**Verification vs Validation**

**1. Verification – "Are we building the product right?"**

**Definition**: Verification is the process of evaluating work-products (like design, code, and documents) to ensure they meet specified requirements before actual execution. It is **static** and does not involve running the application.

**Example in ShopEase:**

* Reviewing the **UI design** of the product listing page to ensure it follows the Figma mockups and design guidelines.
* Conducting **code reviews** to check if the cart module aligns with the coding standards and architectural rules.
* Performing **requirement traceability matrix checks** to ensure all specified features (e.g., search, filter, and cart) are implemented.

**Goal**: Ensure the software is developed *correctly* according to design and specifications.

**2. Validation – "Are we building the right product?"**

**Definition**: Validation checks whether the software actually meets the user's needs and expectations. It is **dynamic**, involving execution and testing of the product.

**Example in ShopEase:**

* Testing the **checkout flow** to verify that users can successfully complete a purchase with various payment methods.
* Running **user acceptance testing (UAT)** with real users to confirm that features like product recommendations and order tracking are useful and work as expected.
* Performing **end-to-end tests** on the mobile app to ensure users can search, add to cart, and place orders seamlessly.

**Goal**: Ensure the software fulfills the *intended requirements* of the end user.

**Summary Table**

| **Aspect** | **Verification** | **Validation** |
| --- | --- | --- |
| Focus | Process & design | Product & functionality |
| Type | Static (no code execution) | Dynamic (involves code execution) |
| Objective | Build the product right | Build the right product |
| Example in ShopEase | Design reviews, code reviews, requirement analysis | Functional testing, UAT, system testing |

**Conclusion**

Both **verification** and **validation** are critical in ShopEase’s testing strategy. Verification ensures that the platform is built according to technical specifications, while validation confirms it delivers value to users—helping ShopEase achieve high quality and customer satisfaction.