

# **Laboratory Practical Assessment**

**Topic : Functional Testing – Software Testing**

**Course : TESTQUA 31**

**Type : Laboratory Practical Assessment**

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## **I. Instructions**

1. Read each task carefully.
2. Perform the required activities using any tool (manual, spreadsheet, or simple code).
3. Submit:
  - o PDF of your answers
  - o Screenshots of executed tests (if applicable)
  - o Completed test case table

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## **II. Laboratory Scenario**

You are assigned as a **QA Tester** for a new web application: “**UC Student Portal Login Page**”.

The login page has the following requirements:

1. A user must enter a valid **username** and **password**.
2. If the username or password is incorrect, the system must display:  
**“Invalid login credentials.”**
3. If fields are empty, the system must display:  
**“All fields are required.”**
4. For security, passwords must be at least **8 characters** long.
5. After 3 failed attempts, the system must show:  
**“Your account is locked. Contact administrator.”**

Using the Functional Testing concepts from the document , perform the tasks below.

### III. Practical Tasks

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#### Task 1: Identify What to Test (10 points)

Using the “What to Test in Functional Testing” section (Basic Usability, Main Functions, Accessibility, Error Handling) , list **at least 5 functional components** you will test in the login page.

Example: “Verify login accepts valid credentials.”

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#### Task 2: Functional Testing Process Application (20 points)

Apply the 4-step functional testing process from the document (Identify input → Expected outcomes → Execute test → Compare output) .

Complete the table below for **3 test cases**:

| Step                   | Test Case 1                 | Test Case 2                  | Test Case 3                                  |
|------------------------|-----------------------------|------------------------------|--|
| Identify Inputs        | Valid username and password | Invalid username or password | Empty username and password                  |
| Expected Output        | Login success               | Login fail                   | Please enter your ID (or Email) and password |
| Actual Output          | Login success               | Login fail                   | Please enter your ID (or Email) and passeorr |
| Comparison (Pass/Fail) | Pass                        | Pass                         | Pass   |

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#### Task 3: Create Detailed Functional Test Cases (30 points)

Create **at least 5 functional test cases** using the following format:

**Test Case ID    Test Scenario    Test Steps    Test Data    Expected Result    Actual Result    Status**

Your test cases should cover:

- ✓ Valid login
- ✓ Invalid login

- ✓ Empty fields
- ✓ Short password
- ✓ Account lock after 3 attempts

| Test Case ID | Test Scenario | Test Steps | Test Data | Expected Results | Actual Results | Status |
|--------------|---------------|------------|-----------|------------------|----------------|--------|
|              |               |            |           |                  |                |        |

|               |                      |  |  |   |  |      |
|---------------|----------------------|--|--|---|--|------|
| <b>TC-001</b> | Valid login          | 1. Enter valid username and password.<br>2. Click Login.       | Username: 45324562<br>Password: 123456 | Directly opens dashboard                            | Directly opens dashboard                     | Pass |
| <b>TC-002</b> | Invalid login        | 1. Enter invalid username and password.<br>2. Click Login.     | Username: 42564536<br>Password: wrong  | Invalid login credentials                           | Invalid login credentials                    | Pass |
| <b>TC-003</b> | Empty fields         | 1. Leave both fields empty.<br>2. Click Login                  | Username: empty<br>Password: empty     | Please enter your ID (or Email) and password        | Please enter your ID (or Email) and password | Pass |
| <b>TC-004</b> | Short password       | 1. Enter valid username and short password.<br>2. Click Login. | Username: 42564536<br>Password: 1234   | Gives a message displaying “Password is too short”. | Invalid login credentials                    | Fail |
| <b>TC-005</b> | Account lock after 3 | 1. Enter invalid username                                      | Username: 42564536                     | Account is  | Invalid                                      |      |

|  |                 |                                    |                    |        |                   |      |
|--|-----------------|------------------------------------|--------------------|--------|-------------------|------|
|  | failed attempts | and password.<br>2. Repeat thrice. | Password:<br>Wrong | locked | login credentials | Fail |
|--|-----------------|------------------------------------|--------------------|--------|-------------------|------|

#### **Task 4: Identify the Functional Testing Techniques Used (10 points)**

For each of your test cases in Task 3, classify them under appropriate techniques such as:

- Unit Testing
- Integration Testing
- System Testing
- Regression Testing
- Smoke Testing
- Sanity Testing
- User Acceptance Testing (UAT)

Use definitions from the document to justify your answers.

| Test Case      | Technique Used      | Justification   |
|----------------|---------------------|---|
| Valid login    | System Testing      | Tests if the system accepts valid credentials   |
| Invalid login  | System Testing      | Checks if the system gives an error message if it encounters invalid credentials.                   |
| Empty fields   | System Testing      | Checks if the system gives an error message if it has empty fields.                                 |
| Short password | Integration Testing | This test verifies the interaction between the login UI and the backend password validation module. |

|  |                     |  |
|--|---------------------|--|
| Account locked after 3 failed attempts | Integration Testing | Used when verifying interaction between multiple components. |
|--|---------------------|--|

### Task 5: Compare Functional vs Non-Functional Tests (10 points)

Using the comparison table in the document , list **3 functional** and **3 non-functional** tests applicable to the login page.

| Functional                             | Non-Functional      |
|--|---------------------|
| Valid Login                            | Empty Fields        |
| Invalid Login                          | Short Password      |
| Account locked after 3 failed attempts | Login response time |

### Task 6: Benefits & Limitations Analysis (10 points)

Based on the “Benefits” and “Limitations of Functional Testing” sections of the document , answer the following:

1. How does functional testing improve software quality in the login module?
2. What limitations may affect the accuracy of your test results?

### Task 7: Practical Execution (Hands-On) (10 points)

Perform any **2** of your test cases manually (or using a mock HTML login page you create).

Submit **screenshots** showing:

- Input entered
- System response
- Your interpretation (Pass/Fail)

| Test Case   | Input Entered             | System Response           | Interpretation |
|-------------|---------------------------|---------------------------|----------------|
| Valid Login | Refer to the “Screenshot” | Refer to the “Screenshot” | Pass           |

|               |                                     |                                     |      |
|---------------|-------------------------------------|-------------------------------------|------|
|               | Folder                              | Folder                              |      |
| Invalid Login | Refer to the “Screenshot”<br>Folder | Refer to the “Screenshot”<br>Folder | Pass |