Black Box Testing – Crisis Reporting

Equivalent Class Partitioning:

Validity Check:

Class ID	Input	Output
VE1	Incident Type	Valid incident type (one of: Fire, Medical, Natural Disaster, Security Threat, Infrastructure Failure)
VE2	Description	Valid description (length between 10-1000 characters, contains alphanumeric characters and basic punctuation)
VE3	Severity Level	Valid severity level (integer between 1-10)

Invalidity Check:

Class ID	Input	Output
IVE1	Incident Type	Invalid incident type (empty, null, numeric only, special characters only)
IVE2	Description	Invalid description (empty, null, length < 10 chars, length > 1000 chars, or whitespace only)
IVE3	Severity Level	Invalid severity level (empty, null, < 1, > 10)

1. Individual Field Equivalence Classes

1.1 Incident Type (IT)

Class ID	Input Type	Range/Condition	Validity
IT_EC1	String	"Fire"	Valid
IT_EC2	String	"Medical"	Valid
IT_EC3	String	"Natural Disaster"	Valid
IT_EC4	String	"Security Threat"	Valid
IT_EC5	String	"Infrastructure Failure"	Valid
IT_EC6	Empty String	""	Invalid
IT_EC7	Null	null	Invalid
IT_EC8	Numeric String	"12345"	Invalid
IT_EC9	Special Characters	"@#$%"	Invalid
IT_EC10	Mixed Invalid	"Fire123"	Invalid
IT_EC11	String	Length = 5	Valid
IT_EC12	String	5 < Length < 100	Valid

IT_EC13	String	Length = 100	Valid
IT_EC14	String	Length < 5	Invalid
IT_EC15	String	Length > 100	Invalid

1.2 Description (D)

Class ID	Input Type	Range/Condition	Validity
D_EC1	String	Length = 10 chars	Valid
D_EC2	String	10 < Length < 1000 chars	Valid
D_EC3	String	Length = 1000 chars	Valid
D_EC4	String	Length < 10 chars	Invalid
D_EC5	String	Length > 1000 chars	Invalid
D_EC6	Empty String	""	Invalid
D_EC7	Null	null	Invalid
D_EC8	Whitespace Only	" "	Invalid
D_EC9	Mixed Characters	Alphanumeric + punctuation	Valid
D_EC10	Special Characters	Contains !@#$%^&*()	Valid

1.3 Severity Level (SL)

Class ID	Input Type	Range/Condition	Validity
SL_EC1	Integer selection	1	Valid
SL_EC2	Integer selection	2-9	Valid
SL_EC3	Integer selection	10	Valid
SL_EC4	No selection	empty	Invalid

Equivalent Classes:

Valid:

Test ID	Incident Type	Description	Severity Level	Expected Result
COMB_V1	IT_EC1	D_EC2	SL_EC2	Valid Entry
COMB_V2	IT_EC2	D_EC1	SL_EC1	Valid Entry
COMB_V3	IT_EC3	D_EC3	SL_EC3	Valid Entry
COMB_V4	IT_EC4	D_EC9	SL_EC2	Valid Entry
COMB_V5	IT_EC5	D_EC10	SL_EC2	Valid Entry

Invalid:

Test ID	Incident Type	Description	Severity Level	Expected Result	Invalid Field
COMB_I1	IT_EC6	D_EC2	SL_EC2	Invalid Entry	Incident Type

COMB_I2	IT_EC1	D_EC4	SL_EC2	Invalid Entry	Description
COMB_I3	IT_EC1	D_EC2	SL_EC4	Invalid Entry	Severity Level
COMB_I4	IT_EC8	D_EC2	SL_EC2	Invalid Entry	Incident Type
COMB_I5	IT_EC1	D_EC5	SL_EC2	Invalid Entry	Description
COMB_I6	IT_EC6	D_EC4	SL_EC2	Invalid Entry	Incident Type, Description
COMB_I7	IT_EC1	D_EC6	SL_EC4	Invalid Entry	Description, Severity Level
COMB_I8	IT_EC7	D_EC2	SL_EC4	Invalid Entry	Incident Type, Severity Level
COMB_I9	IT_EC8	D_EC8	SL_EC4	Invalid Entry	All Fields
COMB_I10	IT_EC9	D_EC7	SL_EC4	Invalid Entry	All Fields

Boundary Value Analysis:

Incident Type

- Minimum length: 5 character
- Test for length = 4,5,6
- Maximum length = 100 characters
- Test for length = 99, 100, 101 (upper boundary)

- Test cases = 6

Description

- Minimum length: 10 characters
- Maximum length: 1000 characters
- Test for length = 9,10,11 (lower boundary)
- Test for length = 999,1000,1001 (upper boundary)

- Test cases = 6

Severity Level

- Minimum value: 1
- Maximum value: 10
- Test for value = empty
- Test for value = 1-10 (within range of scroll bar)

- Test cases = 2

Calculation of Total Test Cases

- Incident Type: 6 cases
- Description: 6 cases (3 lower + 3 upper boundary)
- Severity Level: 2 cases (empty or filled)

Total Test Cases = 6 x 6 x 2 = 72

Test ID	Incident Type	Description	Severity Level	Expected Output	Displayed Output
TC_01	Fire	A valid description.	5	Valid Entry	Entry submitted successfully.
TC_02	Medical	Emergency case description.	3	Valid Entry	Entry submitted successfully.
TC_03	Natural Disaster	Natural calamity details.	10	Valid Entry	Entry submitted successfully.
TC_04	Security Threat	Security concern reported.	7	Valid Entry	Entry submitted successfully.
TC_05	Infrastructure Failure	Details about failure.	2	Valid Entry	Entry submitted successfully.
TC_06	Fire	A description with !@#$%.	6	Valid Entry	Entry submitted successfully.
TC_07	Medical	Length 10 description.	1	Valid Entry	Entry submitted successfully.
TC_08	Natural Disaster	Detailed description.	9	Valid Entry	Entry submitted successfully.
TC_09	Security Threat	Mixed alphanumeric text.	4	Valid Entry	Entry submitted successfully.
TC_10	Infrastructure Failure	All clear situation.	8	Valid Entry	Entry submitted successfully.
TC_11	"" (empty)	A valid description.	5	Invalid Entry	Invalid Incident Type.
TC_12	Fire	Short desc (<10 chars).	2	Invalid Entry	Invalid Description.
TC_13	Medical	A valid description.	(empty)	Invalid Entry	Invalid Severity Level.
TC_14	12345	A valid description.	6	Invalid Entry	Entry submitted successfully.(Failure)
TC_15	Fire	Very long description (>1000 chars).	3	Invalid Entry	Invalid Description.
TC_16	"" (empty)	Short desc (<10 chars).	2	Invalid Entry	Invalid Incident Type, Description.

TC_17	Fire	"" (empty description).	(empty)	Invalid Entry	Invalid Description, Severity Level.
TC_18	null	A valid description.	(empty)	Invalid Entry	Invalid Incident Type, Severity Level.
TC_19	12345	Whitespace only (" ").	3	Invalid Entry	Entry submitted successfully.(Failure)
TC_20	@#$%	null	7	Invalid Entry	Invalid only in description.
TC_21	Fire (length = 4 chars)	A valid description.	2	Invalid Entry	Invalid Incident Type.
TC_22	Fire1 (length = 5 chars)	A valid description.	3	Valid Entry	Entry submitted successfully.
TC_23	LongString (101 chars)	A valid description.	4	Invalid Entry	Invalid Incident Type.
TC_24	Fire	Short desc (9 chars).	5	Invalid Entry	Invalid Description.
TC_25	Fire	Desc with 10 chars.	6	Valid Entry	Entry submitted successfully.
TC_26	Fire	Very long description (1001 chars).	2	Invalid Entry	Invalid Description.
TC_27	Medical	A description with @#$%.	3	Valid Entry	Entry submitted successfully.
TC_28	Natural Disaster	Proper description text.	9	Valid Entry	Entry submitted successfully.
TC_29	Security Threat	Mixed alphanumeric text.	7	Valid Entry	Entry submitted successfully.
TC_30	Infrastructure Failure	Description of breakdown.	1	Valid Entry	Entry submitted successfully.
TC_31	"" (empty)	A proper description.	2	Invalid Entry	Invalid Incident Type.
TC_32	Fire	Very short desc (5 chars).	8	Invalid Entry	Invalid Description.
TC_33	Medical	A valid description.	(empty)	Invalid Entry	Invalid Severity Level.
TC_34	Security Threat	"" (empty description).	7	Invalid Entry	Invalid Description.
TC_35	Fire	Very long description (1000 chars).	3	Valid Entry	Entry submitted successfully.
TC_36	Natural Disaster	A normal description.	6	Valid Entry	Entry submitted successfully.
TC_37	Fire123	Mixed invalid type.	9	Invalid Entry	Invalid Incident Type.
TC_38	Medical	Whitespace only (" ").	4	Invalid Entry	Entry submitted successfully.(Failure)

TC_39	Fire	Valid desc with !@#$%.	5	Valid Entry	Entry submitted successfully.
TC_40	Infrastructure Failure	Valid mixed desc + chars.	10	Valid Entry	Entry submitted successfully.