

Black Box Testing

Black box testing is a software testing method that focuses on the functionality of a software application without requiring knowledge of its internal code or implementation. In this type of testing, the tester treats the software as a "black box," the testing process is based on inputs and expected outputs, with no consideration of the internal logic or structure of the application.

Black box testing primarily concerns validating that the software functions according to its specifications and meets the intended requirements. Testers design test cases based on the expected behavior of the software. They provide input to the software and check whether the output matches the expected result. Black box testing can be applied at various testing levels, including unit testing, integration testing, system testing, and acceptance testing.

Boundary Value Analysis: Testers pay special attention to testing at the boundaries of input ranges, as errors often occur at the edges of acceptable input values. This helps ensure that the software handles boundary conditions correctly.

Equivalence Partitioning: Testers often use equivalence partitioning to divide the input space into classes or partitions and select representative test cases from each partition.

For our websites, we have performed the following tests where user input was required and facilitated the equivalent class division.

Derived Equivalence Classes

1. Login page

Constraint: Password length should be ≥ 8 & ≤ 20 with a minimum of 1 unique character and minimum of 1 capital letter.

Email should have '@' included and at least 1 more character after it

Valid Passwords:

1. Passwords with a length of 8 or more characters.
2. Passwords that contain at least one unique character and at least one capital letter is included.

Invalid Passwords:

3. Passwords with a length of less than 8 characters.
4. Passwords that meet the length requirement but do not include at least one unique character or capital letter.
5. Passwords that contain only lowercase letters and numbers without any special characters.
6. Passwords with special characters and capital letters but a total length of fewer than 8 characters.

Additional: First and Last names can only take alphabet characters and age is only a number.

Special characters do not include # _

Testcase no.	Description	Data	Expected Output	Result
TC1	Valid password: meets all criteria	Abcxyz2@	Successful Password creation	Successful
TC2	Password length < 8 characters	abcxyz	Try again	Failed
TC3	Password length>20	qwertyuioplkjhgfdsa	Try again	Failed
TC4	Missing special character	692496Em	Try again	Failed
TC5	Missing capital letter	mxbagdfdyv@	Try again	Failed
TC6	Only lowercase letters and numbers	sgbdsmw6283	Try again	Failed
TC7	Special characters and capital letter but < 8 characters	%@abc@%	Try again	Failed
TC8	Valid password: special character and capital letter at beginning	@Abcdefg1	Successful Password creation	Successful
TC9	Valid password: special character and capital letter at end	Abcdefg1@	Successful Password creation	Successful
TC10	Valid password: special character and capital letter in the middle	Abcd@efg1	Successful Password creation	Successful
TC11	Email without @	raj_kumargmail.com	Invalid email('@' not found)	Failed

Testcase no.	Description	Data	Expected Output	Result
TC1	Valid password: meets all criteria	Abcxyz2@	Successful Password creation	Successful
TC2	Password length < 8 characters	abcxyz	Try again	Failed
TC3	Password length>20	qwertyuioplkjhgfdsa	Try again	Failed
TC12	Email with no character after @	raj_kumar@	Invalid email	Failed

2. Inventory Page

1. Inventory size should be greater than 0 and less than 200.
2. Inventory size is numeric data.
3. New inventory item name should not match previous items

Testcase no.	Description	Data	Expected Output	Result
TC1	Inventory size is zero	0	Invalid data	Invalid data
TC2	Inventory size input is not a whole number	7.69	Invalid data	Invalid data
TC3	0<Inventory size<200	48	saved	saved
TC4	Inventory size>200	435	Invalid data	Invalid data

TC5	Inventory size is blank		Please enter size	Please enter size
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3. Profile editing

1. Name should have at least one character
2. Name field cannot carry numbers or special characters
3. Only age>18 is permitted.

Testcase no.	Description	Data	Expected Output	Result
TC1	Name field is blank		Enter valid data	Enter valid data
TC2	Name field has numeric value	s8software	Enter valid data	Enter valid data
TC3	Name field has special characters	@software	Enter valid data	Enter valid data
TC4	Age field is given non integer value	s18	Enter valid data	Enter valid data
TC5	Age <18	10	Ineligible	Ineligible
TC6	Age >18	29	Saved	Saved

4. Date selection

1. Check in date cannot be left unselected.
2. Checkout date also can't be unchecked.
3. Checkout date has to be after the check-in date.
4. No. of rooms field has to be selected.

Testcase no.	Description	Data	Expected Output	Result
TC1	Check in date is empty			
TC2	Checkout date is empty			
TC3	Check in date is after		Only dates after	Failed

	Checkout		Check in date are available for Checkout	
TC4	Rooms not selected		Unable to book	Failed

5. Payment portal

1. Card no. should be exactly **16** digits long
2. Expiry date cannot be empty and should be in **MM/YY** format
3. Cardholder name accepts alphabetic values between **5-30** characters
4. CVV is precisely **3** digits.

Testcase no.	Description	Data	Expected Output	Result
TC1	Card no. is empty		Please fill out this field	Failed
TC2	Card no. < 16 digits	12345	Invalid card number. Please enter a 16-digit number..	Failed
TC3	Card no. = 16	1234567890123456	accepted	Successful

TC4	Card no. >16	12345678901234567	Invalid card number. Please enter a 16-digit number..	Failed
TC5	Expiry Date not in MM/YY format	5-5, 5/5	Invalid expiry date. Please enter a valid date in MM/YY format.	Failed
TC6	Expiry Date in MM/YY format	05/05	accepted	Successful
TC7	Cardholder name is not alphabetic only	abc123	Invalid cardholder name. Please enter alphabetic name between 5-30 characters.	Failed
TC8	Cardholder name length < 5	qwer	Invalid cardholder name. Please enter alphabetic name between 5-30 characters.	Failed
TC9	4<Cardholder name length <31	qwertyu	accepted	Successful
TC10	Cardholder name length > 31	qwertyuioplkjhgfdsazxcvbnm mnbvcxz	Invalid cardholder name. Please enter alphabetic name between 5-30 characters.	Failed
TC11	CVV is not a numeric field	12l	Does not allow such data	
TC12	CVV length is <3	78	Invalid CVV. Please enter a 3-digit number.	Failed
TC13	CVV length is 3	789	accepted	Successful
TC14	CVV length is >3	78910	Invalid CVV. Please enter a 3-digit number.	Failed

