Lab6

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Testing is the broad process of checking to see if something works as expected. It's applied in many fields, from software development to medical research. Testing is useful because it helps identify and fix errors before they cause problems. This can save time, money, and even lives

My ecommerce application allows users to browse products, add them to a cart, and checkout. The user interface, built with React, showcases products while the backend (Node.js and Express) handles product data stored in MongoDB. This foundation ensures a user-friendly shopping experience with core functionalities like product listings, carts, and secure checkout. The application also has some extra functionalities for the admin, who is able to manage all the entities securely through his account.

During development, my ecommerce application should undergo various testing techniques. **Unit testing** can be used to isolate the "Add to Cart" functionality. Here, I would test if the product quantity updates correctly when added, if the cart reflects the chosen product (id and the rest of the properties of the product object), and if it throws errors when trying to add invalid quantities. **Integration testing** would involve ensuring smooth communication between the frontend (React) and backend (Node.js/Express) during product addition. We'd test if the "Add to Cart" button sends the chosen product data to the backend, where it's processed and reflected in the user's cart stored in the database (MongoDB). Finally, **system testing** would encompass real-world user journeys. This would involve testing the entire checkout process, including user login/account creation, payment processing, and order confirmation email delivery, to ensure a seamless shopping experience.