

Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	19-may-2025 To 30- June- 2025
Team ID	LTVIP2025TMID49768
Project Name	ShopSmart: Your Digital Grocery Store Experience
Maximum Marks	4 Marks

Technical Architecture:

- **Frontend:** Built using HTML, CSS, JavaScript, and React for a responsive user experience.
- **Backend:** Flask or Django handles product data, orders, user sessions, and security.
- **Data Pipeline:** Python scripts for ingestion, validation, and formatting of data.
- **Visualization Layer:** Charts integrated into admin dashboards using tools like Tableau or Chart.js.
- **Integration:** RESTful APIs or GraphQL connect frontend to backend services.
- **Deployment:** Hosted on cloud (AWS, Heroku) with scalable architecture and CI/CD pipelines.
- **Security:** HTTPS, token-based authentication, and access-level control to protect user data.

Technology Stack for ShopSmart

S.No	Component	Description	Technology Used
1	Data Source	Source of product and inventory data	MySQL / Google Sheets / Firebase
2	Data Ingestion	Fetching item/category data into the backend	Python / APIs / Webhooks
3	Data Storage	Stores product details, user data, and orders	PostgreSQL / Firebase / MongoDB
4	Data Preprocessing	Cleansing product names, categorization, and availability tagging	Python (Pandas) / Node.js
5	Data Visualization	Graphical display of orders, sales trends, and inventory	Chart.js / Google Charts / Tableau
6	Backend Framework	Business logic for cart, payments, delivery, etc.	Flask / Django / Node.js
7	Frontend Interface	Customer-facing UI: homepage, cart, checkout, profile	HTML, CSS, JavaScript, React.js
8	Authentication	User login, sign-up, and role-based access control	Firebase Auth / OAuth / JWT
9	Payment Integration	Secure transaction processing	Razorpay / Stripe / PayPal
10	Hosting/Deployment	Hosting the platform and dashboards	Heroku / Vercel / AWS