Problem Statement 2: Black Box Testing
Perform black box testing on the checkout process of ShopEase. Focus on user interactions and the overall user experience. Identify potential usability issues, and design test cases to ensure a seamless and user-friendly checkout experience.

Solution :

1. Understand the Checkout Flow:

- Gather Information: Collect all available documentation (user guides, FAQs, etc.) and conduct user research (interviews, surveys) to understand the typical checkout journey on ShopEase.
- Map the User Flow: Create a visual representation of the checkout process, outlining each step, decision point, and possible actions users can take.
- Identify Key User Personas: Define representative user profiles with varying levels of technical expertise, shopping habits, and expectations.

2. Focus on User Interactions and Experience:

- Usability Heuristics: Apply established usability heuristics (e.g., Nielsen Norman principles) to evaluate the checkout process for factors like learnability, efficiency, memorability, satisfaction, and error-free interaction.
- Accessibility: Ensure the checkout process is accessible to users with disabilities, following WCAG guidelines.
- Information Architecture: Evaluate the clarity and organization of information presented during checkout, ensuring users can easily find and understand what they need.
- Visual Design: Assess the visual elements (layout, colors, typography) for consistency, clarity, and intuitiveness.

3. Design Test Cases:

- Positive Test Cases:
  - Simulate successful purchases with different product types, payment methods, and user accounts.
  - Test functionalities like address management, coupon codes, and gift cards.
  - Verify clear order confirmation and post-purchase communication.

- Negative Test Cases:
  - Introduce invalid or incomplete data at various stages (e.g., missing address fields, incorrect payment details).
  - Simulate network disruptions or errors during checkout to test error handling and recovery mechanisms.
  - Attempt actions outside the expected flow (e.g., bypassing steps, manipulating data).
  - Test for compatibility with different browsers and devices.

- Usability Testing: Conduct user testing sessions with representatives of your defined user personas, observing their interactions, collecting feedback, and iterating on the design based on their experiences.

4. Prioritize Test Cases:

- Impact Analysis: Rank test cases based on their potential severity and impact on the user experience. Focus on issues that could cause confusion, frustration, or abandonment during checkout.
- Risk Assessment: Consider the likelihood of encountering each issue based on real-world usage patterns and potential user behavior.

5. Conduct Testing and Iterate:

- Execute the Test Cases: Manually or automate test case execution, capturing screenshots, logs, and user feedback.
- Analyze Results: Identify usability issues, prioritize them based on severity and impact, and document them clearly.
- Iterate and Refine: Fix identified issues, conduct regression testing to ensure they're resolved, and continuously refine the checkout process based on user feedback and testing results.