



## **Software Engineering - (IT314)**

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## **Black Box Testing**

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### (A) Citizen Registration Page

## Constraints

Field	Constraint
First Name	Min length 1, Max length 255.
Last Name	Min length 1, Max length 255.
Username	Cannot be empty. Must be unique.
Email	Cannot be empty. Must contain '@'
Phone Number	Cannot be empty. Exactly 10 digits.
Password	Cannot be empty. Min length 6 characters.
Confirm Password	Must match 'Password' field.

## Equivalence Partitioning (EP)

Class	First Name	Last Name	Username	Email	Phone	Password	Confirm Pwd	OTP	Result
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E1 (Valid)	Valid	Valid	Valid	Valid	Valid	Valid	Valid	Valid (matched)	Success
E2 (Invalid)	Empty	Valid	Valid	Valid	Valid	Valid	Valid	[Ignored]	Error
E3 (Invalid)	Valid	Empty	Valid	Valid	Valid	Valid	Valid	[Ignored]	Error
E4 (Invalid)	Valid	Valid	Empty	Valid	Valid	Valid	Valid	[Ignored]	Error
E5 (Invalid)	Valid	Valid	Valid	Invalid Format	Valid	Valid	Valid	[Ignored]	Error
E6 (Invalid)	Valid	Valid	Valid	Duplicate	Valid	Valid	Valid	[Ignored]	Error
E7 (Invalid)	Valid	Valid	Valid	Valid	Invalid ( <10 digits )	Valid	Valid	[Ignored]	Error

E8 (Invalid )	Valid	Valid	Valid	Valid	Valid	Invalid (<6 chars)	Valid	[Ignored ]	Error
E9 (Invalid )	Valid	Valid	Valid	Valid	Valid	Valid	Mismatch	[Ignored ]	Error
E10 (Invalid )	Valid	Valid	Valid	Valid	Valid	Valid	Valid	Invalid	Error

### Boundary Value Analysis (BVA) & Test Cases

Test ID	Scenario	First Name	Last Name	Email	Phone	Password	Expected Output	Reason
TC-01	BVA: Name Len (Min-1)	[Empty]	Doe	user@test.com	9876543210	Pass@123	Fail	Length 0 (Empty)
TC-02	BVA: Name Len (Min)	A	Doe	user@test.com	9876543210	Pass@123	Success	Length 1 (Valid)
TC-03	BVA: Name Len (Max)	[255 chars]	Doe	user@test.com	9876543210	Pass@123	Success	Length 255 (Valid)

TC-04	BVA: Name Len (Max+1)	[256 chars]	Doe	user@test.com	9876543210	Pass@123	Fail	Length > 255
TC-05	BVA: Pwd Length (Min-1)	John	Doe	user@test.com	9876543210	Pa123	Fail	Length < 6
TC-06	BVA: Pwd Length (Min)	John	Doe	user@test.com	9876543210	Pa@123	Success	Length = 6 (Valid)
TC-07	BVA: Mobile (Min-1)	John	Doe	user@test.com	987654321	Pass@123	Fail	Digits < 10
TC-08	BVA: Mobile (Exact)	John	Doe	user@test.com	9876543210	Pass@123	Success	Digits = 10 (Valid)
TC-09	BVA: Mobile (Max+1)	John	Doe	user@test.com	98765432101	Pass@123	Fail	Digits > 10

## (B) Field Worker and Government Authority Registration

### Constraints

Field	Constraint
First Name	Min length 1, Max length 255.
Last Name	Min length 1, Max length 255.
Username	Cannot be empty. Unique.
Email	Cannot be empty. Valid format. Unique.
Phone Number	Cannot be empty. Exactly 10 digits. Unique.
Password	Cannot be empty. Min length 8 characters.
Confirm Password	Must match 'Password' field.
Department	Select from Dropdown. Mandatory.
Other	Required IF Department = "Other". Disabled otherwise.

## Equivalence Partitioning (EP)

Class	First Name	Last Name	Username	Email	Phone	Password	Confirm Pwd	Department	New Dept Field	OTP	Result
E1 (Valid)	Valid	Valid	Valid	Valid	Valid	Valid	Valid	Existing (e.g., Health)	[Ignored/Empty]	Valid	Success
E2 (Valid)	Valid	Valid	Valid	Valid	Valid	Valid	Valid	"Other"	Valid	Valid	Success
E3 (Invalid)	Empty	Valid	Valid	Valid	Valid	Valid	Valid	Existing	[Ignored]	[Ignored]	Error
E4 (Invalid)	Valid	Empty	Valid	Valid	Valid	Valid	Valid	Existing	[Ignored]	[Ignored]	Error
E5 (Invalid)	Valid	Valid	Empty	Valid	Valid	Valid	Valid	Existing	[Ignored]	[Ignored]	Error
E6 (Invalid)	Valid	Valid	Valid	Invalid /	Valid	Valid	Valid	Existing	[Ignored]	[Ignored]	Error

				Empty							
E7 (Invalid)	Valid	Valid	Valid	Valid	Invalid (<10 digits)	Valid	Valid	Existing	[Ignored]	[Ignored]	Error
E8 (Invalid)	Valid	Valid	Valid	Valid	Valid	Invalid (<6 chars)	Valid	Existing	[Ignored]	[Ignored]	Error
E9 (Invalid)	Valid	Valid	Valid	Valid	Valid	Valid	Mismatch	Existing	[Ignored]	[Ignored]	Error
E10 (Invalid)	Valid	Valid	Valid	Valid	Valid	Valid	Valid	[Not Selected]	[Any]	[Ignored]	Error
E11 (Invalid)	Valid	Valid	Valid	Valid	Valid	Valid	Valid	"Other"	Empty	[Ignored]	Error
E12 (Invalid)	Valid	Valid	Valid	Valid	Valid	Valid	Valid	Existing	Ignored	Invalid	Error



E13(Invalid)	Valid	Valid	Valid	Valid	Valid	Valid	Valid	“Other”	Valid	Invalid	Error
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### Boundary Value Analysis (BVA) & Test Cases

Test ID	Scenario	Field Tested	Input / Condition	Expected Output	Reason
TC-F W-01	BVA: Name Min-1	First/Last Name	[Empty String] (Len 0)	Fail	Mandatory field (Min Length 1).
TC-F W-02	BVA: Name Min	First/Last Name	"A" (Len 1)	Success	Minimum valid length.
TC-F W-03	BVA: Name Max	First/Last Name	[String of 255 chars]	Success	Maximum valid length.
TC-F W-04	BVA: Name Max+1	First/Last Name	[String of 256 chars]	Fail	Exceeds maximum length.
TC-F W-05	BVA: Pwd Min-1	Password	"Pa123" (Len 5)	Fail	Less than 8 characters.
TC-F W-06	BVA: Pwd Min	Password	"Pa@123" (Len 6)	Success	Minimum valid length.
TC-F W-07	BVA: Mobile Min-1	Mobile	987654321 (9 digits)	Fail	Less than 10 digits.

TC-F W-08	BVA: Mobile Exact	Mobile	9876543210 (10 digits)	Success	Exactly 10 digits.
TC-F W-09	BVA: Mobile Max+1	Mobile	98765432101 (11 digits)	Fail	More than 10 digits.
TC-F W-10	BVA: New Dept Min-1	New Dept Name	[Empty] (When "Other" selected)	Fail	Mandatory when "Other" is selected.
TC-F W-11	BVA: New Dept Min	New Dept Name	"R" (Len 1)	Success	Minimum valid length for new dept.
TC-F W-12	BVA: New Dept Max	New Dept Name	[String of 255 chars]	Success	Maximum valid length.
TC-F W-13	BVA: New Dept Max+1	New Dept Name	[String of 256 chars]	Fail	Exceeds maximum length.

## (C) Login Page

### Constraints

Field	Constraint
Name	Cannot be empty. Must be registered.
Password	Cannot be empty. Must match stored password.

### Equivalence Partitioning (EP)

Class	Name	Password	Result
E1 (Valid)	Valid	Valid	Success
E2 (Invalid)	Valid	Invalid	Error
E3 (Invalid)	Invalid	Invalid	Error

### BVA & Test Cases

Test ID	Scenario	Name	Password	Expected Output	Reason
TC-L-01	BVA: Name Null	[Null]	CorrectPass	Fail	Mandatory Field
TC-L-02	BVA: Pwd Null	RegisteredUser	[Null]	Fail	Mandatory Field
TC-L-03	Happy Path	RegisteredUser	CorrectPass	Success	Valid User/Pass
TC-L-04	Constraint: Wrong Pwd	RegisteredUser	WrongPass	Fail	Auth Failure

TC-L-05	Constraint: Unregistered	UnknownUser	AnyPass	Fail	User not found
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## (D) Reset Password

### Constraints

Field	Constraint
Email	Cannot be empty. Must contain '@'. Must be registered.
OTP	Cannot be empty. Must match sent OTP.
New Password	Cannot be empty. Min length 6 characters.

### Equivalence Partitioning (EP)

Class	Email	OTP	New Password	Result
E1 (Valid)	Valid	Valid	Valid	Success
E2 (Invalid)	Invalid	Invalid	Invalid	Error
E3 (Invalid)	Invalidt	Invalid	Invalid	Error
E4 (Invalid)	Valid	Incorrect	Valid	Error

E5 (Invalid)	Valid	Valid	Invalid	Error
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### BVA & Test Cases

Test ID	Scenario	Email	OTP	New Password	Expected Output	Reason
TC-RP-01	BVA: New Pwd (Min-1)	valid@test.com	1234	12345	Fail	Length < 6
TC-RP-02	BVA: New Pwd (Min)	valid@test.com	1234	Pa@123	Success	Length = 6 (Valid)
TC-RP-03	Constraint: Wrong OTP	valid@test.com	0000	Pass@123	Fail	OTP Mismatch
TC-RP-04	Constraint: Bad Email	user.com	N/A	Pass@123	Fail	Invalid Format
TC-RP-05	Happy Path	valid@test.com	1234	Pass@123	Success	All Valid

### (E) Profile Page (Change Password)

#### Constraints

Field	Constraint
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Current Password	Cannot be empty. Must match actual current password.
New Password	Cannot be empty. Min length 6 characters.
Confirm Password	Must match 'New Password'.

**Equivalence Partitioning (EP)**

Class	Current Password	New Password	Confirm Password	Result
E1 (Valid)	Valid	Valid	Valid	Success
E2 (Invalid)	Invalid	Valid	Valid	Error
E3 (Invalid)	Correct	Invalid	Valid	Error
E4 (Invalid)	Correct	Valid	Invalid	Error
E5 (Invalid)	Invalid	Invalid	Invalid	Error

**BVA & Test Cases**

Test ID	Scenario	Current Pwd	New Pwd	Confirm Pwd	Expected Output	Reason
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TC-P-01	BVA: New Pwd (Min-1)	CorrectOld	1234567	12345	Fail	Length < 6
TC-P-02	BVA: New Pwd (Min)	CorrectOld	Pass@123	Pa@123	Success	Length = 6 (Valid)
TC-P-03	Constraint: Mismatch	CorrectOld	Pass@123	Pass@999	Fail	Confirmation Mismatch
TC-P-04	Constraint: Wrong Old	WrongOld	Pass@123	Pass@123	Fail	Auth Failed
TC-P-05	Happy Path	CorrectOld	Pass@123	Pass@123	Success	All Valid

## (F) Raise Complaint

### Constraints

Field	Constraint
Description	Cannot be empty.
Location	Cannot be empty.
Department	Cannot be empty.

Attachment	Max 4 files. Supported formats only (Images). Optional field.
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### Equivalence Partitioning (EP)

Class	Description	Location	Dept	Attachment Type	Count	Result
E1 (Valid)	Valid	Valid	Valid	Valid	Valid	Success
E2 (Valid)	Valid	Valid	Valid	Valid(not attached files)	Valid	Success
E3 (Invalid)	Invalid	Valid	Valid	Valid	N/A	Error
E4 (Invalid)	Valid	Valid	Valid	Invalid	Valid	Error
E5 (Invalid)	Valid	Valid	Valid	Valid	Invalid	Error
E5 (Invalid)	Valid	Invalid	Valid	Valid	Valid	Error



## BVA & Test Cases

Test ID	Scenario	Desc	Location	Dept	Attachments	Expected Output	Reason
TC-RC-01	BVA: Min Files (0)	Broken Light	Block A	Electric	0 Files	Success	Optional Field
TC-RC-02	BVA: Max Files (4)	Broken Light	Block A	Electric	4 Files (.jpg)	Success	Max Limit
TC-RC-03	BVA: Max+1 (5)	Broken Light	Block A	Electric	5 Files (.jpg)	Fail	Exceeds Limit
TC-RC-04	Constraint: Null Desc	[Null]	Block A	Electric	0 Files	Fail	Desc Mandatory
TC-RC-05	Constraint: Bad Type	Broken Light	Block A	Electric	1 File (.exe)	Fail	Invalid File Format
TC-RC-06	Constraint: Null Location	Broke N light	[Null]	Electric	1 Files (.jpg)	Fail	Location Mandatory

## (G) Assign Complaint

### Constraints

Field	Constraint
Selection	Cannot be Null. Must select a worker.

### Equivalence Partitioning (EP)

Class	Selection	Result
E1 (Valid)	Valid	Success
E2 (Invalid)	Invalid	Error

### BVA & Test Cases

Test ID	Scenario	Selection	Expected Output	Reason
TC-AC-01	BVA: Null State	[Null]	Fail	Mandatory Selection
TC-AC-02	Happy Path	[Worker Name]	Success	Valid Selection

## (H) Submit Resolution

### Constraints

Field	Constraint
Details	Cannot be empty.
Attachments	Mandatory (Proof required). Min 1 file. Max 4 files. Pillow format only.

### Equivalence Partitioning (EP)

Class	Details	Attachment Type	Count	Result
E1 (Valid)	Valid	Valid	Valid	Success
E2 (Invalid)	Null	Valid	Valid	Error
E3 (Invalid)	Valid	Invalid	Invalid	Error
E4 (Invalid)	Valid	Invalid	Valid	Error
E5 (Invalid)	Valid	Valid	Invalid	Error

## BVA & Test Cases

Test ID	Scenario	Details	Attachments	Expected Output	Reason
TC-SR-01	BVA: Min-1 Files (0)	Fixed it	0 Files	Fail	Proof Mandatory
TC-SR-02	BVA: Min Files (1)	Fixed it	1 File (.jpg)	Success	Valid Boundary
TC-SR-03	BVA: Max Files (4)	Fixed it	4 Files (.jpg)	Success	Max Limit
TC-SR-04	BVA: Max+1 Files (5)	Fixed it	5 Files (.jpg)	Fail	Exceeds Limit
TC-SR-05	Constraint: Null Det	[Null]	1 File (.jpg)	Fail	Details Mandatory