IT 314

Software Engineering

Real Time Collaborative Editor

Black Box Testing

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LOGIN

1) **UserName Constraints:-**

- **VC1:-** The username cannot be empty.
- **VC2:-** The username must only contain lowercase letters (`a-z`), uppercase letters (`A-Z`), digits (`0-9`), and underscores (`_`).
- **VC3:-** The username length must be between 1 and 254 characters.

Equivalence Classes for Username Validation

Valid Equivalence Classes

- **VEC1:** Usernames with lengths between 1 and 254 characters.
- **VEC2:** Usernames containing only valid characters (a-z, A-Z, 0-9, _).

Invalid Equivalence Classes

- **IEC1:** Empty usernames (0 characters).
- **IEC2:** Usernames exceeding 254 characters.

- **IEC3:** Usernames containing invalid characters (e.g., spaces, special characters other than _).

UserName	Expected Output	Displayed Output	Test Case Status	Equivalence Classes Covered
user_123	Username accepted	Username accepted	Test Case Pass	VEC1,VEC2
@user	Error message (Invalid character)	Error message (Invalid character)	Test Case Pass	IEC3
useruser…(255 chars)	Error message (Exceeds max length)	Error message (Exceeds max length)	Test Case Fail	IEC2
user	Username accepted	Username accepted	Test Case Pass	VEC1,VEC2
user name	Error message (Invalid character)	Error message (Invalid character)	Test Case Fail	IEC3
ValidUser_9	Username accepted	Username accepted	Test Case Pass	VEC1,VEC2
	Error message (Username cannot be empty)	Error message (Username cannot be empty)	Test Case Fail	IEC1

2) Password Constraints:-

- **PC1:** The password length must be at least 8 characters.
- **PC2:** The password length must be less than 255 characters.

Equivalence Classes for Password Validation

1. **Valid Equivalence Classes:**

   - **EC1:** Passwords with length between 8 and 254 characters.

2. **Invalid Equivalence Classes:**

   - **EC2**: Passwords with fewer than 8 characters (e.g., 7 characters).

   - **EC3:** Passwords with 255 characters or more.

Test Cases for Password Validation

Password	Expected Output	Displayed Output	Test Case Status	Equivalence Class Covered
abcdefgh	Password accepted	Password accepted	Test Case Pass	EC1
abcdefghij	Password accepted	Password accepted	Test Case Pass	EC1
a...a (254 characters)	Password accepted	Password accepted	Test Case Pass	EC1
abcdefg	Error message (Password must contain at least 8 characters)	Error message (Password must contain at least 8 characters)	Test Case Fail	EC2

a...a (255 characters)	Error message (Password too long)	Error message (Password too long)	Test Case Fail	EC3

SIGN UP

1) UserName Constraints:-

VC1:- The username cannot be empty.

VC2:- The username must only contain lowercase letters (`a-z`), uppercase letters (`A-Z`), digits (`0-9`), and underscores (`_`).

VC3:- The username length must be between 1 and 254 characters.

VC4:- The username must be unique.

Equivalence Classes for Username Validation

Valid Equivalence Classes

- **VEC1:** Usernames with lengths between 1 and 254 characters.
- **VEC2:** Usernames containing only valid characters (a-z, A-Z, 0-9, _).
- **VEC3:** Username is unique

Invalid Equivalence Classes

- **IEC1:** Empty usernames (0 characters).
- **IEC2:** Usernames exceeding 254 characters.
- **IEC3:** Usernames containing invalid characters (e.g., spaces, special characters other than _).
- **IEC4:** Username is non-unique

UserName	Expected Output	Displayed Output	Test Case Status	Equivalence Classes Covered
user_123	Username accepted	Username accepted	Test Case Pass	VEC1,VEC2

@user	Error message (Invalid character)	Error message (Invalid character)	Test Case Pass	IEC3
useruser…(255 chars)	Error message (Exceeds max length)	Error message (Exceeds max length)	Test Case Fail	IEC2
user	Username accepted	Username accepted	Test Case Pass	VEC1,VEC2
user name	Error message (Invalid character)	Error message (Invalid character)	Test Case Fail	IEC3
ValidUser_9	Username accepted	Username accepted	Test Case Pass	VEC1,VEC2
	Error message (Username cannot be empty)	Error message (Username cannot be empty)	Test Case Fail	IEC1
ValidUser_9	Error message (Username must be unique)	Error message (Username must be unique)	TestCase Fail	IEC4

2) Email ID Constraints:-

- **EC1:** The email must have a valid format, i.e., it should contain:
  - A non-empty username part before the @ symbol.

  - An @ symbol separating the username and domain.
  - A domain with a non-empty subdomain and top-level domain separated by a dot (.).
- **EC2:** The email cannot contain spaces
- **EC3:** The email must have at least one character on either side of the @ and . symbols.
- **EC4:** The email should not start or end with

special characters like @ or ..

Equivalence Classes for Email ID Validation

1. **Valid Equivalence Classes:**
   - **VC1:** Valid email format with common characters
   - **VC2:** Valid email with numbers in username and domain.
   - **VC3:** Valid email with allowed special characters in the username.
2. **Invalid Equivalence Classes:**
   - **IC1:** Missing @ symbol
   - **IC2:** Missing domain or TLD.
   - **IC3:** Missing username
   - **IC4:** Spaces in email
   - **IC5:** Email starts or ends with special characters.

   - **IC6:** Multiple @ symbols.

Email ID	Expected Output	Displayed Output	Test Case Status	Equivalence Class Covered
user@example.com	Email accepted	Email accepted	Test Case Pass	VC1
user123@domain456.com	Email accepted	Email accepted	Test Case Pass	VC2
user.name+123@example.com	Email accepted	Email accepted	Test Case Pass	VC3
userexample.com	Error message (Missing @ symbol)	Error message (Missing @ symbol)	Test Case Fail	IC1

user@	Error message (Missing domain/TLD)	Error message (Missing domain/TLD)	Test Case Fail	IC2
user@domain	Error message (Missing TLD)	Error message (Missing TLD)	Test Case Fail	IC2
example.com	Error message (Missing username)	Error message (Missing username)	Test Case Fail	IC3
user @ example.com	Error message	Error message	Test Case Fail	IC4
user@ example.com	Error message (Spaces in email)	Error message (Spaces in email)	Test Case Fail	IC4
user@exam ple.com	Error message (Spaces in email)	Error message (Spaces in email)	Test Case Fail	IC4
.user@example.com	Error message (Invalid start character)	Error message (Invalid start character)	Test Case Fail	IC5
user@example.com.	Error message (Invalid end character)	Error message (Invalid end character)	Test Case Fail	IC5
user@@example.com	Error message (Multiple @ symbols)	Error message (Multiple @ symbols)	Test Case Fail	IC6

3) Password Constraints:-

- **PC1:** The password length must be at least 8 characters.

- **PC2:** The password length must be less than 255 characters.

Equivalence Classes for Password Validation

3. Valid Equivalence Classes:

- **EC1:** Passwords with length between 8 and 254 characters.

4. Invalid Equivalence Classes:

- **EC2:** Passwords with fewer than 8 characters (e.g., 7 characters).

- **EC3:** Passwords with 255 characters or more.

Test Cases for Password Validation

Password	Expected Output	Displayed Output	Test Case Status	Equivalence Class Covered
abcdefgh	Password accepted	Password accepted	Test Case Pass	EC1
abcdefghij	Password accepted	Password accepted	Test Case Pass	EC1
`a...a` (254	Password	Password	Test Case	EC1
characters)	accepted	accepted	Pass	
abcdefg	Error message (Password must contain at least 8 characters)	Error message (Password must contain at least 8 characters)	Test Case Fail	EC2

a...a (255 characters)	Error message (Password too long)	Error message (Password too long)	Test Case Fail	EC3

Profile

1) FullName Profile Constraints

- **FC1:** The FullName cannot be empty.
- **FC2:** The FullName must only contain lowercase (a-z), uppercase (A-Z), and spaces ([Space]).
- **FC3:** The FullName length must be between 1 and 254 characters.

Equivalence Classes for FullName Validation

Valid Equivalence Classes

- **VEC1:** FullName with lengths between 1 and 254 characters.
- **VEC2:** FullName containing only valid characters (a-z, A-Z, and spaces).

Invalid Equivalence Classes

- **IEC1:** Empty FullName (0 characters).
- **IEC2:** FullName exceeding 254 characters.
- **IEC3:** FullName containing invalid characters (e.g., digits, special characters, etc.).

Test Cases for FullName Profile Validation

FullName	Expected Output	Displayed Output	Test Case Status	Equivalence Classes Covered
abc Xyz	Profile accepted	Profile accepted	Pass	VEC1,VEC2
AbcXyz	Profile accepted	Profile accepted	Pass	VEC1,VEC2

Abc Xyz	Profile accepted	Profile accepted	Pass	VEC1,VEC2
abc xyz	Profile accepted	Profile accepted	Pass	VEC1,VEC2
	Error: FullName cannot be empty	Error: FullName cannot be empty	Fail	IEC1
abc123	Error: Invalid character	Error: Invalid character	Fail	IEC3
abc!Xyz	Error: Invalid character	Error: Invalid character	Fail	IEC3
Abc Xyz	Profile accepted	Profile accepted	Pass	VEC1,VEC2
abcxyzabcx yzabc... (255 chars)	Error: Exceeds max length	Error: Exceeds max length	Fail	IEC2

Project Name

1) Project Name Constraints:-

- **PNC1:** The project name must have a length between 1 and 254 characters (inclusive).
- **PNC2:** The project name can only contain the characters: lowercase letters (a-z), uppercase letters (A-Z), digits (0-9), and spaces ([Space]).
- **PNC3:** The project name can be non-unique.

Equivalence Classes for Project Name Validation

Valid Equivalence Classes:

- **ECP1:** Project names with lengths between 1 and 254 characters.
- **ECP2:** Project names with only allowed characters (a-z, A-Z, 0-9, [Space]).

Invalid Equivalence Classes:

- **ECP3:** Project names with 0 characters (empty name).
- **ECP4:** Project names exceeding 254 characters.
- **ECP5:** Project names containing invalid characters (e.g., special characters such as @, #, $, %, &, *).

Test Cases for Project Name Validation:-

Project Name	Expected Output	Displayed Output	Test Case Status	Equivalence classes Covered
A	Project name accepted	Project name accepted	Pass	ECP1,ECP2
Valid Project	Project name accepted	Project name accepted	Pass	ECP1, ECP2
Valid123	Project name accepted	Project name accepted	Pass	ECP1, ECP2
	Error: Project name cannot be empty	Error: Project name cannot be empty	Fail	ECP3
Invalid@Name	Error: Project name contains invalid characters	Error: Project name contains invalid characters	Fail	ECP5
Another Project Name ... (255 chars)	Error: Project name too Long	Error: Project name too Long	Fail	ECP4

Change Project Name

1) Change Project Name Constraints:-

- **CPNC1:** The project name must have a length between 1 and 254 characters (inclusive).

- **CPNC2:** The project name can only contain the characters: lowercase letters (a-z), uppercase letters (A-Z), digits (0-9), and spaces ([Space]).

- **CPNC3:** The project name can be non-unique.

Equivalence Classes for Project Name Validation

Valid Equivalence Classes:

- **ECP1:** Project names with lengths between 1 and 254 characters.
- **ECP2:** Project names with only allowed characters (a-z, A-Z, 0-9, [Space]).

Invalid Equivalence Classes:

- **ECP3:** Project names with 0 characters (empty name).
- **ECP4:** Project names exceeding 254 characters.
- **ECP5:** Project names containing invalid characters (e.g., special characters such as @, #, $, %, &, *).

Test Cases for Project Name Validation:-

Project Name	Expected Output	Displayed Output	Test Case Status	Equivalence classes Covered
A	Project name accepted	Project name accepted	Pass	ECP1,ECP2
Valid Project	Project name accepted	Project name accepted	Pass	ECP1, ECP2
Valid123	Project name accepted	Project name accepted	Pass	ECP1, ECP2
	Error: Project name cannot be empty	Error: Project name cannot be empty	Fail	ECP3
Invalid@Name	Error: Project name contains invalid characters	Error: Project name contains invalid characters	Fail	ECP5
Another Project Name ... (255 chars)	Error: Project name too long	Error: Project name too long	Fail	ECP4

File Name

1) File Name Constraints:-

- **FNC1:** The file name must have a length between 1 and 254 characters (inclusive).
- **FNC2:** The file name can only contain characters: lowercase letters (a-z), uppercase letters (A-Z), periods (.), underscores (_), and hyphens (-).
- **FNC3:** The file name must be unique.

Equivalence Classes for File Name Validation

Valid Equivalence Classes:

- **ECF1:** File names with lengths between 1 and 254 characters.
- **ECF2:** File names containing only allowed characters (a-z, A-Z, ., _, -).
- **ECF3:** Unique file names within the project

Invalid Equivalence Classes:

- **ECF4:** File names with 0 characters (empty name).
- **ECF5:** File names exceeding 254 characters.
- **ECF6:** File names containing invalid characters (e.g., @, #, $, %, &, *).
- **ECF7:** Duplicate file names in the same /project

Test Cases for File Name Validation:-

File Name	Expected Output	Displayed Output	Test Case Status	Equivalence Classes Covered
A	File name accepted	File name accepted	Pass	ECF1,ECF2, ECF3
Valid_File-N ame.txt	File name accepted	File name accepted	Pass	ECF1,ECF2, ECF3
Another.Valid.File_Name	File name accepted	File name accepted	Pass	ECF1,ECF2, ECF3
	Error: File name cannot be empty	Error: File name cannot be empty	Fail	ECF4
ThisFileNam eIsTooLong. .. (255 characters)	Error: File name too long	Error: File name too long	Fail	ECF5
Invalid@Na me.txt	Error: File name contains invalid characters	Error: File name contains invalid characters	Fail	ECF6
Valid_File-N ame.txt	Error: File name must be unique	Error: File name must be unique	Fail	ECF7

Folder Name

1) Folder Name Constraints:-

- **FNC1:** The folder name must have a length between 1 and 254 characters (inclusive).
- **FNC2:** The folder name can only contain characters: lowercase letters (a-z), uppercase letters (A-Z), periods (.), underscores (_), and hyphens (-).
- **FNC3:** The folder name must be unique.

Equivalence Classes for File Name Validation

Valid Equivalence Classes:

- **ECF1:** Folder names with lengths between 1 and 254 characters.
- **ECF2:** Folder names containing only allowed characters (a-z, A-Z, ., _, -).
- **ECF3:** Unique folder names within the project

Invalid Equivalence Classes:

- **ECF4:** Folder names with 0 characters (empty name).
- **ECF5:** Folder names exceeding 254 characters.
- **ECF6:** Folder names containing invalid characters (e.g., @, #, $, %, &, *).
- **ECF7:** Duplicate folder names in the same /project

Test Cases for Folder Name Validation:-

File Name	Expected Output	Displayed Output	Test Case Status	Equivalence Classes Covered
A	Folder name accepted	Folder name accepted	Pass	ECF1,ECF 2,ECF3
Valid_Fold er-Name.tx t	Folder name accepted	Folder name accepted	Pass	ECF1,ECF 2,ECF3
Another.Valid.Folder_ Name	Folder name accepted	Folder name accepted	Pass	ECF1,ECF 2,ECF3
	Error: Folder name cannot be empty	Error: Folder name cannot be empty	Fail	ECF4
ThisFolder NameIsTo oLong... (255 characters)	Error: Folder name too long	Error: Folder name too long	Fail	ECF5
Invalid@N ame.txt	Error: Folder name contains invalid characters	Error: Folder name contains invalid characters	Fail	ECF6
Valid_Fold er-Name.tx t	Error: Folder name must be unique	Error: Folder name must be unique	Fail	ECF7

Add Collaborators

1) Collaborator Constraints:-

- **VC1:-** The username cannot be empty.
- **VC2:-** The username must only contain lowercase letters (`a-z`), uppercase letters (`A-Z`), digits (`0-9`), and underscores (`_`).
- **VC3:-** The username length must be between 1 and 254 characters.

Equivalence Classes for Collaborator Username Validation

Valid Equivalence Classes

- **VEC1:** Usernames with lengths between 1 and 254 characters.
- **VEC2:** Usernames containing only valid characters (a-z, A-Z, 0-9, _).

Invalid Equivalence Classes

- **IEC1:** Empty usernames (0 characters).
- **IEC2:** Usernames exceeding 254 characters.
- **IEC3:** Usernames containing invalid characters (e.g., spaces, special characters other than _).

Test Cases for Collaborator Username Validation

UserName	Expected Output	Displayed Output	Test Case Status	Equivalence Classes Covered
user_123	Collaborator added successfully	Collaborator added successfully	Test Case Pass	VEC1,VEC2
@user	Error message (Invalid character)	Error message (Invalid character)	Test Case Pass	IEC3
useruser… (255 chars)	Error message (Exceeds max length)	Error message (Exceeds max length)	Test Case Fail	IEC2
user	Collaborator added successfully	Collaborator added successfully	Test Case Pass	VEC1,VEC2
user name	Error message (Invalid character)	Error message (Invalid character)	Test Case Fail	IEC3
ValidUser_9	Collaborator added successfully	Collaborator added successfully	Test Case Pass	VEC1,VEC2
	Error message (Collaborator Username cannot be empty)	Error message (Collaborator Username cannot be empty)	Test Case Fail	IEC1

Change Full Name

1) FullName Profile Constraints

- **FC1:** The FullName cannot be empty.
- **FC2:** The FullName must only contain lowercase (a-z), uppercase (A-Z), and spaces ([Space]).
- **FC3:** The FullName length must be between 1 and 254 characters.

Equivalence Classes for FullName Validation

Valid Equivalence Classes

- **VEC1:** FullName with lengths between 1 and 254 characters.
- **VEC2:** FullName containing only valid characters (a-z, A-Z, and spaces).

Invalid Equivalence Classes

- **IEC1:** Empty FullName (0 characters).
- **IEC2:** FullName exceeding 254 characters.
- **IEC3:** FullName containing invalid characters (e.g., digits, special characters, etc.).

Test Cases for FullName Profile Validation

FullName	Expected Output	Displayed Output	Test Case Status	Equivalence Classes Covered
abc Xyz	Profile accepted	Profile accepted	Pass	VEC1,VEC2
AbcXyz	Profile accepted	Profile accepted	Pass	VEC1,VEC2
Abc Xyz	Profile accepted	Profile accepted	Pass	VEC1,VEC2
abc xyz	Profile accepted	Profile accepted	Pass	VEC1,VEC2
	Error: FullName cannot be empty	Error: FullName cannot be empty	Fail	IEC1
abc123	Error: Invalid character	Error: Invalid character	Fail	IEC3
abc!Xyz	Error: Invalid character	Error: Invalid character	Fail	IEC3
Abc Xyz	Profile accepted	Profile accepted	Pass	VEC1,VEC2
abcxyzabcxyzabc... (255 chars)	Error: Exceeds max length	Error: Exceeds max length	Fail	IEC2

Chat Input

1) Chat Input Constraints:-

- **CI1:** The chat input must not be empty.

Equivalence Classes for Chat Input Validation:

Valid Equivalence Classes:

- **VC1:** Non-Empty chat input with alphanumeric, special characters and with spaces.

Invalid Equivalence Classes:

- **IC1:-** Empty Chat Input

Chat Input	Expected Output	Displayed Output	Test Case Status	Equivalence Class Covered
"Hello123! How are you"	Chat accepted	Chat accepted	Pass	VC1
""	Error message (Chat input cannot be empty)	Error message (Chat input cannot be empty)	Fail	IC1