# Automation Best Practices Guide

Don’ts

1. **Avoid hard waits**  
   Do not use fixed waits (e.g., sleep, wait, or delay) for synchronization. Use dynamic waits or polling instead.
2. **Avoid fragile locators**  
   Do not rely on selectors that are prone to breaking, such as nth-child, absolute XPaths, or indexes.
3. **Never expose sensitive data**  
   Keep credentials, tokens, and URLs out of scripts. Store them in environment variables or configuration files.
4. **Avoid static or brittle identifiers**  
   Do not use hard-coded identifiers or positions. Prefer stable attributes or dynamic paths that adapt to changes.
5. **Do not store unnecessary variables**  
   Avoid defining selectors or elements separately unless it improves readability or reusability.
6. **Do not leave commented-out code**  
   Remove unnecessary comments and unused code unless documenting a defect or pending task.
7. **Avoid unnecessary actions**  
   Only perform actions like clearing a field or resetting state if needed; don’t repeat them if the initial state is already correct.

Do’s

1. **Use reliable locators**  
   Prefer unique identifiers such as IDs, names, stable class names, or meaningful attributes. Use hierarchical or dynamic locators when necessary.
2. **Reuse common functionality**  
   Place reusable methods in a central location. Design functions to be **generic**, accepting inputs rather than hard-coded values.
3. **Include robust assertions**  
   Always include **positive and negative checks** to verify expected behaviour. Validate states after each action or page load.
4. **Implement proper synchronization**  
   Use waits, retries, or intercepts that adapt to application speed and avoid flakiness.
5. **Maintain clear naming conventions**  
   Name methods, variables, and scripts clearly to describe their purpose, making them readable and maintainable.
6. **Conduct peer reviews**  
   Have team members review automation scripts to ensure consistency, quality, and maintainability.
7. **Validate end-to-end execution**  
   Before merging or releasing, run all scripts in the suite to confirm they pass consistently and reliably.