1. **Describe your approach to automating the login functionality of a web application.**

- The Approaches for automating the login functionality are described as:

I. **Understanding and Knowing the Login Process.**
   - Verifying whether the application uses a standard username and password login, Single Sign-On (SSO) login and so on.
   - Verifying the required fields such as username, email or password and any extra fields such as OTP and Security questions.
   - Understanding how the system responds to invalid inputs, locked accounts and invalid credentials.

II. **Test Strategy**
   - The both manual and automation testing will be performed according to its requirement:
     - Functional Testing: Verifying valid and invalid login scenarios.
     - Negative Testing:Verifying incorrect credentials and empty fields.
     - Cross-Browser Testing: Verifying Chrome, Firefox, Edge and Mobile compatibility
     - Performance Testing:Login response time validation.
     - Security Testing: Validating password encryption, session timeouts.

III. **Setting up Test Environment**
   - Necessary environments to be used are:
     - Selenium is used for UI Automation Testing.
     - Python language is used as an automation language.
     - Postman is used for API based testing.

IV. **Prepare Test Deliverables**
   - Create necessary documents for testing approach.
   Before Testing:
   - Checklists
   - Test case and scenarios
   - Test modules for automation (for test cases).

   After Testing:
   - Test Execution Report
   - Bug Report

V. Bug Summary and Reporting

- Give proper details for the bug including steps and conditions.
- Attach necessary screenshots, videos and logs for failed test cases.
- Generate detailed reports using Allure, HTML report or other built in reporting options.

Bug Reporting Format:

- ○ *Context: Environment, OS, Browser details. (optional)*
- ○ *Preconditions: Any initial conditions or requirements. (optional)*
- ○ *Steps: Step-by-step actions leading to the issue.*
- ○ *Expected Result: What should have happened.*
- ○ *Actual Result: What actually happened, with a screenshot/video if necessary.*