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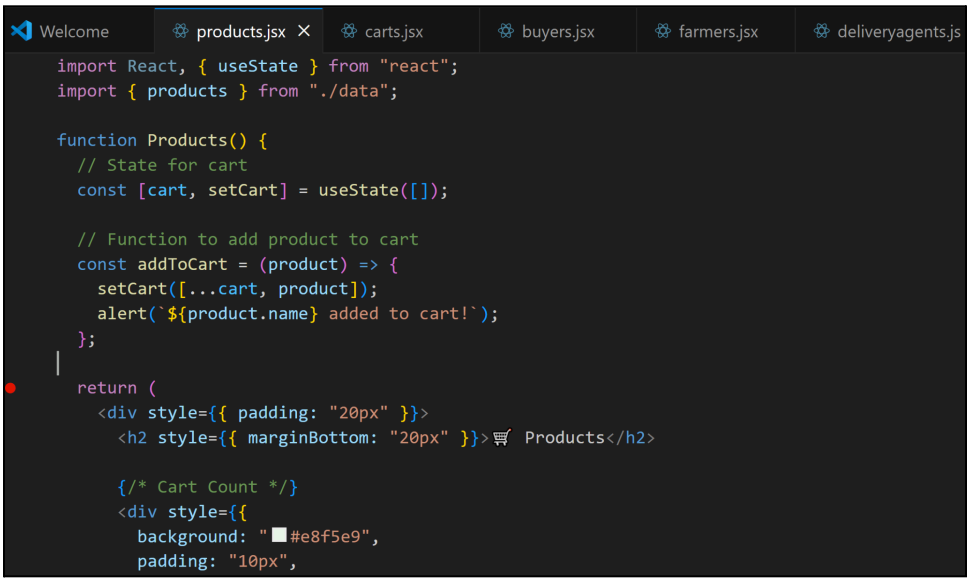
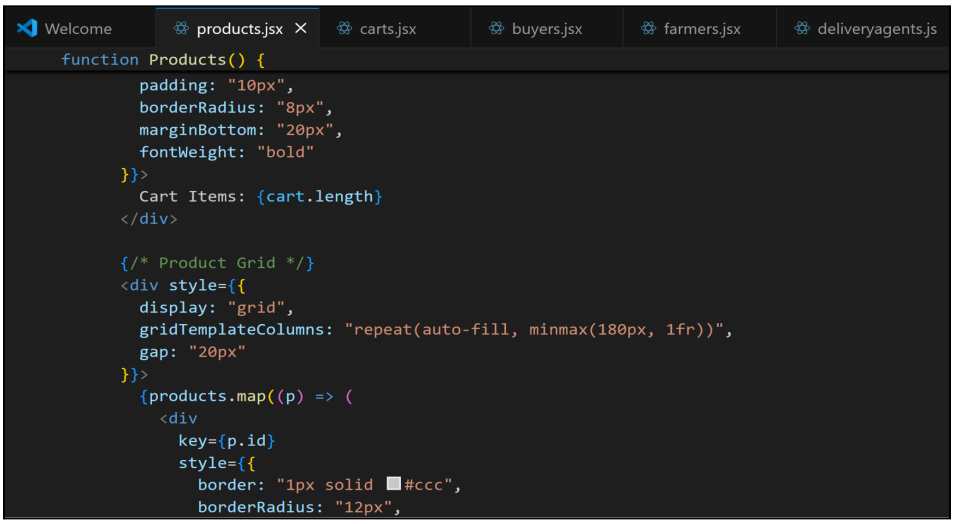


Figure 1.1



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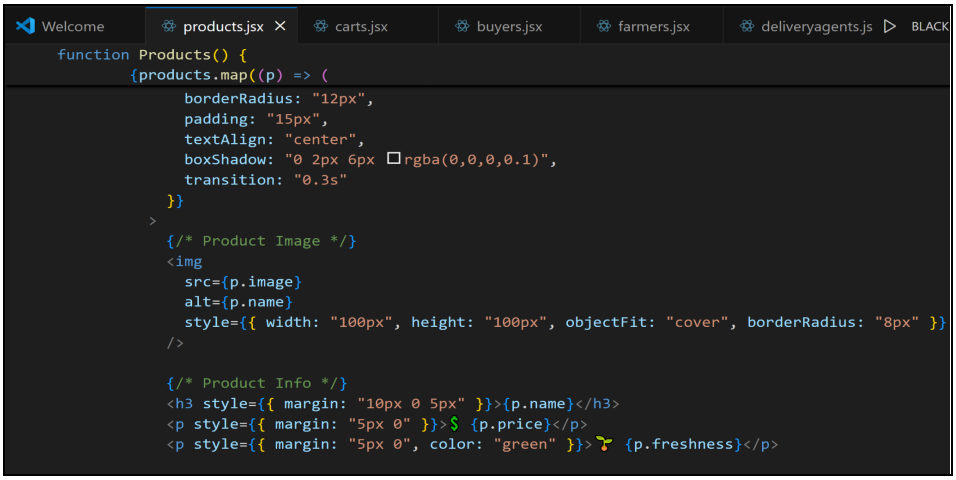

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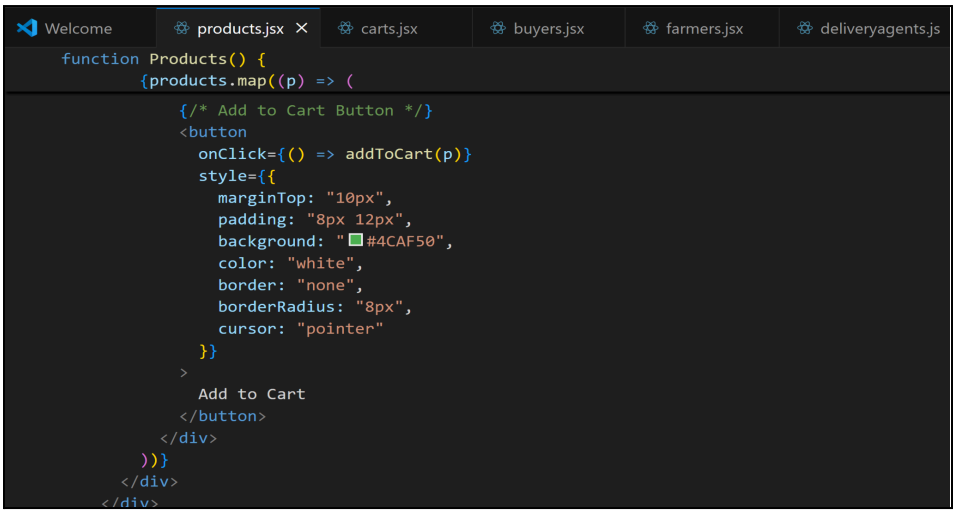

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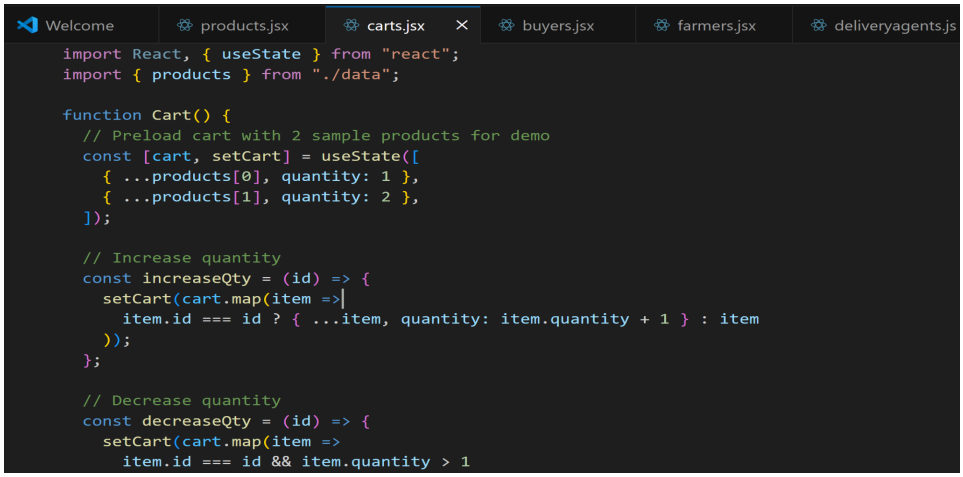

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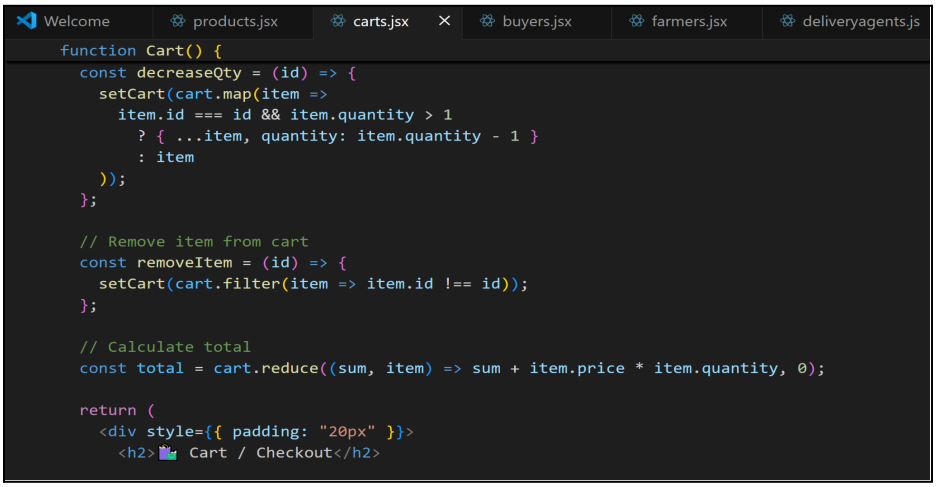

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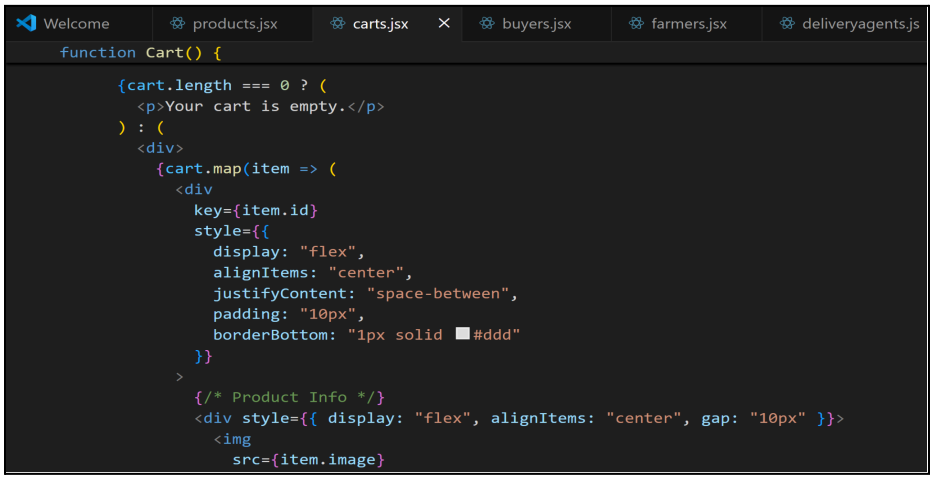

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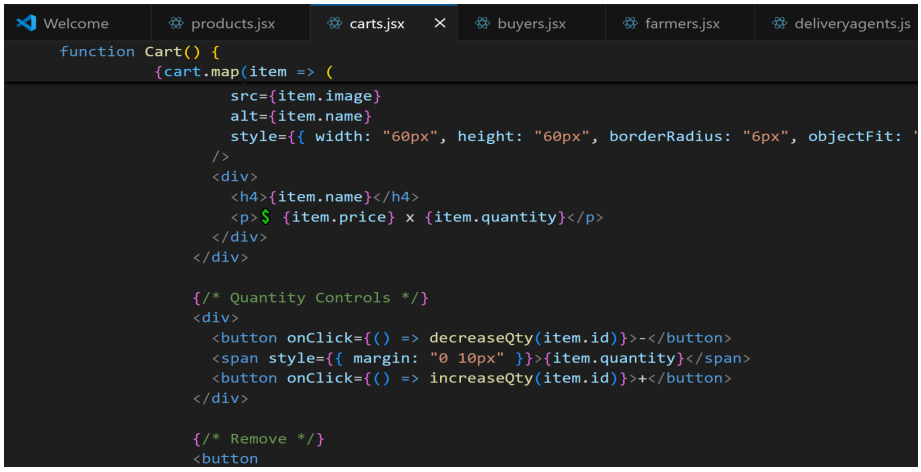

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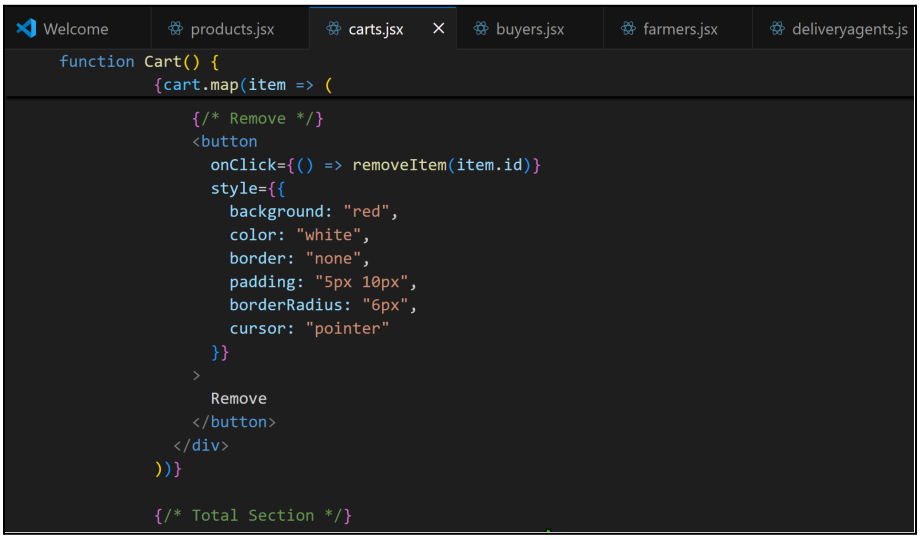

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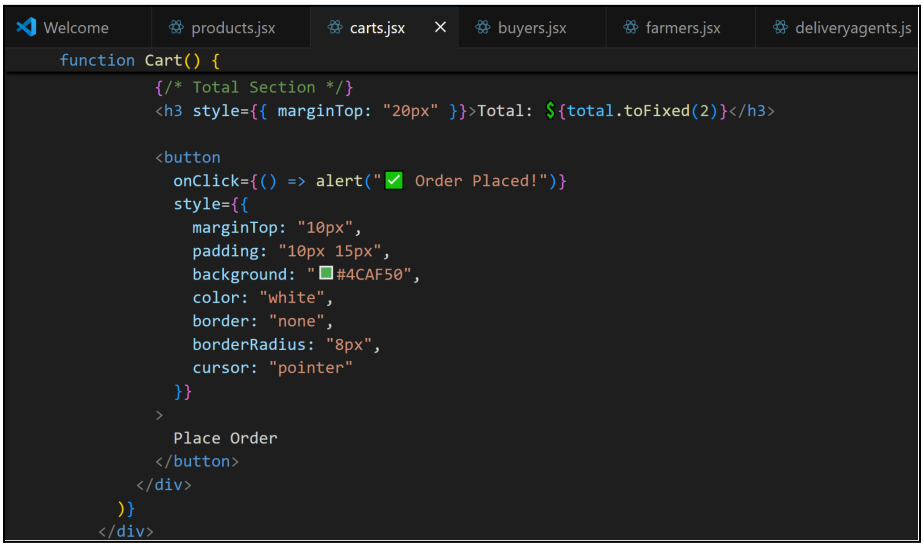
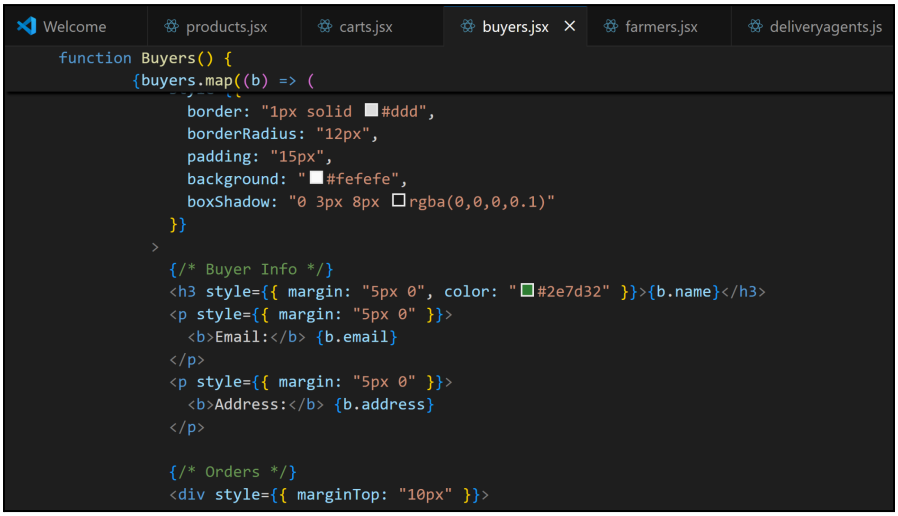


Figure 1.10

Figure 1.11



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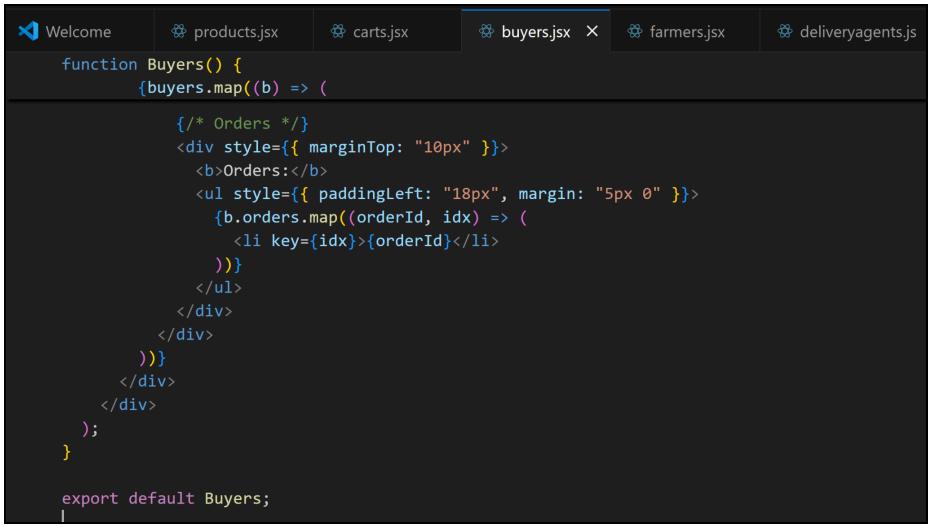

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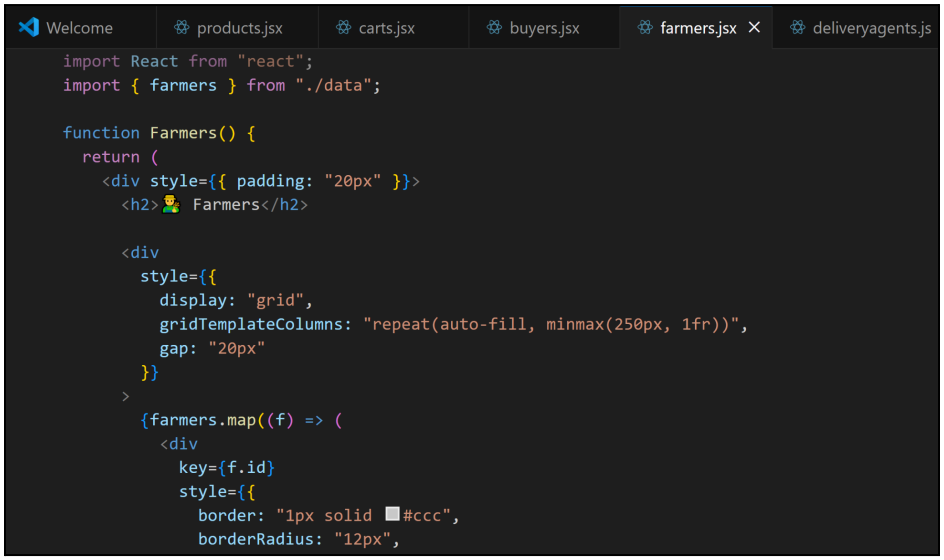

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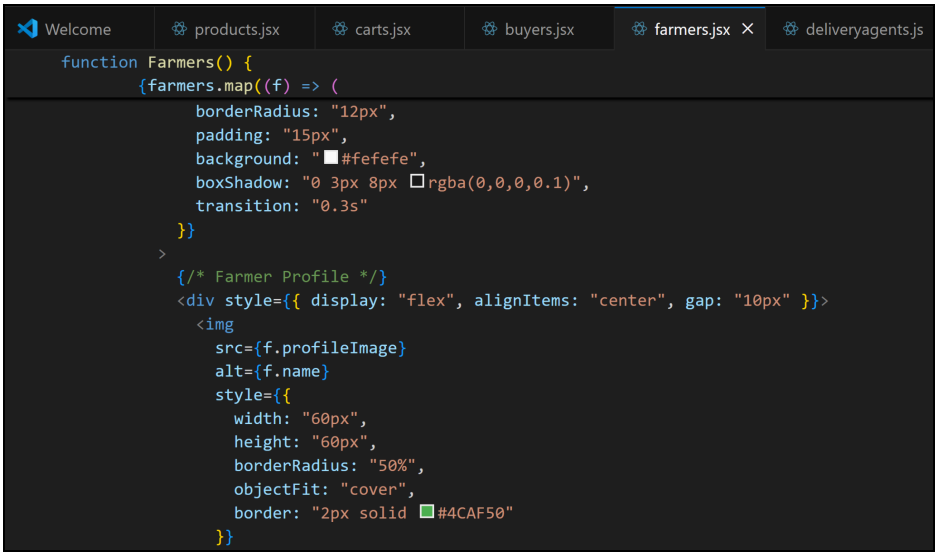

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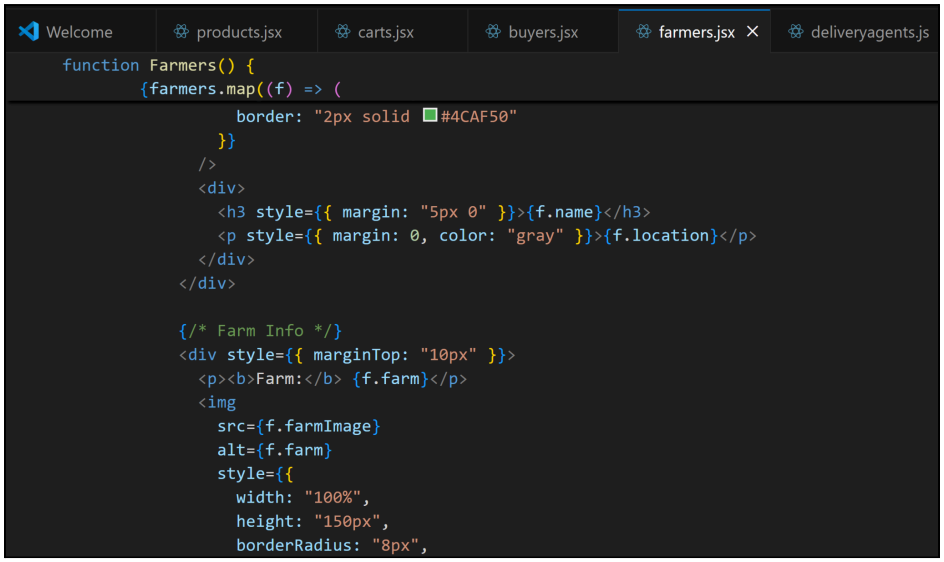

Figure 1.16

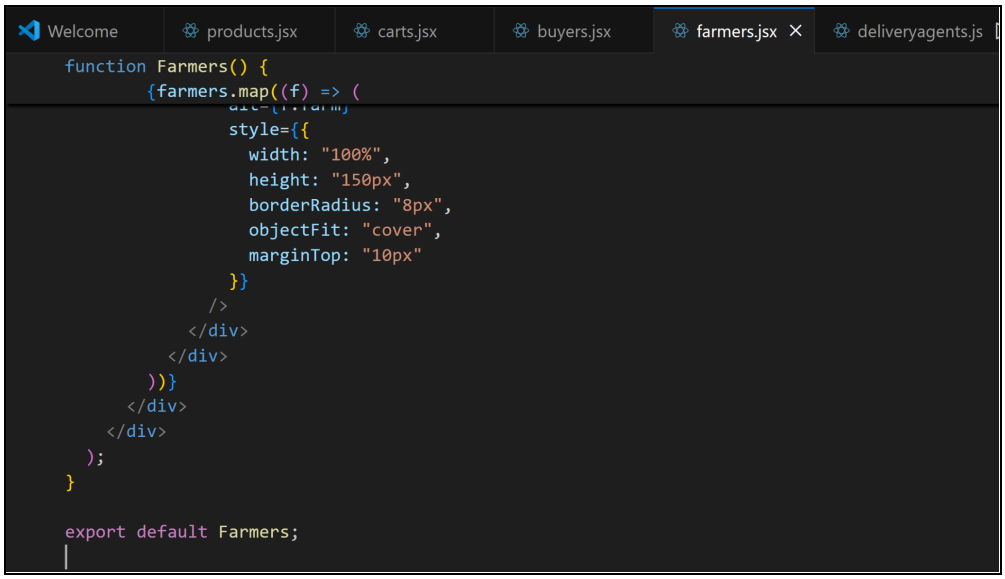

Figure 1.17

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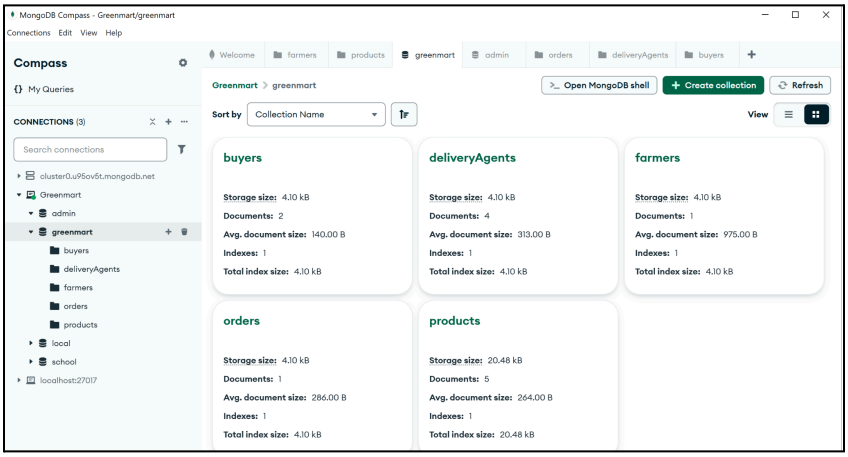


Figure 2.1

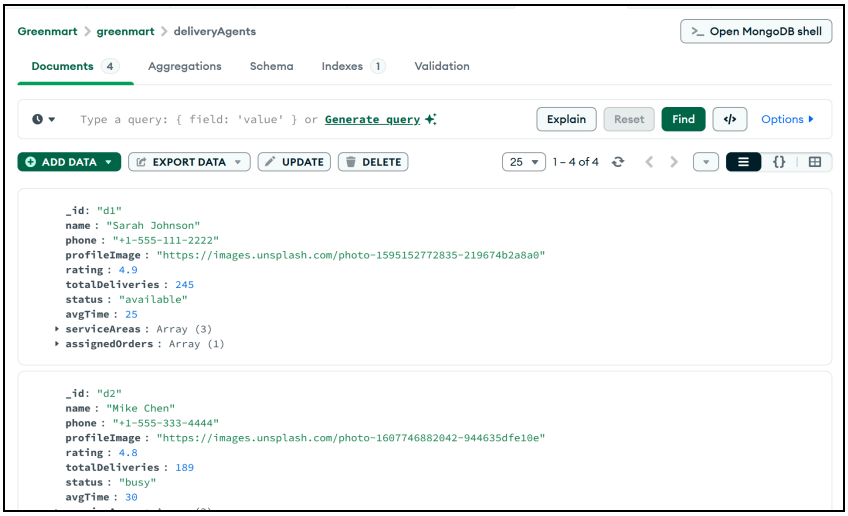
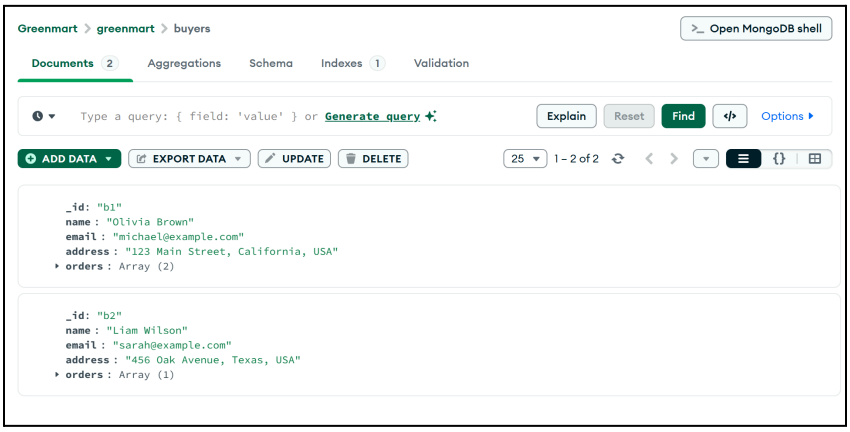


Figure 2.2



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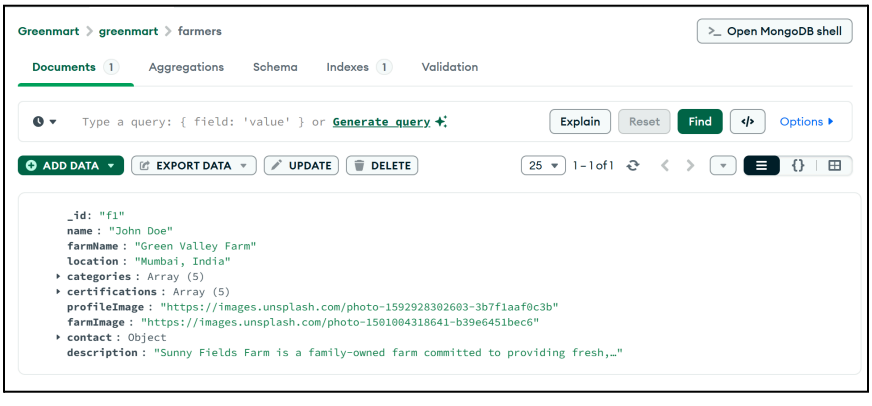

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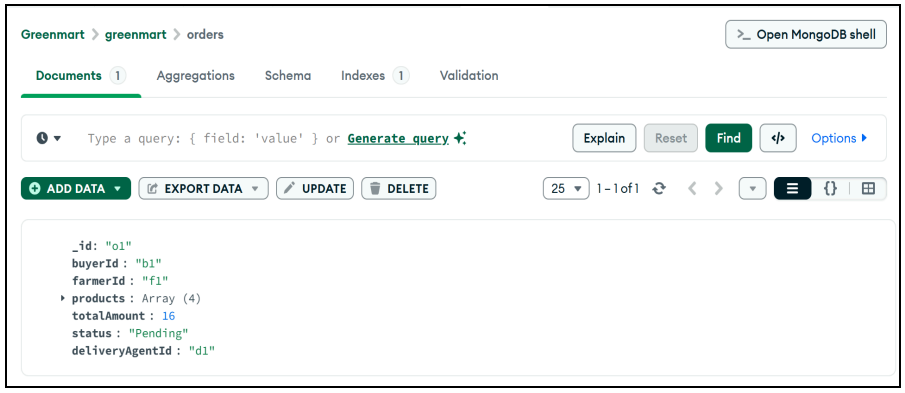

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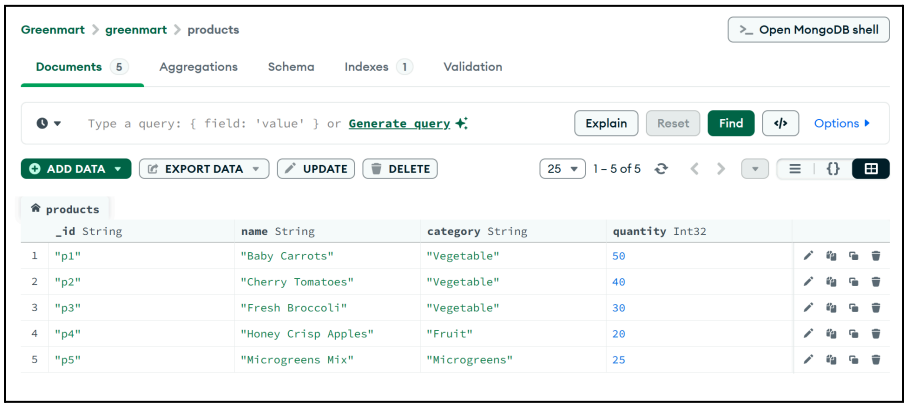

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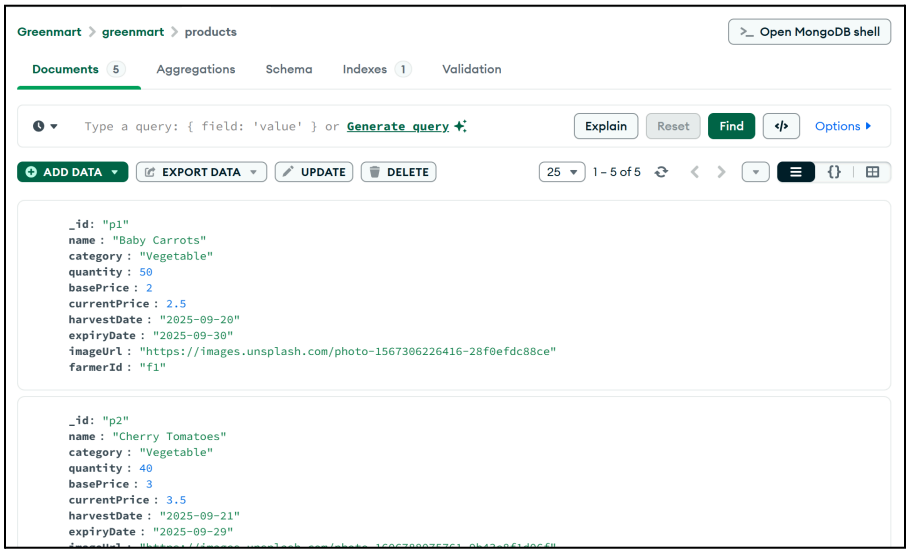


Figure 2.7

OUTPUT:

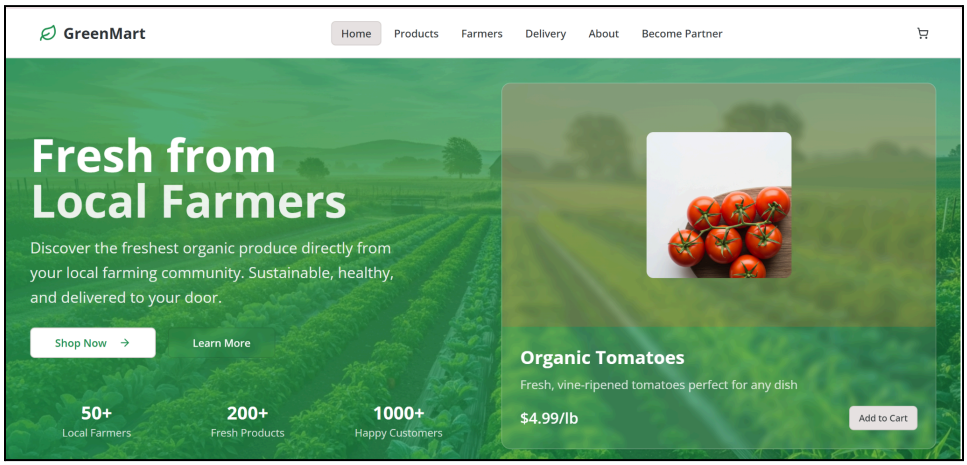
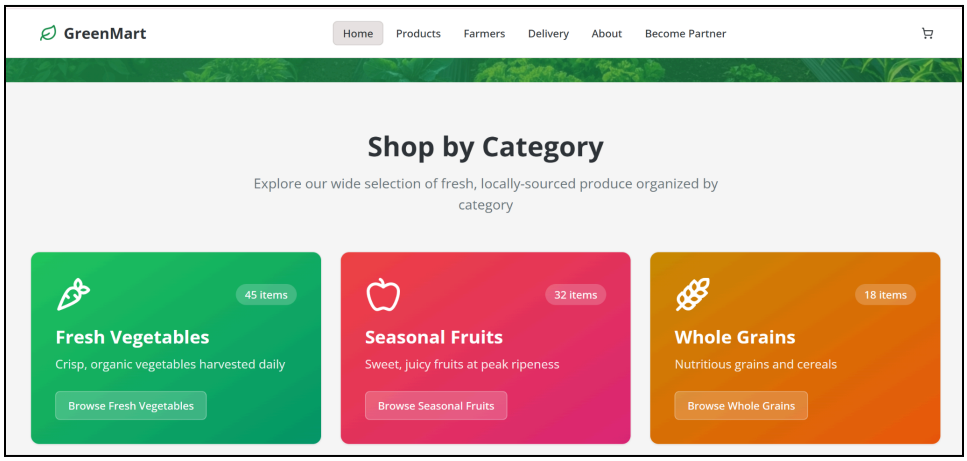


Figure 3.1



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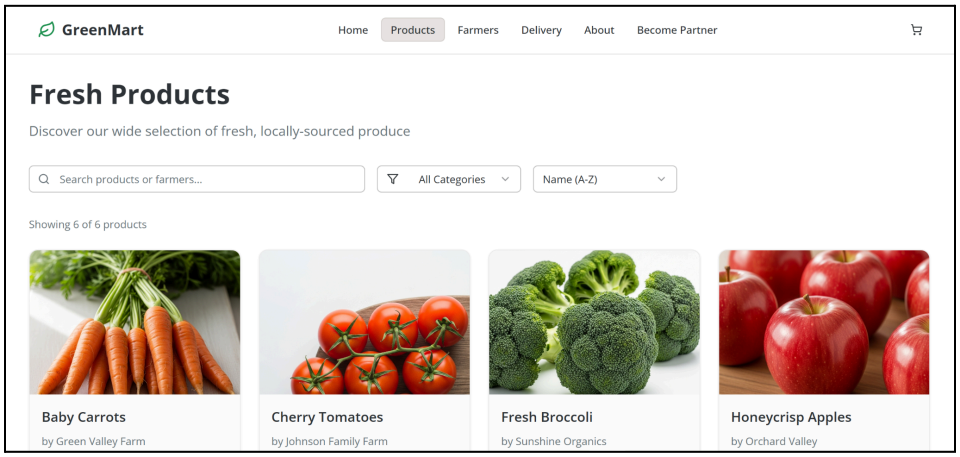

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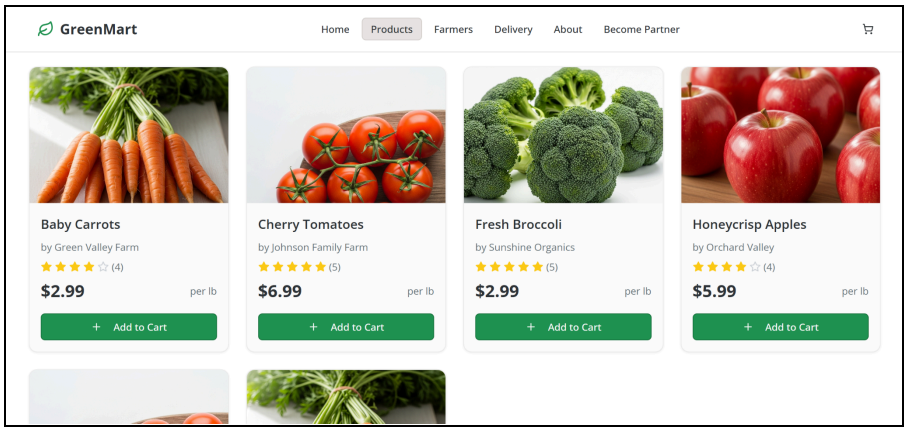

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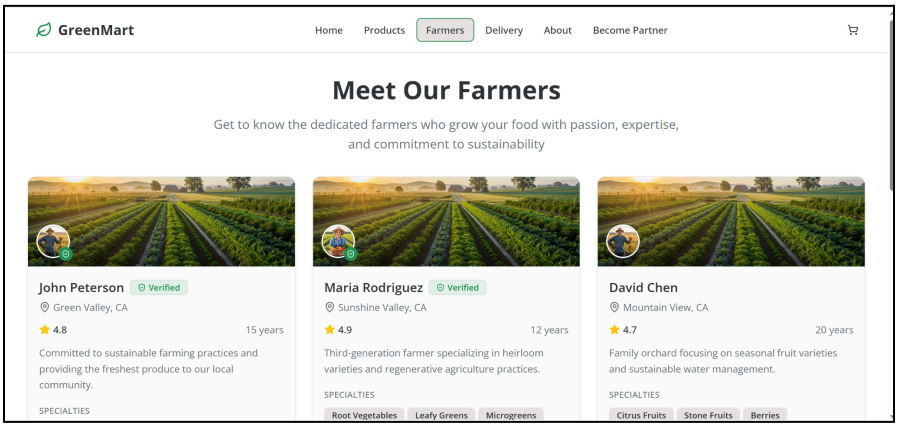

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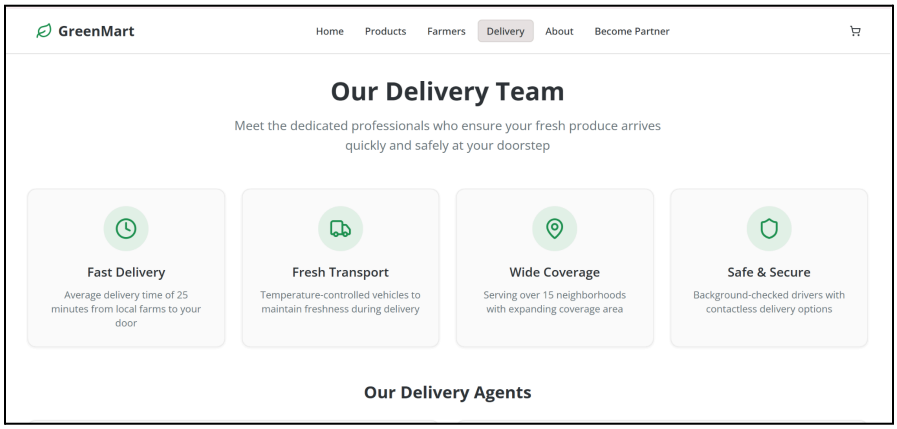

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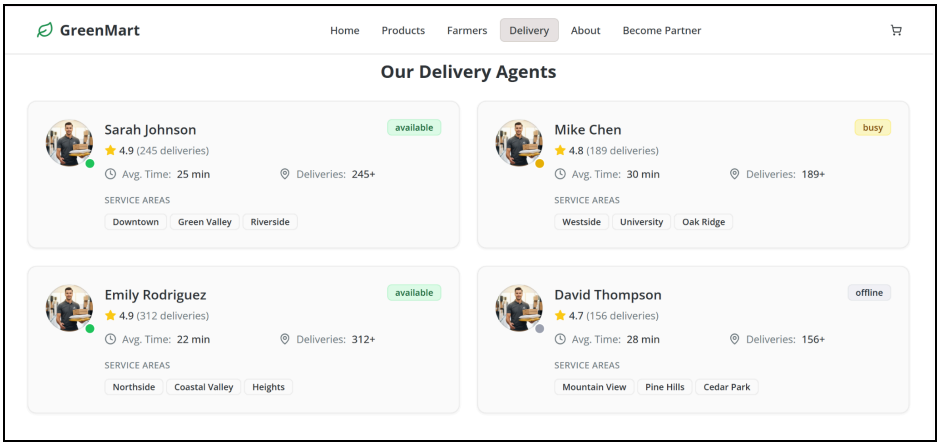

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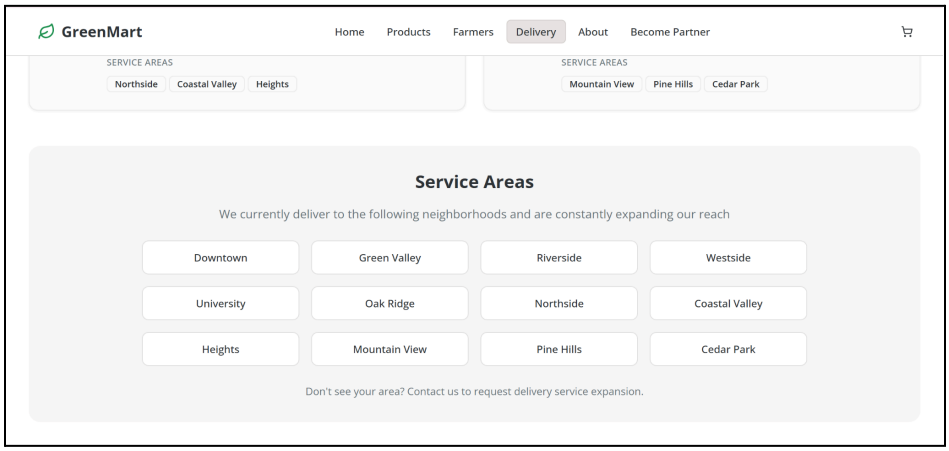

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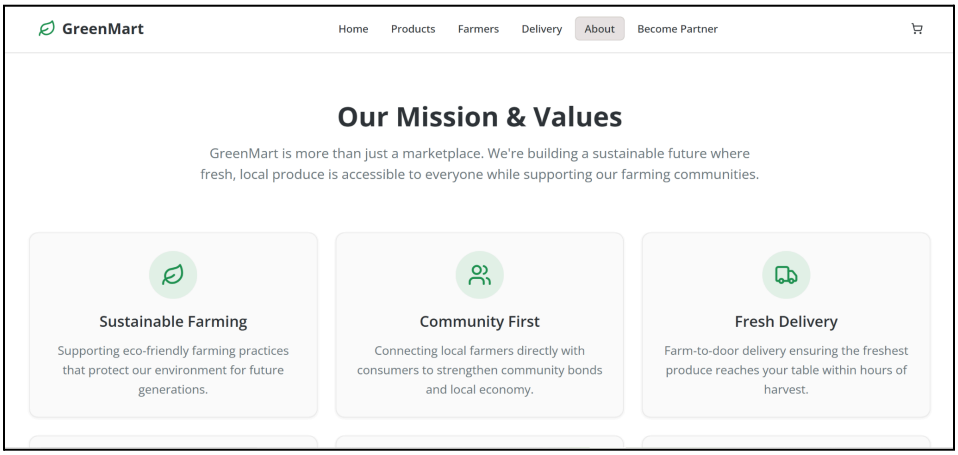
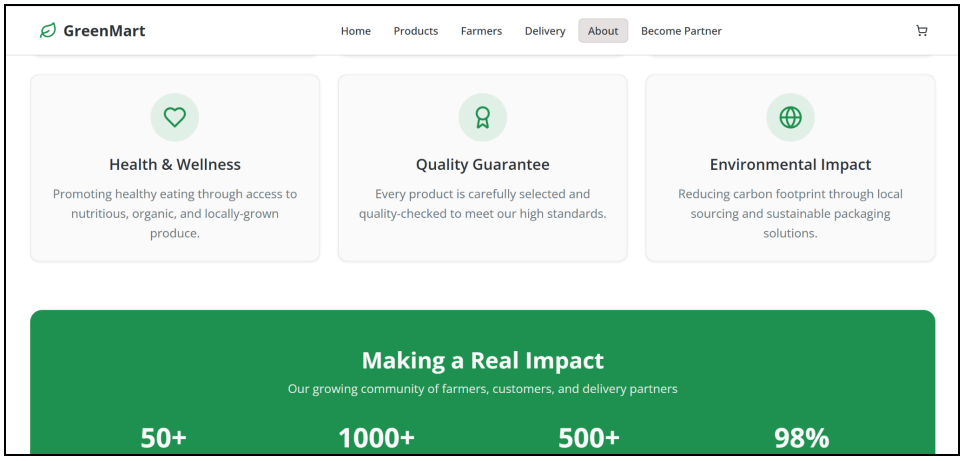


Figure 3.9



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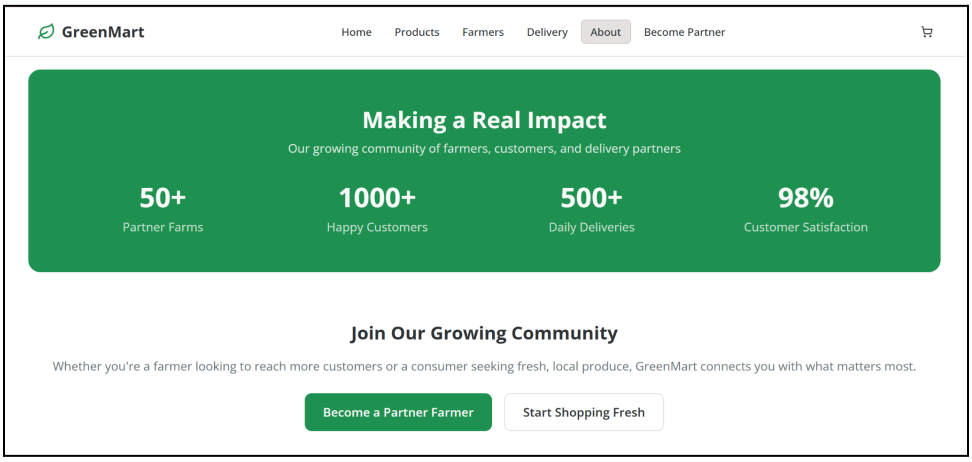

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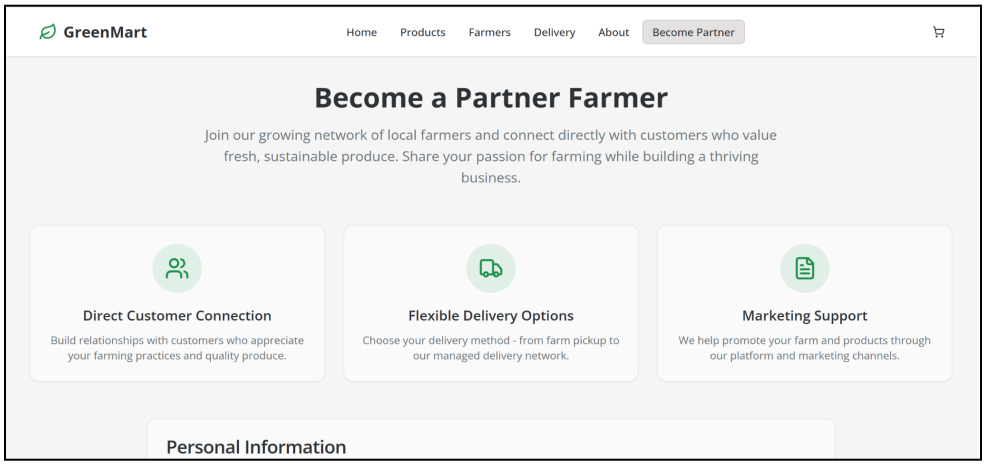

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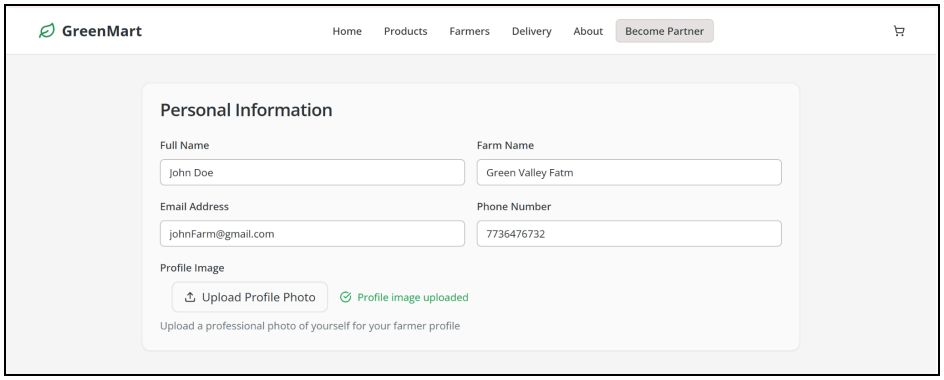

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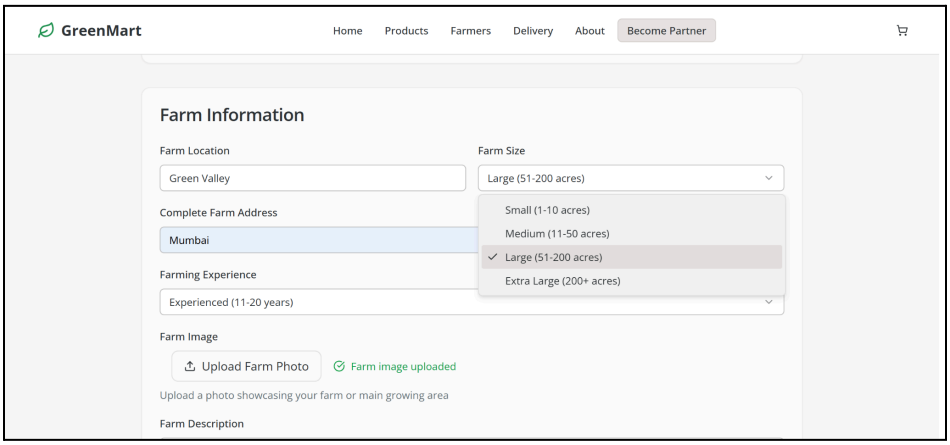
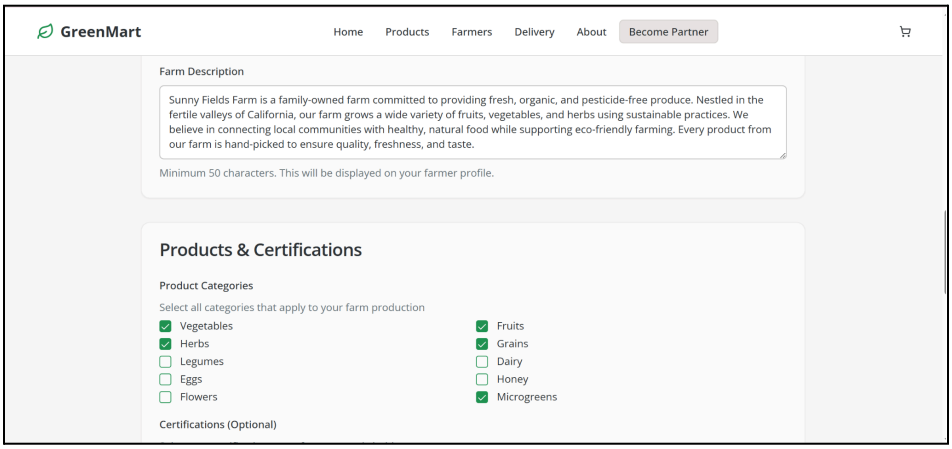


Figure 3.14



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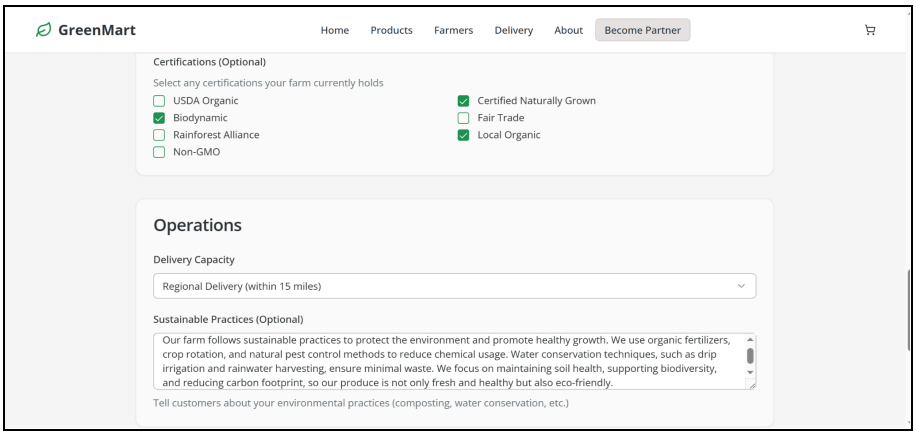

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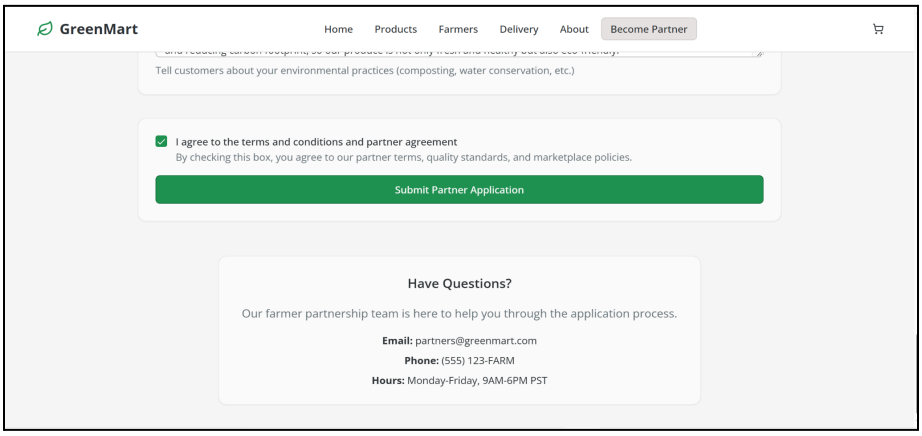

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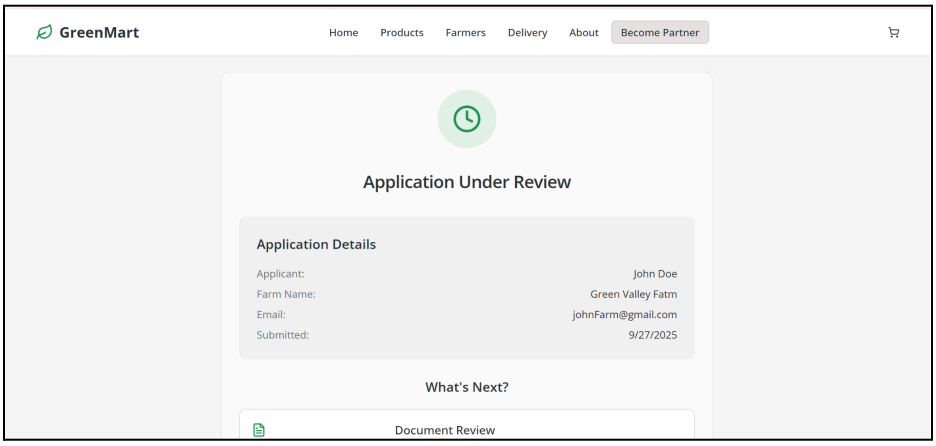

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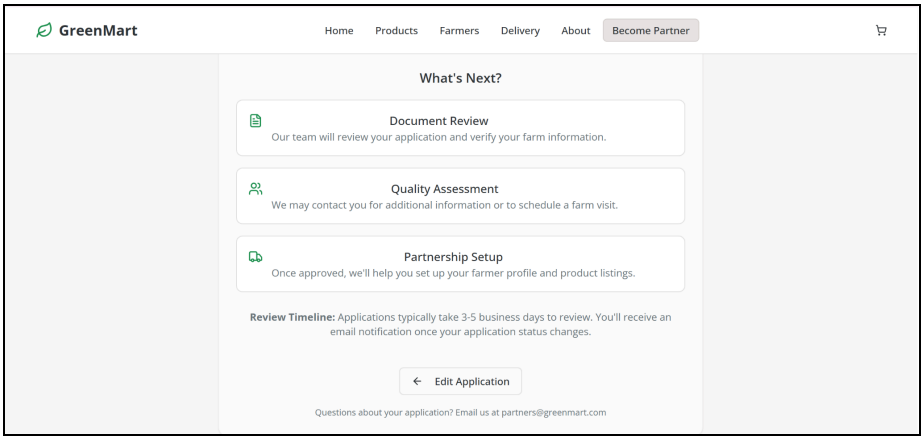

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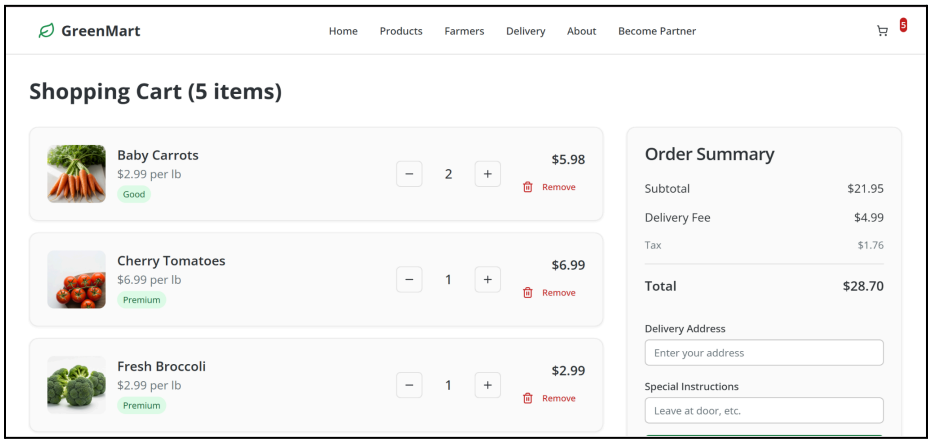

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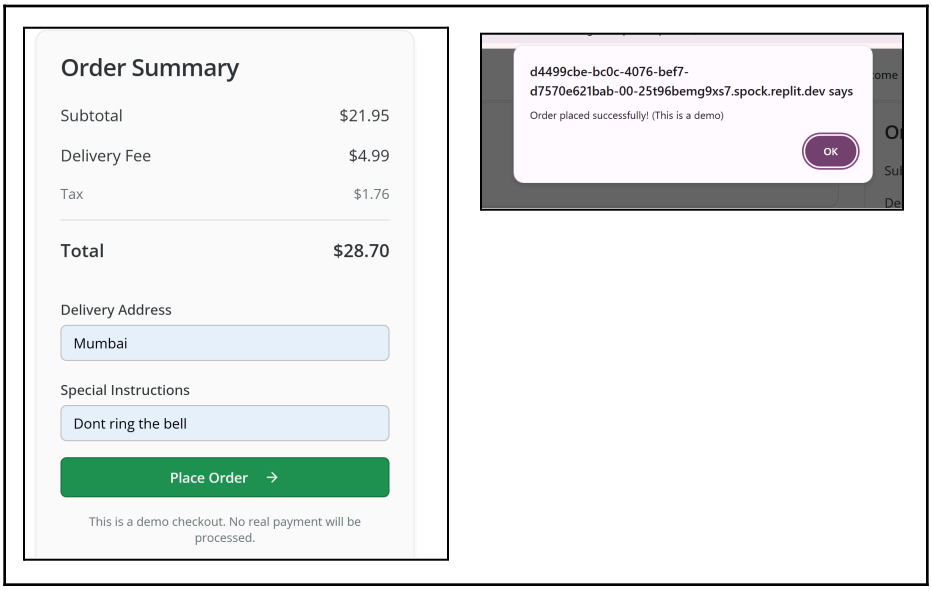

Figure 3.21

30% EXTRA CONTRIBUTION:

- RBAC & Dynamic Rendering: Multi-tier access control with JWT-driven component injection.
- Reactive State Management: Atomic global state via React Context; supports optimistic UI updates.
- Data-Driven UI: Freshness and discount flags computed from product metadata; real-time rendering.
- Modular Architecture: Decoupled, reusable components adhering to SOLID principles.
- Async Media Handling: Remote image URLs with lazy-loading and caching for optimized performance.
- FSM Delivery Workflow: Deterministic delivery state transitions.
- Client Validation & Feedback: Defensive validation with reactive alerts for robust UX.
- Full-Stack Orchestration: React SPA integrated with Express.js REST APIs and Mongoose models; real-time data sync.