

# Parameters & Values



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## Overview

Parameters are the factors to be tested in Test Case Designer scenarios. For example, "Browser Type", "Payment Method", "Age", etc.

When creating your Test Model, you need to define which parameters should be consider and their values.

Parameter values are the different ways that a parameter can vary - these are the values that are chosen in a given test case for a given parameter. For example, examples of parameter values might be "Browser Type" of "Google Chrome"; "IE"; "Safari".

Deciding what to include as parameters and values in your Test Model will be the most important part of the entire test design process.

## Create a Parameter

1

Select "Parameters" on your test model

A screenshot of the XRAY TEST CASE DESIGNER interface. The top bar shows the XRAY logo and the title "A) Airplane Ticket Reservation". The left sidebar has a "Parameters" section highlighted with a blue bar and a red arrow pointing to it. Below "Parameters" are sections for RULES, SCENARIOS, SCRIPTS, ANALYSIS, and REVIEW. The main area displays a table of parameters for an airplane ticket reservation. The table has columns for parameter names and their values. At the bottom of the table is a "New Parameter" button.

Flying From (3)	India	the Philippines	the United States
Flying to (3)	the United States	the Philippines	India
Class (3)	Coach	Business	First
Adults (2)	1	More than 1	
Children (3)	0	1	More than 1

[New Parameter](#)

2

Click the option "New Parameter"

**XRAY** TEST CASE DESIGNER A) Airplane Ticket Reservation

Parameters

- > RULES
- > SCENARIOS
- > SCRIPTS
- > ANALYSIS
- > REVIEW
  - Share
  - Export
  - Synchronization

Flying From (3)	India	the Philippines	the United Sta
Flying to (3)	the United States	the Philippines	India
Class (3)	Coach	Business	First
Adults (2)	1	More than 1	
Children (3)	0	1	More than 1
<a href="#">+ New Parameter</a>			

3

Type in the name of the parameter and fill in the parameter values you want, one per line.

## New Parameter



### Parameter Name



### Parameter Values

Type one or more Parameter Values, one on each line. For example:

OSX  
Windows  
Linux

[Cancel](#)[Create](#)



### Description vs Numbers

In some situations, descriptive fields are not the best and more practical way to use parameters in your model.

In the example, you can see the parameter "Age" with a descriptive value.

Auto-insurance Rating Engine ▾



Gender (3)	Male	Female	Other	
Age (4)	Young	Middle-Aged	Early Retirement	Late Retirement
Marital Status (2)	Single	Married		
Employment Status (3)	Employed	Unemployed	Student	
Accidents Last 5 Years (3)	0	1	more than 1	
Vehicle Year (4)	earlier than 1990	1991 - 2000	2001 - 2010	2011 - 2019

Instead of descriptions, maybe you could use the numbers for the ones you want tested. In the example, you can see the same parameter "Age" but now with numerical value.

Age (4)	18	35	56	70
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## Create a Parameter with a Ranged Value - Boundary Testing

Instead of using descriptive or numerical values, you may use range values.

Range values are useful when there is required to test around cutoffs for certain businesses rules, that adds too many values to your parameters and it's not efficient.

To create a range value, use the syntax 'number space hyphen space number' (i.e., # - #), Xray Test Case Designer will recognize it as a range of values to choose from.

Bellow, check the example with the Parameter "Age":

### Edit Parameter



Parameter Name

Age



Parameter Values

18-25  
26-54  
55-64  
65-90

Cancel

Delete

Update

Age (4)	18 - 25	26 - 54	55 - 64	65 - 90
---------	---------	---------	---------	---------

Additionally, will handle a ranged value as a set of numbers inclusive of your endpoints. Therefore, Xray Test Case Designer will in effect boundary test the range and then randomly choose numbers from within that range (as it needs for tests).


See below how the ranged values above turn into values to use in your tests.



Search...












23 scenarios and 456 2-way interactions

#	Gender	Age	Marital Status	Employment Status	Accidents Last 5
1	Male	25	Single	Employed	0
2	Female	20	Married	Unemployed	0
3	Other	26	Single	Unemployed	1
4	Male	56	Married	Student	more than 1
5	Female	73	Married	Employed	1
6	Female	54	Single	Student	more than 1
7	Other	55	Married	Employed	0
8	Male	65	Single	Unemployed	1
9	Other	64	Married	Student	1
10	Male	18	Single	Employed	more than 1
11	Female	25	Married	Student	more than 1
12	Male	90	Single	Employed	0
13	Female	39	Married	Unemployed	1

Xray Test Case Designer can recognize many options for ranges. We recommend having the same number of decimals across all numbers in a range. Additionally, all ranged values **must not overlap**. The tool will not recognize logic like in alphanumeric codes either.

 See below for an example of ranges as inputs followed by the outputs provided.

Ascending Integers (2)	0 - 5	6 - 10	
 Descending Integers (2) 	10 - 6	5 - 1	
Decimals (2)	0.00 - 5.00	5.01 - 10.00	
Messy Decimals (2)	0 - 5.00	5.1 - 10.000	
Missing Spaces (2)	0-5	6-10	
Range with Non-Range (3)	0 - 5	6 - 10	N/
Fractions (2)	1/8 - 4/8	5/8 - 8/8	
Small Overlap (2)	0-5	5-10	
Big Overlap (2)	0 - 7	5 - 10	
Alphanumeric (2)	ABC123 - DEF234	GHI345 - JKL456	
Inequality syntax (2)	> 1 &lt;=5	>6	

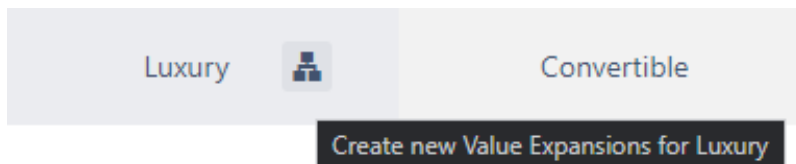
#	 Ascending Integers	 Descending Integers	 Decimals	 Messy Decimals	 Missing Spaces	 Range with Non-Range	 Fractions	 Small Overlap	 Big Overlap	 Alphanumeric	 Inequality synt
1	5	8	5.00	5.00	5	5	1/8 - 4/8	0-5	0 - 7	ABC123 - DEF234	> 1 &lt;=5
2	10	5	10.00	10.000	10	6	5/8 - 8/8	5-10	5 - 10	GHI345 - JKL456	> 1 &lt;=5
3	6	10	6.30	4	6	0	1/8 - 4/8	5-10	0 - 7	GHI345 - JKL456	>6
4	0	1	3.95	7.082	0	N/A	5/8 - 8/8	0-5	5 - 10	ABC123 - DEF234	> 1 &lt;=5
5	0	4	5.01	0	0	10	5/8 - 8/8	0-5	0 - 7	ABC123 - DEF234	>6
6	6	6	0.00	5.1	6	N/A	1/8 - 4/8	0-5	0 - 7	GHI345 - JKL456	>6
7	10	5	5.00	5.00	5	0	1/8 - 4/8	5-10	5 - 10	ABC123 - DEF234	>6
8	5	7	10.00	4	0	N/A	5/8 - 8/8	5-10	5 - 10	GHI345 - JKL456	> 1 &lt;=5
9	1	1	0.78	10.000	10	5	5/8 - 8/8	5-10	0 - 7	ABC123 - DEF234	>6
10	0	10	0.00	0	0	6	1/8 - 4/8	0-5	0 - 7	ABC123 - DEF234	>6

## Create a New Value Expansion

If your model includes a long list of values, you are in danger of generating way more tests than needed. The Value Expansions feature can dramatically reduce the number of tests generated in these situations. By maximizing variation and minimizing repetition, the Value Expansions feature helps testers cover as much as possible in as few test cases as possible.

1

On the "Parameters" screen, edit a Parameter Value to instead appear as a general category. Hover over this Value and click on the branching icon to the Value's right.



2

Edit the Expansions and click on "Create" to save them.

### Create a New Value Expansion



Parameter Value: **Luxury**

Expanded Values

☐ Bias initial value(s) ☒ Use evenly

Porche 911 Turbo  
Ferrari  
McLaren  
Bentley  
Cadillac STS

Cancel

Create



- If you would like each of these 5 "sub-values" to appear in your test scripts with equal weighting (e.g., have 'Porche' appear in approximately as many test cases as 'Ferrari'), the **"Use evenly"** option is already set by default.
- If you would rather have the sub-values that you put towards the top of your list appear more frequently, select **"Bias initial values"** option.

Using the Value Expansions feature has powerful advantages over the other options. Compared to using 45 individual Values, this approach has 144 fewer tests to execute. And compared to using just the 9 categories of vehicles as your Values, the test cases generated with the Value Expansions feature are:

- more specific,
- more varied, and
- achieve more coverage.



#### A Caveat on Value Expansions

Expansions are a great way to get additional variation in your tests without sacrificing the number of tests. But not all value expansions are guaranteed to be included in your tests.

For example, consider 10 value expansions for 1 value in a model that generates a set of 20 tests. The value in question may only show up a few times of that 20, maybe 5 times. Therefore, only half of the value expansions will be covered.

## View Parameter

### Standard View

Standard is the default view where user has visual access to all the available parameters and all the main actions to them.

The screenshot shows the 'Standard View' of the XRAY Test Case Designer. The left sidebar contains a navigation menu with 'Parameters' selected, and other options like 'RULES', 'SCENARIOS', 'SCRIPTS', 'ANALYSIS', 'REVIEW', 'Share', 'Export', and 'Synchronization'. The main area displays a table of parameters for 'A) Airplane Ticket Reservation'. A red arrow points to the 'Parameters' icon in the top toolbar.

Parameter	Value 1	Value 2	Value 3
Flying From (3)	India	the Philippines	the United States
Flying to (3)	the United States	the Philippines	India
Class (3)	Coach	Business	First
Adults (2)	1	More than 1	
Children (3)	0	1	More than 1

Below the table is a 'New Parameter' button.

### Bulk view

Bulk view enables you to edit you parameters faster and displays parameters and values in a "code style" format. Learn more [how to bulk edit parameters](#).

The screenshot shows the 'Bulk View' of the XRAY Test Case Designer. The top bar shows 'A) Airplane Ticket Reservation' with a notification icon. Below the toolbar, there is a 'Save (Cmd+S)' button. The main area displays a list of parameters and their values in a code-style format.

```
1 Flying From [ India , the Philippines , the United States ]
2 Flying to [ the United States , the Philippines , India ]
3 Class [ Coach , Business , First ]
4 Frequent Flier Status [ Gold , Silver , Not applicable ]
5 Seat Preference [ None , Selected ]
6 Adults [ 1 , More than 1 ]
7 Children [ 0 , 1 , More than 1 ]
```

### Edit a Parameter & Values

1 Hover the parameter you want to edit.

XRAY

TEST CASE DESIGNER

A) Airplane Ticket Reservation

Parameters

> RULES

> SCENARIOS

> SCRIPTS

> ANALYSIS

> REVIEW

Share

Export

Synchronization

Flying From (3)

India

the Philippines

the United Sta

Flying to (3)

the United States

the Philippines

India

Class (3)

Coach

Business

First

Adults (2)

1

More than 1

Children (3)

0

1

More than 1

New Parameter

2

Click on the parameter name to show the edit dialogue.

Edit Parameter

Parameter Name

Adults

Parameter Values


1  
More than 1

Cancel

Delete

Update



 You can also click directly on the desired parameter value to bring up the edit dialogue for that specific value.

## Edit Parameter Value 1

Parameter value

Cancel

Update

## Bulk Edit Parameters

Parameters bulk edit enable a faster way to make changes to several parameters' values quicker and in a more efficient way.

1

Click on the "Bulk Edit" toggle and edit your parameters & values

A) Airplane Ticket Reservation 



Flying From (3)	India	the Philippines	the United States
Flying to (3)	the United States	the Philippines	India
Class (3)	Coach	Business	First
Adults (2)	1	More than 1	
Children (3)	0	1	More than 1

2

This will toggle the input window into a quick-to-edit single text window.



Save (Cmd+S)

```
1 Flying From [ India , the Philippines , the United States ]
2 Flying to [ the United States , the Philippines , India ]
3 Class [ Coach , Business , First ]
4 Frequent Flier Status [ Gold , Silver , Not applicable ]
5 Seat Preference [ None , Selected ]
6 Adults [ 1 , More than 1 ]
7 Children [ 0 , 1 , More than 1 ]
```

Now you have the ability to change any parameters or value as needed and change the priorities in a more efficient way



Changing the name of a parameter or value in Bulk Edit mode would cause Xray Test Case Designer to recognize the edited parameter or value as a completely new entry – triggering a message warning you about the potential loss of constraints/requirements/value expansions.

Typing in new parameter names through Bulk Edit won't give you access to the auto-suggested list of already-created reusable parameters that you see when adding parameters through the standard Edit mode. You also can't create value expansions from the Bulk Edit window.

## Delete a Parameter

1

Hover the parameter you want to delete.

XRAY

TEST CASE DESIGNER

A) Airplane Ticket Reservation

Parameters

> RULES

> SCENARIOS

> SCRIPTS

> ANALYSIS

> REVIEW

Share

Export

Synchronization

Flying From (3)	India	the Philippines	the United Sta
Flying to (3)	the United States	the Philippines	India
Class (3)	Coach	Business	First
Adults (2)	1	More than 1	
Children (3)	0	1	More than 1
New Parameter			

2

Click on the parameter name you what to delete.

## Edit Parameter



### Parameter Name

Adults



### Parameter Values

1  
More than 1

Cancel

Delete

Update

3

Click the delete option

Edit Parameter

Parameter Name

Adults

Parameter Values

1  
More than 1

Cancel

Delete

Update

Reorder a Parameter

1

Hover the parameter you want to re-order.

XRAY

TEST CASE DESIGNER

A) Airplane Ticket Reservation

Parameters

RULES

SCENARIOS

SCRIPTS

ANALYSIS

REVIEW

Share

Export

Synchronization

Flying From (3)

India

the Philippines

the United Sta

Flying to (3)

the United States

the Philippines

India

Class (3)

Coach

Business

First

Adults (2)

1

More than 1

Children (3)

0

1

More than 1

New Parameter

$$\cup$$

Two options are displayed, one to move up another to move down the selected parameter.

## A) Airplane Ticket Reservation

Parameters

> RULES

> SCENARIOS

> SCRIPTS

> ANALYSIS

> REVIEW

Share

Export

Synchronization

Flying From (3)

India

the Philippines

the United States

Flying to (3)

the United States

the Philippines

India

Class (3)

Coach

Business

First

↑

Adults (2)

+

1

More than 1


Children (3)

0

1

More than 1

+ New Parameter

 You can also use the bulk option to re-order your parameters