

System Design Document

Click Cart E-Commerce Site

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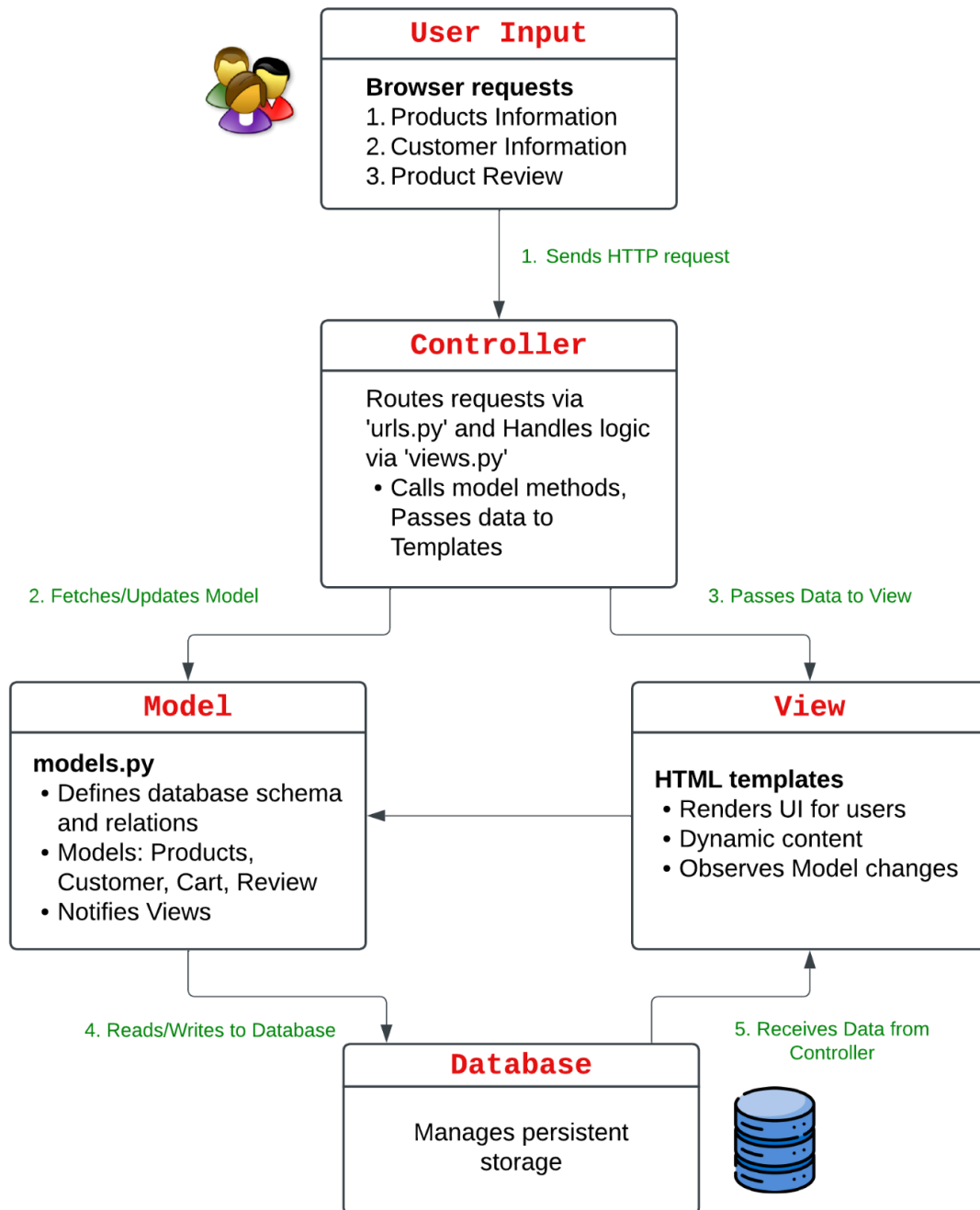
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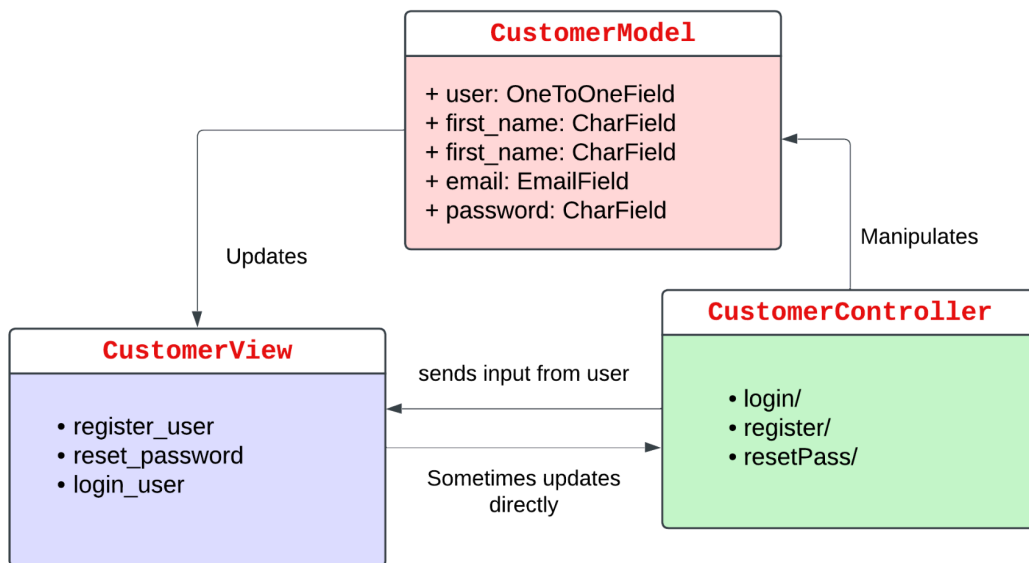
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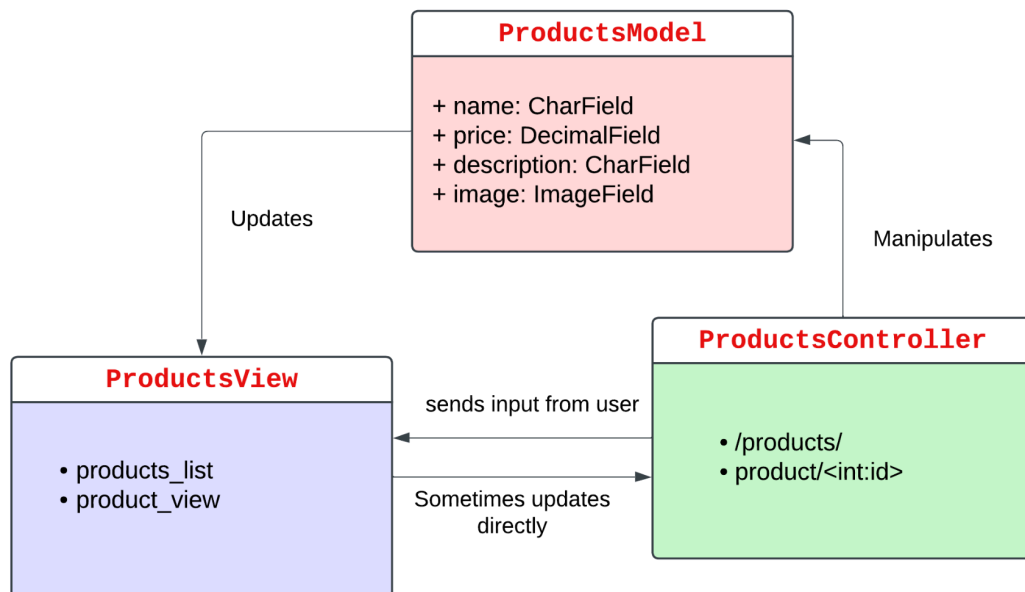
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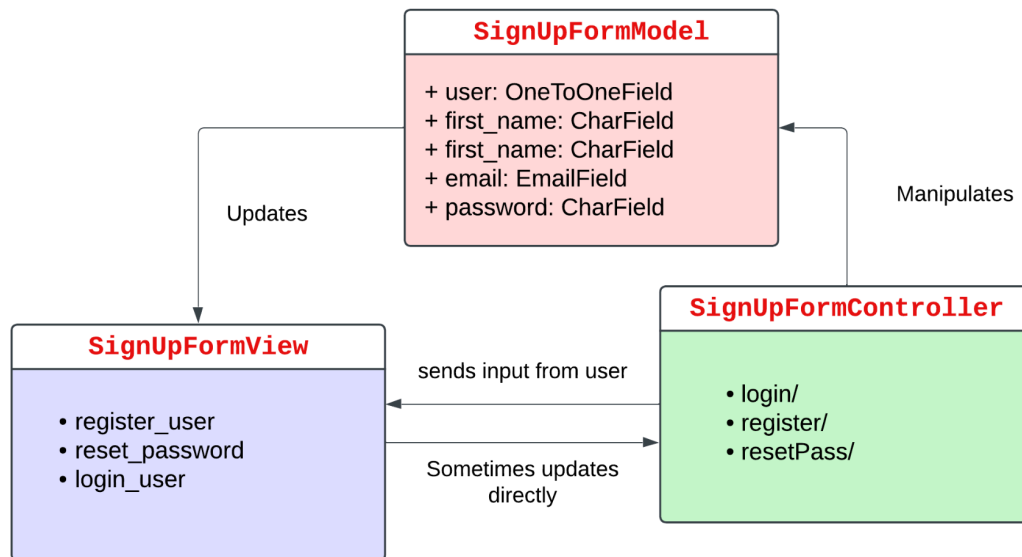
Class Name: Customer	
Responsibilities: <ul style="list-style-type: none"> • Manage user registration and login. • Store user data (name, email, password, etc.). • Authenticate users for secure access. • Handle password reset requests. 	Collaborators: <ul style="list-style-type: none"> • Database: Stores user information. • SessionManager: Manages user sessions. • EmailService: Sends confirmation and reset emails.



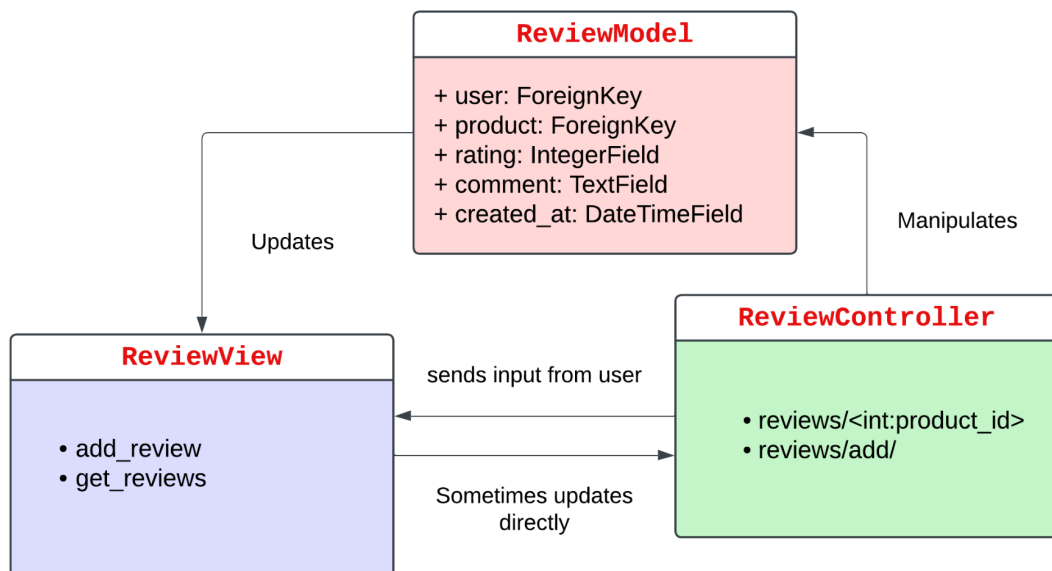
Class Name: Product	
Responsibilities: <ul style="list-style-type: none"> • Store and manage product information (name, description, price, stock). • Retrieve product details for display to users. • Handle product availability (stock status). • Filter and sort products based on user queries (e.g., price, category). 	Collaborators: <ul style="list-style-type: none"> • Database: Stores product information. • Cart: Interacts when users add products to their cart. • Category: Classifies products under different categories.



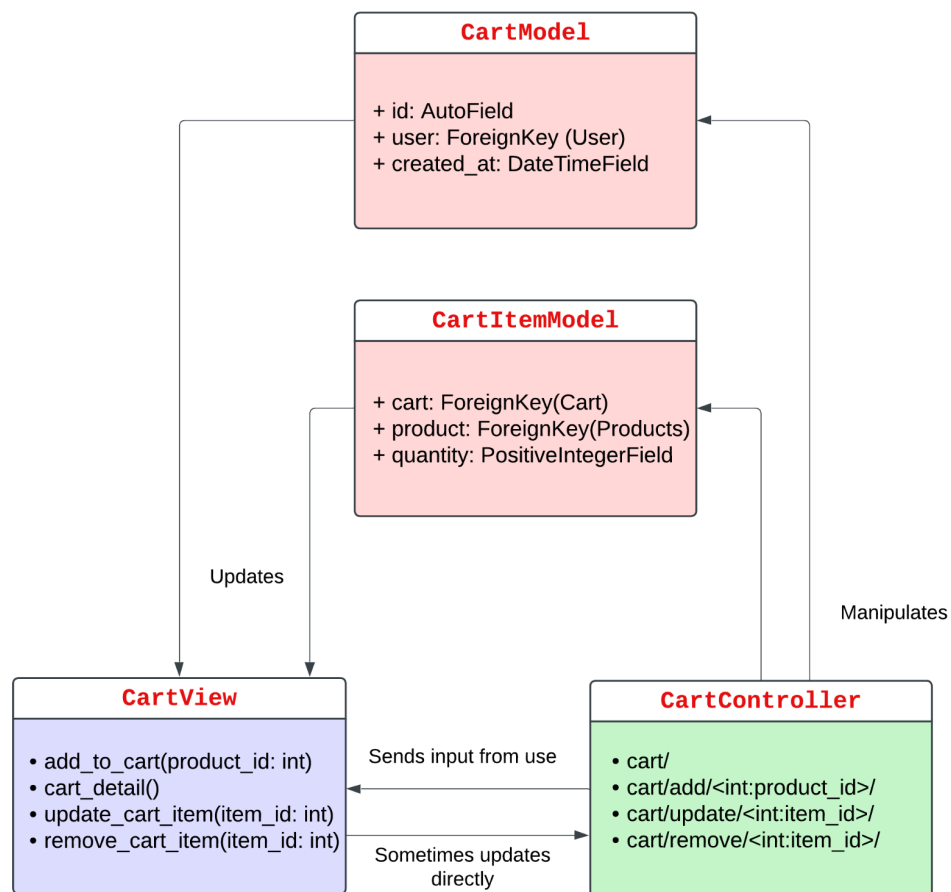
Class Name: Sign Up Form	
Responsibilities: <ul style="list-style-type: none"> • Collect and validate user input (username, email, password). • Trigger user registration, login, and password reset operations. • Provide feedback to users (e.g., success or error messages). 	Collaborators: <ul style="list-style-type: none"> • Backend Controller: Processes the data and interacts with the database. • Database: Stores user credentials and personal details.



Class Name: Review	
Responsibilities: <ul style="list-style-type: none"> • Display existing reviews for a product. • Allow users to submit new reviews with ratings and comments. • Validate review data (e.g., rating ranges, comment length). 	Collaborators: <ul style="list-style-type: none"> • Backend Controller: Manages review submission and retrieval logic. • Database: Stores and retrieves reviews associated with products and users.



Class Name: Cart	
Responsibilities: <ul style="list-style-type: none"> • Store selected products for each user. • Manage quantity and pricing of items in the cart. • Provide a summary of items in the cart (total price, tax, etc.). • Handle checkout actions. 	Collaborators: <ul style="list-style-type: none"> • Product: Retrieves product details and ensures availability. • User: Associates the cart with a specific user.



Class Name: SessionManager	
Responsibilities: <ul style="list-style-type: none"> • Manage user sessions after login. • Track active sessions and timeout. • Handle logout functionality. • Provide session tokens for secure user actions. 	Collaborators: <ul style="list-style-type: none"> • User: Validates and creates sessions for logged-in users. • Database: Stores session-related information.

Class Name: Order	
Responsibilities: <ul style="list-style-type: none"> • Generate order details upon checkout. • Track order status (pending, shipped, delivered). • Store payment and shipping information. • Retrieve order history for users. 	Collaborators: <ul style="list-style-type: none"> • User: Tied to a specific user's order. • Cart: Converts cart items into an order. • PaymentGateway: Manages payment processing. • ShippingService: Tracks and updates shipping status.

Class Name: Database	
Responsibilities: <ul style="list-style-type: none"> • Store all data related to users, products, orders, and sessions. • Provide CRUD operations (Create, Read, Update, Delete). • Ensure data integrity and relationships (e.g., users with orders, products in carts). 	Collaborators: <ul style="list-style-type: none"> • User, Product, Order, SessionManager: Uses this to store and retrieve relevant data.