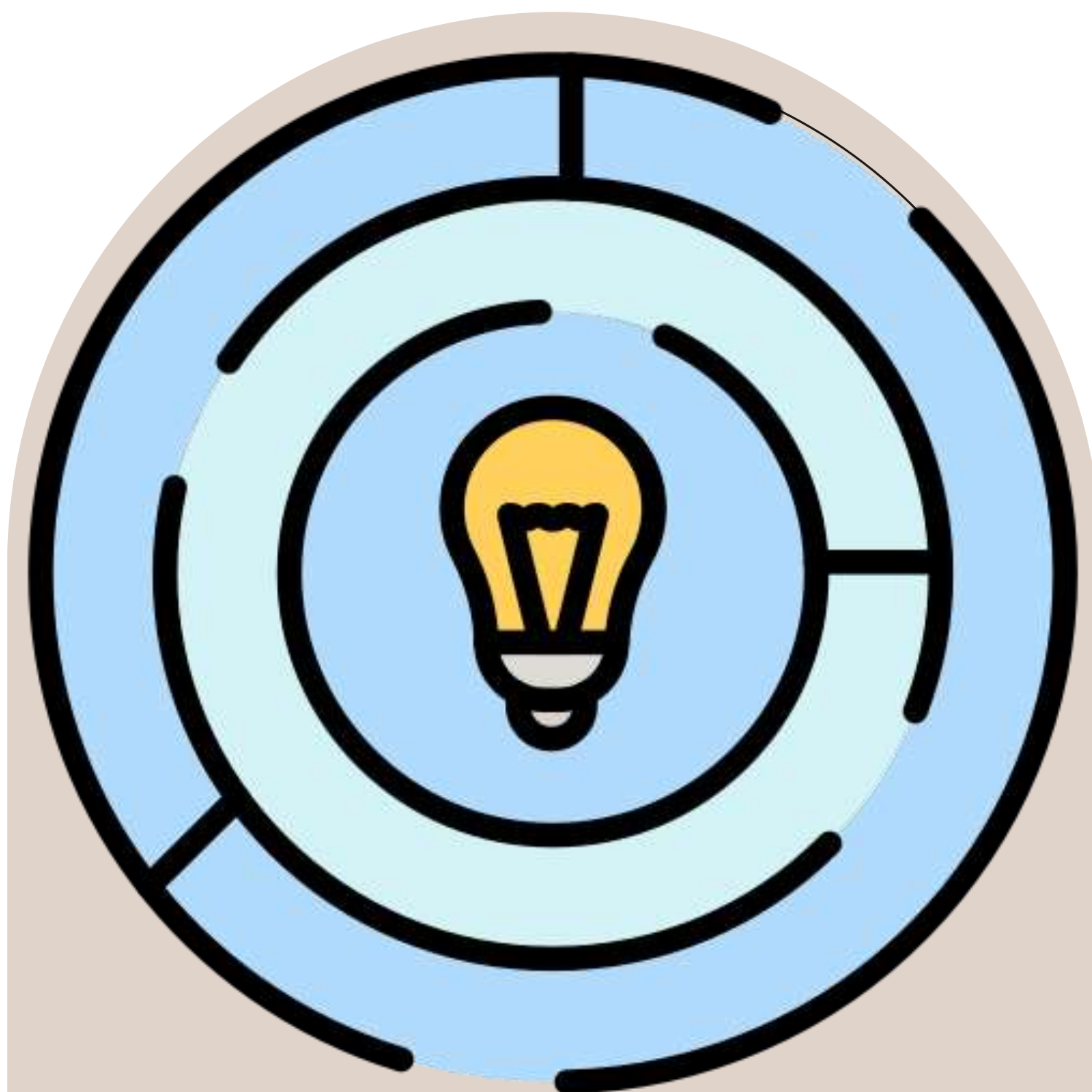
- ✓ Every login uses email verification and one-time passwords for added safety.
- ✓ Role-based access ensures users only view permitted data.
- ✓ Caching and database indexing are implemented to maintain high speed even with thousands of concurrent users.





# CHALLENGES AND SOLUTIONS

- ✓ **Challenge 1:** Complex relationships between schools, distributors, and suppliers.
- ✓ **Solution:** Used structured linking and aggregation pipelines to simplify lookups.
  
- ✓ **Challenge 2:** Frequent price updates impacting orders.
- ✓ **Solution:** Stored snapshot pricing inside order documents.
  
- ✓ **Challenge 3:** Role access conflicts.
- ✓ **Solution:** Implemented a permission-based control layer for each module.



# TESTING AND DEPLOYMENT

- ✓ Unit and integration tests were executed for all modules.
- ✓ The application was deployed on a cloud server with an automated build pipeline.
- ✓ Continuous monitoring ensures uptime, and server alerts detect anomalies instantly for preventive maintenance.



## RESULTS AND IMPACT

- ✓ The platform reduced manual coordination by more than half and improved stock visibility for distributors.
- ✓ Schools receive faster commission updates, and parents experience a smoother purchase flow.
- ✓ Overall, it brought automation, clarity, and convenience to the school supply process.



# CONCLUSION AND FUTURE ENHANCEMENT

- ✓ The system provides a strong foundation for managing educational supply chains efficiently.
- ✓ Future additions may include predictive analytics for demand forecasting, a mobile application for easier access, and AI chat support for customer assistance.



