**Black Box Testing**

**Testing Method:** Equivalence Class (Discrete Values) and Boundary Value Testing (Continuous Values)

**Use Case: Register**

**Equivalence Class (EC) for First Name**

| **Valid EC** | * A valid first name   e.g: ‘John’ |
| --- | --- |
| **Invalid EC** | * An empty first name   e.g: ‘’ |

**Equivalence Class (EC) for Last Name**

| **Valid EC** | * A valid last name   e.g: ‘Doe’ |
| --- | --- |
| **Invalid EC** | * An empty last name   e.g: ‘’ |

**Equivalence Class (EC) for Username**

| **Valid EC** | * A valid userame   e.g: ‘JohnDoe123’ |
| --- | --- |
| **Invalid EC** | * An empty username   e.g: ‘’ |

**Equivalence Class (EC) for Email**

| **Valid EC** | * A valid email address   e.g: test@test.com |
| --- | --- |
| **Invalid EC** | * Email address without ‘@’ symbol   e.g: examplegmail.com   * Missing Domain Name   e.g: example@.com   * Incomplete Domain Name   e.g: example@aa   * Missing Username   e.g: @gmail.com |

**Equivalence Class (EC) for Password**

| **Valid EC** | * A valid Password contains the following:   i.e. it must contain:   * + Length >=8   + Upper case (A, B, C, D)   + Lower case (a, b, c, d)   + Symbol (!, @, #, $, %, ^, &, \*, \_)   + Digit (0, 1, 2, 3, 4, 5, 6, 7, 8, 9)   e.g: Password1! |
| --- | --- |
| **Invalid EC** | * Invalid Password   I.e. Possible invalid passwords include:   * + Pword1! (length < 8)   + PASSWORD1! (No lower case)   + password1! (No upper case)   + Password1 (No symbol)   + Password! (No digit) |

**Boundary Values for Password Length**

| **Valid EC (8 and above)** | Boundary Values | 8 (Lower Boundary) |
| --- | --- | --- |
| Lower Boundary (8) | **7**, **8**, **9** |
| **Invalid EC (0 to 7)** | On Boundary Values | 0,7 |
| Lower Boundary (0) | **-1**, **0**, **1** |
| Upper Boundary (7) | **6, 7, 8** |

* Password length range valid equivalence class (Length >=8)
  + Valid Boundary Values: {8,9}
  + Invalid Boundary Values: {0,7}
    - 1 is excluded from this set as it falls within the same equivalence class of 0 <= password length <= 7
    - -1 is excluded from this set as it’s impossible to get a password length of -1
    - No upper boundary for the boundary value 8 as we do not limit the password length

**Final Input Values for Test Cases**

* First Name
  + Valid Values: {‘John’}
  + Invalid Values: {‘’}
* Last Name
  + Valid Values: {‘Doe’}
  + Invalid Values: {‘’}
* Username
  + Valid Values: {‘JohnDoe123’}
  + Invalid Values: {‘’}
* Email
  + Valid Values: {‘johndoe@gmail.com’}
  + Invalid Values: {‘johndoegmail.com’, ‘johndoe@.com’, ‘johndoe@gmail’, ‘@gmail.com’}
* Password
  + Valid Values: {‘Password1!’, ‘Password1!!’}
  + Invalid Values: {‘Password1’, ‘password1!’, ‘PASSWORD1!’, ‘Password!’, ‘Pword1!’}

**Test Cases**

| Test Input | | | | | Expected Output | Actual Output |
| --- | --- | --- | --- | --- | --- | --- |
| First Name | Last Name | Username | Password | Email |
| John | Doe | JohnDoe123 | Password1! | johndoe@gmail.com | User Created | User Created |
| John | Doe | JohnDoe123 | Password1!! | johndoe@gmail.com | User Created | User Created |
| **‘’** | Doe | JohnDoe123 | Password1! | johndoe@gmail.com | Message prompt to fill out the first name field | Message prompt to fill out the first name field |
| John | **‘’** | JohnDoe123 | Password1! | johndoe@gmail.com | Message prompt to fill out the last name field | Message prompt to fill out the last name field |
| John | Doe | **‘’** | Password1! | johndoe@gmail.com | Message prompt to fill out the username field | Message prompt to fill out the username field |
| John | Doe | JohnDoe123 | **‘’** | johndoe@gmail.com | Message prompt to fill out the password field | Message prompt to fill out the password field |
| John | Doe | JohnDoe123 | Password1! | **‘’** | Message prompt to fill out the email field | Message prompt to fill out the email field |
| John | Doe | **propertyIQ (Existing Username)** | Password1! | johndoe@gmail.com | Username is taken prompt | Username is taken prompt |
| John | Doe | JohnDoe123 | **Password1** | johndoe@gmail.com | Password must have at least 1 symbol  prompt | Password must have at least 1 symbol  prompt |
| John | Doe | JohnDoe123 | **password1!** | johndoe@gmail.com | Password must at least have 1 uppercase letter prompt | Password must at least have 1 uppercase letter prompt |
| John | Doe | JohnDoe123 | **PASSWORD1!** | johndoe@gmail.com | Password must at least have 1 lowercase letter prompt | Password must at least have 1 lowercase letter prompt |
| John | Doe | JohnDoe123 | **Password!** | johndoe@gmail.com | Password must at least have 1 digit prompt | Password must at least have 1 digit prompt |
| John | Doe | JohnDoe123 | **Pword1!** | johndoe@gmail.com | Password must at least be 8 characters long prompt | Password must at least be 8 characters long prompt |
| John | Doe | JohnDoe123 | Password1! | **johndoegmail.com** | Please include an @ in the email prompt | Please include an @ in the email prompt |
| John | Doe | JohnDoe123 | Password1! | **johndoe@.com** | ‘.’ is used at a wrong position in ‘.com’ prompt | ‘.’ is used at a wrong position in ‘.com’ prompt |
| John | Doe | JohnDoe123 | Password1! | **johndoe@gmail** | Please enter a valid email prompt | Please enter a valid email prompt |
| John | Doe | JohnDoe123 | Password1! | **@gmail.com** | ‘@gmail.com’ is incomplete prompt | ‘@gmail.com’ is incomplete prompt |