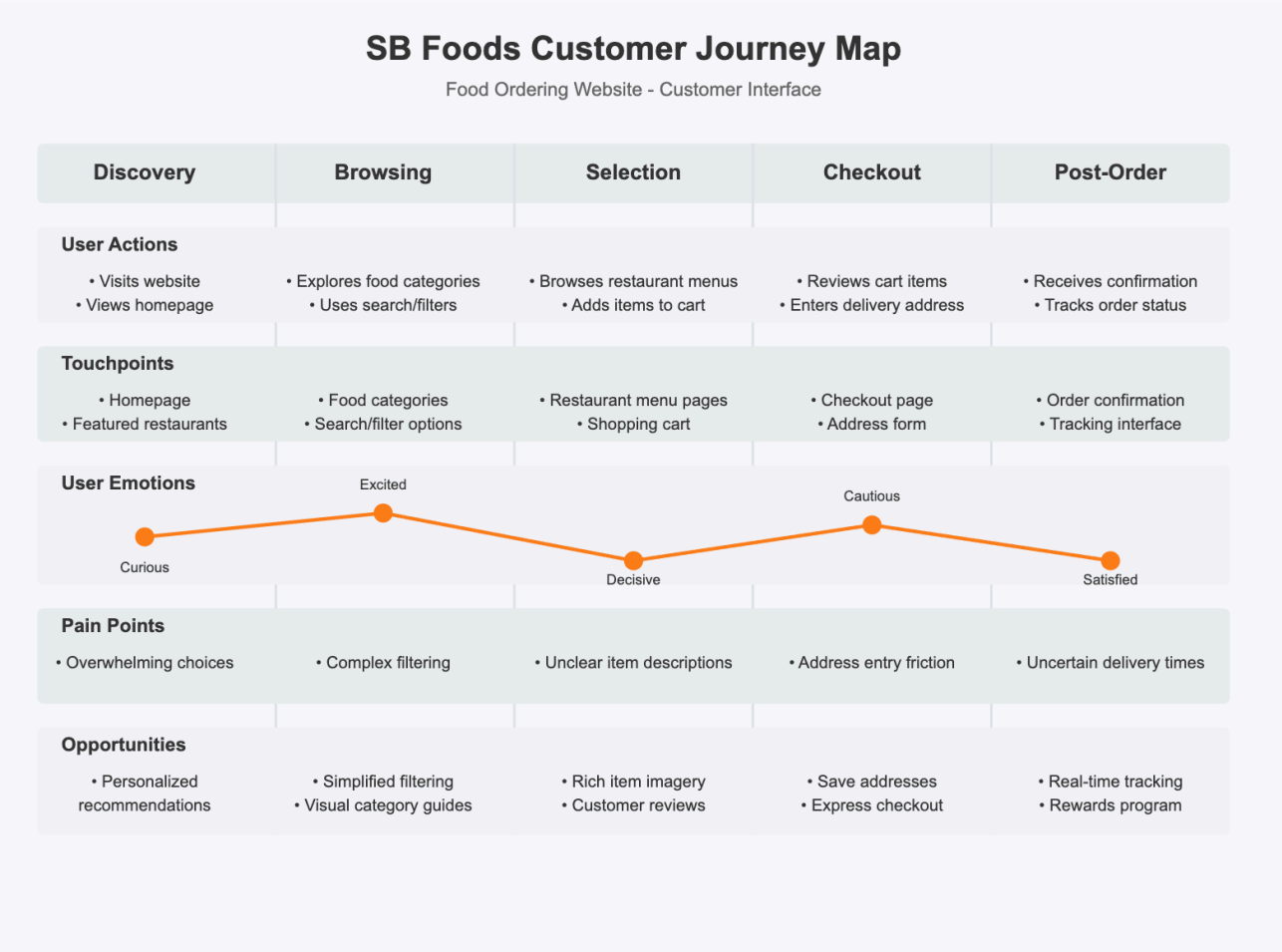
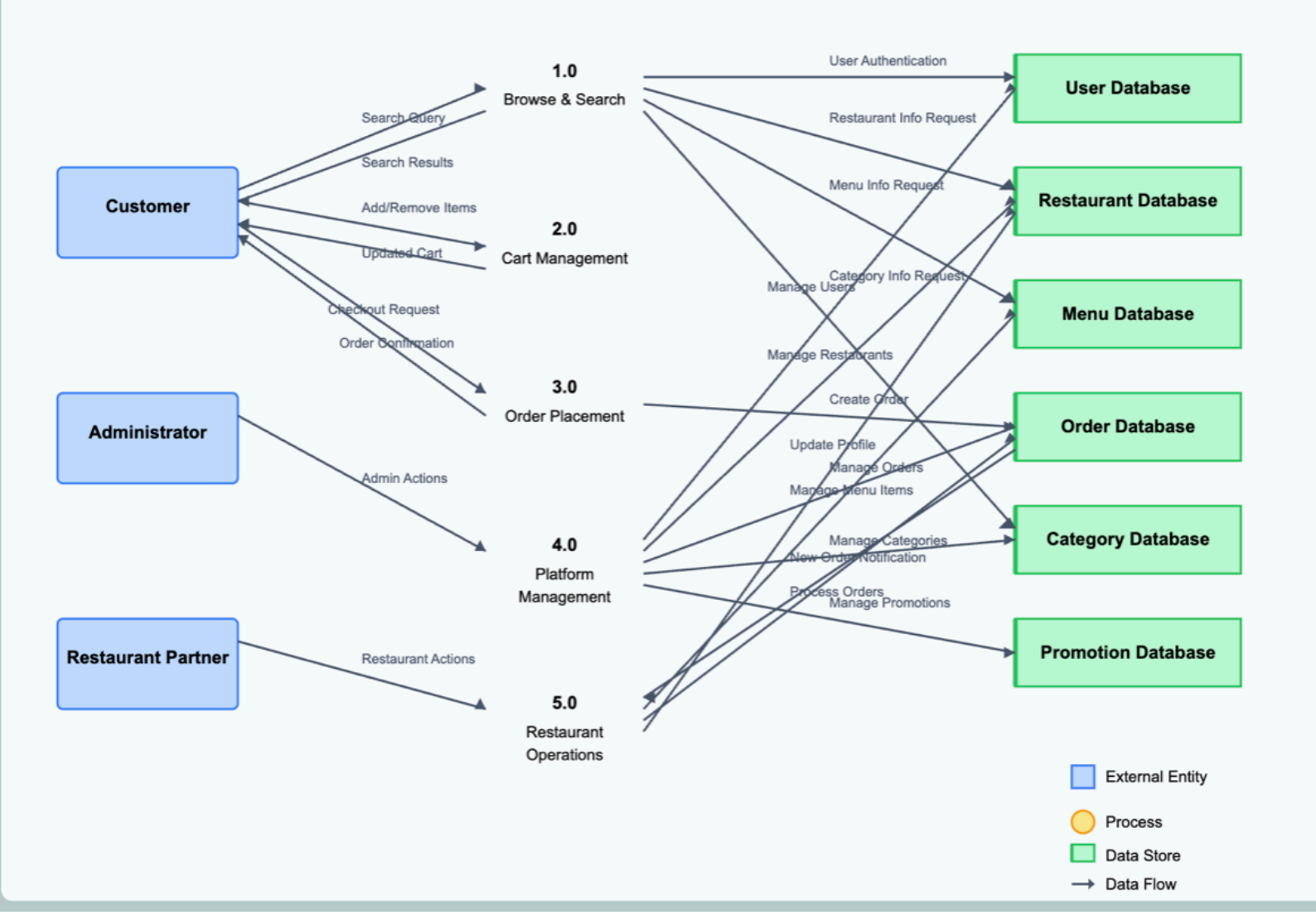
Requirement Analysis

Customer Journey Map -



Data Flow Diagram -



An explanation of the SB Foods website's data flow diagram

SB Foods' data flow diagram (DFD) shows the information flow between the system's three primary interfaces, key operations, and data repositories. Below is a summary of the essential components:
Outside Parties

Clients: Final consumers who peruse menu selections and place orders
Administrators: Platform operations are managed by system managers.

Partners in restaurants: Food suppliers that oversee their menus and orders

Fundamental Procedures

Browse & Search (1.0): Responds to consumer inquiries about eateries, food types, and menu items.
Cart Management (2.0): Handles the addition and deletion of products from the shopping cart.
Order Placement (3.0): Controls order confirmation, address selection, and checkout
Platform Management (4.0): Enables administrators to manage users, orders, restaurants, and system configurations.
Restaurant Operations (5.0): Provides partners with the ability to oversee

Information Storage

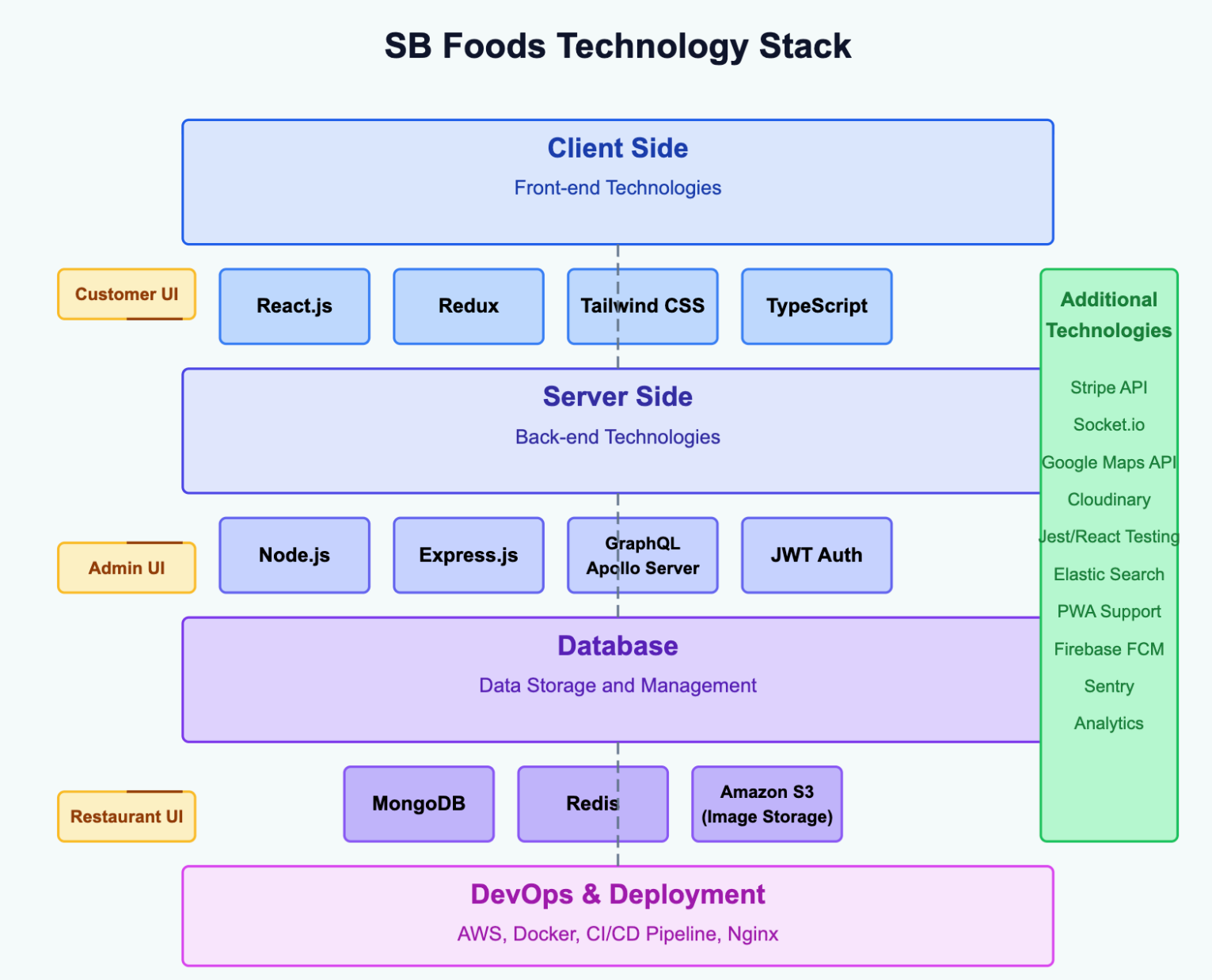
Customer accounts and authentication details are stored in the user database.
establishment Database: Preserves operational information and establishment profiles.
All food items with descriptions, costs, and availability are kept in the menu database.
Order Database: Maintains track of all client orders and their current statuses
Food categories are stored in a category database for browsing and filtering.
Campaigns and discounts are included in the promotion database.

Important Data Flows

The Browse & Search, Cart Management, and Order Placement phases are where customers engage with the site the most.
All databases are accessible to administrators via the Platform Management procedure.
Through the Restaurant Operations process, restaurant partners oversee their menus and incoming orders.
Customers, restaurants, and administrators are all connected by the Order Database.

The relationships between user interfaces and back-end data management are highlighted in this DFD, which offers a thorough understanding of the data flow within the SB Foods system. During web development, it is an invaluable requirement analysis tool for comprehending system architecture and data interactions.

Technology Stack Diagram -



Technology Stack Explanation for SB Foods Website

In order to handle the three different interfaces (consumer, administrator, and restaurant partner), SB Foods' technological stack diagram offers a thorough architecture that guarantees scalability, performance, and a flawless user experience.

Front-end (client side)

For the creation of dynamic, component-based user interfaces for all three portals, React.js was selected as the main front-end framework. Efficient rendering and updating are made possible via React's virtual DOM.

Redux: Provides state management throughout the application, which is especially helpful for handling user authentication states and shopping cart data.

Tailwind CSS: Offers a utility-first CSS framework that makes it possible to create user interfaces quickly while maintaining responsive design and uniform styling.

TypeScript: Enhances code quality and maintainability by adding static typing to JavaScript. It also offers improved error detection and developer tools.

Back-end (server-side)

The server-side environment is powered by Node.js, which provides non-blocking I/O operations that are perfect for managing several requests at once.

Express.js: Simplifies route management and API development by serving as the web application framework over Node.js.

The filtering and sorting options in the menu area depend on the quick data querying made possible by GraphQL/Apollo Server, which enables clients to request precisely the data they require.

Across all three interfaces, JWT Authentication offers users safe, token-based authentication.

Layer of the Database

The main NoSQL database is MongoDB, which provides flexibility for storing a variety of data, including user information, menu items, and restaurant profiles.
Redis: Enhances performance by managing sessions and serving as an in-memory data store for caching frequently accessed data.

Development, Operations, and Deployment

uses Nginx as a load balancer and reverse proxy, Docker for containerization, and AWS services to implement a full deployment pipeline.
Testing and deployment procedures run smoothly thanks to the CI/CD pipeline.

Other Technologies

Stripe API: Oversees safe payment processing at the point of sale.
Socket.io: Facilitates real-time communication for delivery progress updates and order notifications to restaurants.
Delivery tracking and address selection are made easier via the Google Maps API.
Elastic Search: Provides the powerful search capabilities for restaurants and food categories.
Firebase FCM: Offers the ability to send out push notifications for updates on order status.
Analytics and Monitoring: Consists of analytics tools to track user behavior and Sentry for tracking errors.