Purpose:
This document demonstrates application of Equivalence partitioning (EP) and Boundary value analysis (BVA) techniques to a typical login form for educational purposes.

Note:
The actual application supports only one predefined username and password. Test design below assumes a generic login form as commonly implemented in real projects.

Scope:
Tested component: login form
Fields: username, password
Action: login button

Equivalence Partitioning

1. Username - Equivalence classes

Class ID	Description	Example
U-EP-01	Valid username	tomsmith
U-EP-02	Invalid username	wrongUser
U-EP-03	Empty username	""
U-EP-04	Whitespace only	" "

2. Password - Equivalence classes

Class ID	Description	Example
P-EP-01	Valid password	SuperSecretPassword!
P-EP-02	Invalid password	wrongPassword
P-EP-03	Empty password	""
P-EP-04	Whitespace only	" "

3. Test combinations

TC ID	Username Class	Password Class	Expected Result
TC-EP-01	U-EP-01	P-EP-01	Successful login
TC-EP-02	U-EP-02	P-EP-01	Error message
TC-EP-03	U-EP-01	P-EP-02	Error message
TC-EP-04	U-EP-03	P-EP-03	Error message
TC-EP-05	U-EP-04	P-EP-04	Error message

Boundary value analysis

Note: The application does not specify explicit length constraints for input fields. Boundaries below are assumed based on common login form practices.

Username - BVA

Case	Description	Input
U-BVA-01	Empty	""
U-BVA-02	Minimal non-empty	"a"
U-BVA-03	Typical valid	"tomsmith"
U-BVA-04	Very long input	256 characters

Password - BVA

Case	Description	Input
P-BVA-01	Empty	""
P-BVA-02	Minimal non-empty	"a"
P-BVA-03	Valid	"SuperSecretPassword!"
P-BVA-04	Very long input	256 characters

P.s.: EP and BVA cases are not intended to duplicate functional scenario test cases, but to demonstrate test design techniques and identify potential gaps in requirements.