Parameters & Values

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Introduction

Parameters are the factors being tested in Test Case Designer Scenarios, such as **Browser Type**, **Payment Method**, or **Age**.

When creating your Test Model, you must define which Parameters to include and what their values are.

Parameter values represent the different ways a parameter can vary. These are the specific values selected for a given parameter in a Test case. For example, parameter values for **Browser Type** might include **Google Chrome**, **IE**, or **Safari**.

Deciding what to include as parameters and values is crucial, as it directly impacts Test Interaction Coverage and efficiency. Missing key parameters can result in Testing gaps, while including unnecessary ones can lead to redundant Tests, wasting time and resources.

Operations

Creating a Parameter

1
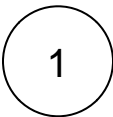
Go to *My Test Models* (Figure 1 - 1) and enter a Test Model (Figure 1 - 2).
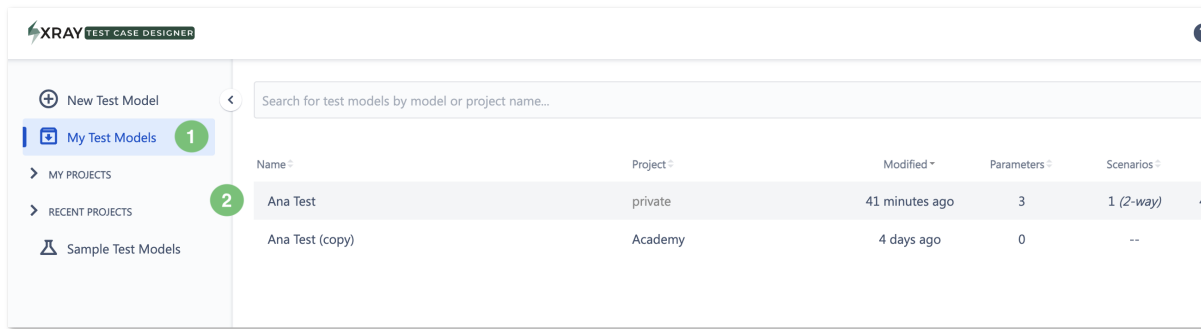

Figure 1 - Test model

2

You will enter the Parameters screen (Figure 2).

Hover over an existing parameter (Figure 2 - 1) and click + (Figure 2 - 3), or click the *New Parameter* button (Figure 2 - 2).
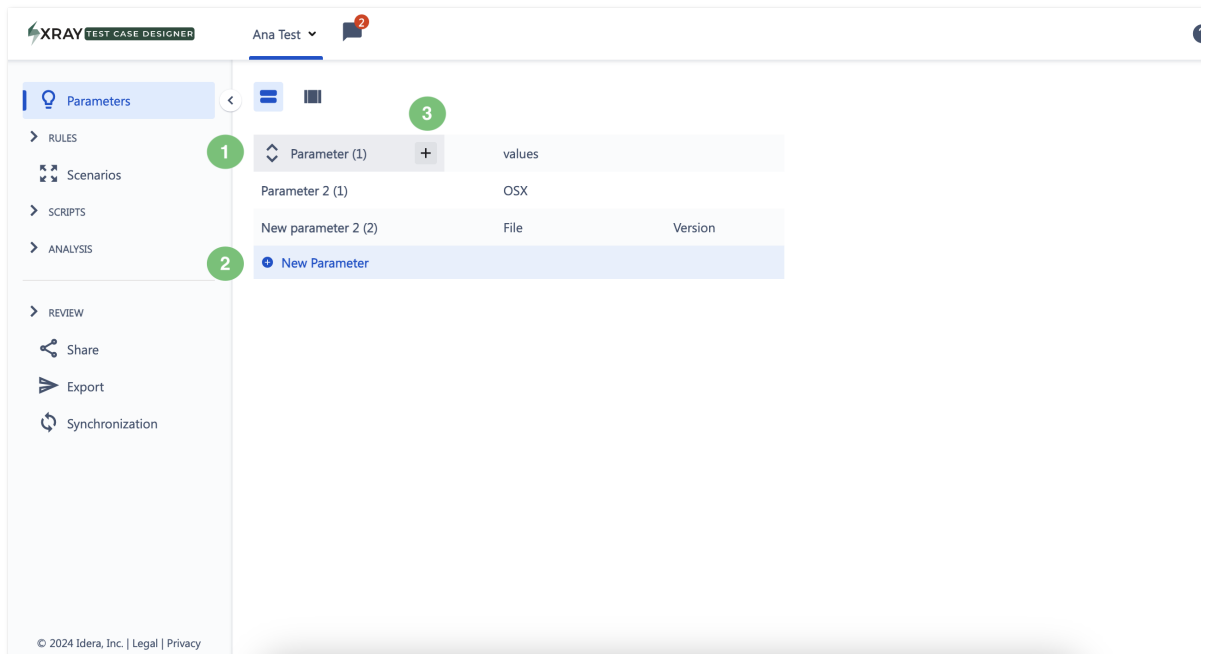
Figure 2 - New parameter

3

The New Parameter modal (Figure 3) will open.

Fill in the fields:

- Parameter Name (Figure 3 - 1).
- Parameter Values (Figure 3 - 2): add one per line.

Once you're finished, click the *Create* button (Figure 3 - 3). The new parameter will be generated immediately and will be listed in the Parameters screen (Figure 2).
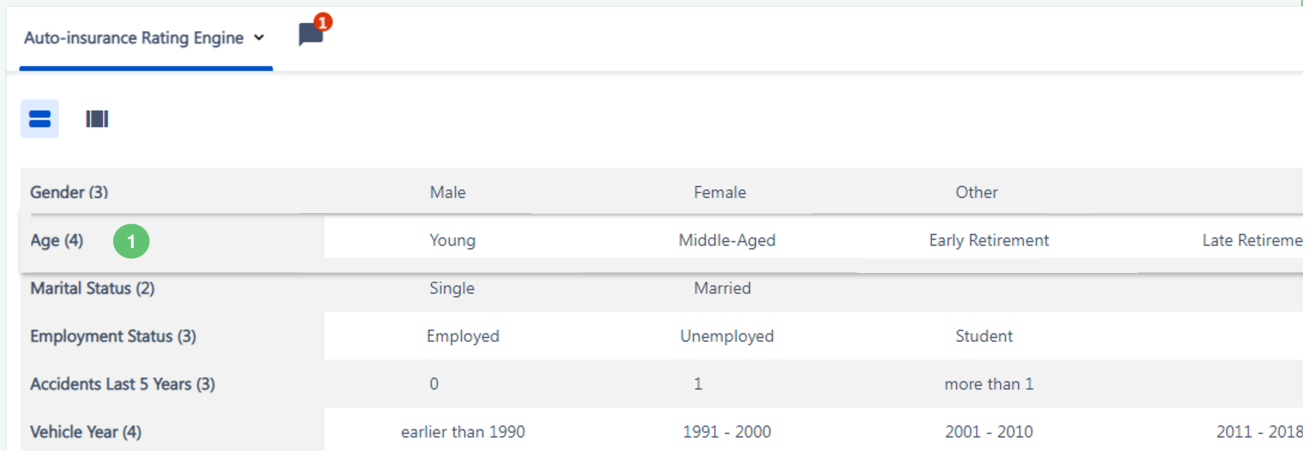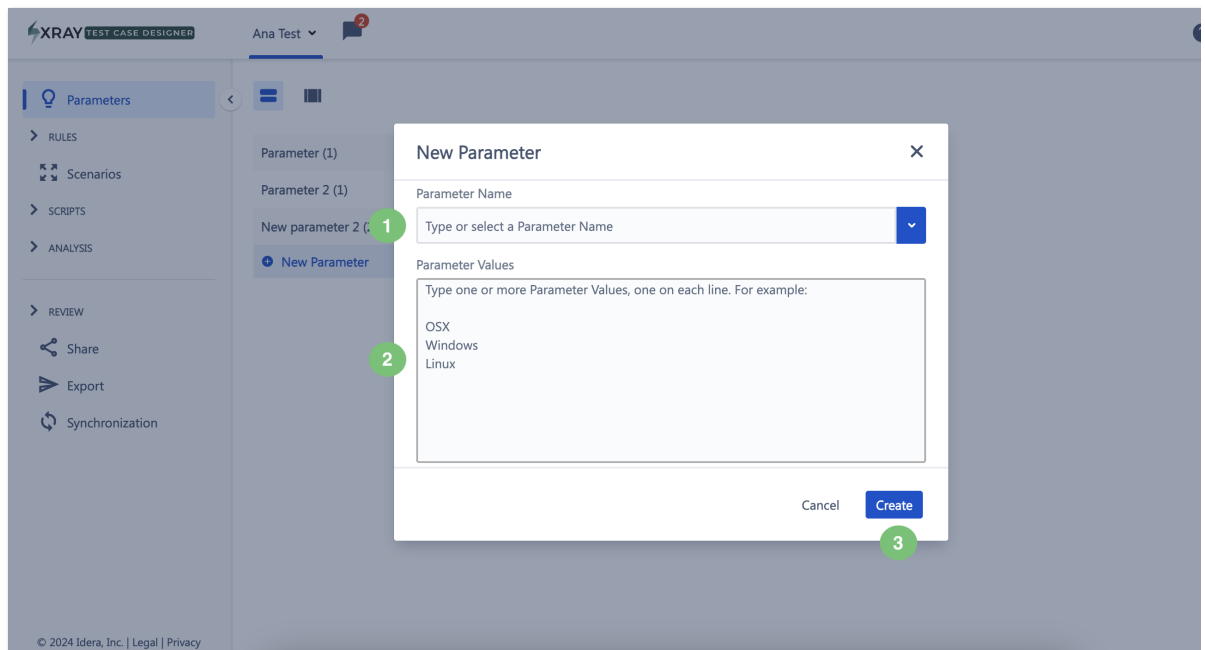

Figure 3 - Modal

Description vs Numbers

In some situations, descriptive fields are not the best/most practical way to use parameters in your Test Model.

In the example (Figure 4), you can see the parameter *Age* with a descriptive value (Figure 4 - 1).

Auto-insurance Rating Engine ⌄				
Gender (3)	Male	Female	Other	
Age (4) ①	Young	Middle-Aged	Early Retirement	Late Retireme
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 - 2018

Figure 4 - Values

Instead of descriptions, maybe you could use the numbers for the ones you want tested. In the example (Figure 5), you can see the same parameter *Age* but now with a numerical value (Figure 5 - 1).

Age (4)	18	35	56	70

Figure 5 - Values

Creating a Parameter with a Ranged Value - Boundary Testing

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

Range values are helpful when testing around specific cutoffs for business rules, where adding too many individual values to your parameters would be inefficient.

To create a range value, use the format `number space hyphen space number` (i.e., # - #). Xray Test Case Designer will recognize this as a range of values from which to select.

See the example with the Parameter *Age* in Figures 6 and 7.

Figure 6 - Parameter

Figure 7 - Parameter

Additionally, a range value is treated as a set of numbers that includes the endpoints. Xray Test Case Designer will prioritize the boundaries of the range but will also randomly select numbers from within it as needed for the Tests.

See below (Figure 8) how the range values are converted into values for 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

Figure 8 - Values

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** (you can have gaps though, e.g. 1 - 10, 15 - 21). The tool will not recognize logic like in alphanumeric codes either.

See below (Figures 9 and 10) examples 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/A
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 & <=5	>6	

Figure 9 - Values

#	Ascending Integers	Descending Integers	Decimals	Messy Decimals	Missing Spaces	Range with Non-Range	Fractions	Small Overlap	Big Overlap	Alphanumeric	Inequality syntax
	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗
1	5	8	5.00	5.00	5	5	1/8 - 4/8	0-5	0 - 7	ABC123 - DEF234	> 1 & <=5
2	10	5	10.00	10.000	10	6	5/8 - 8/8	5-10	5 - 10	GHI345 - JKL456	> 1 & <=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 & <=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 & <=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

Figure 10 - Values

Creating a New Value Expansion

If your model includes a long list of values, you risk generating more Tests than necessary. The **Value Expansions** feature can significantly reduce the number of Tests by maximizing variation without impacting the test suite size. For example, using this approach instead of 45 individual values results in 144 fewer Tests. It is the primary way of implementing equivalence classes for non-numeric parameters in Test Case Designer.

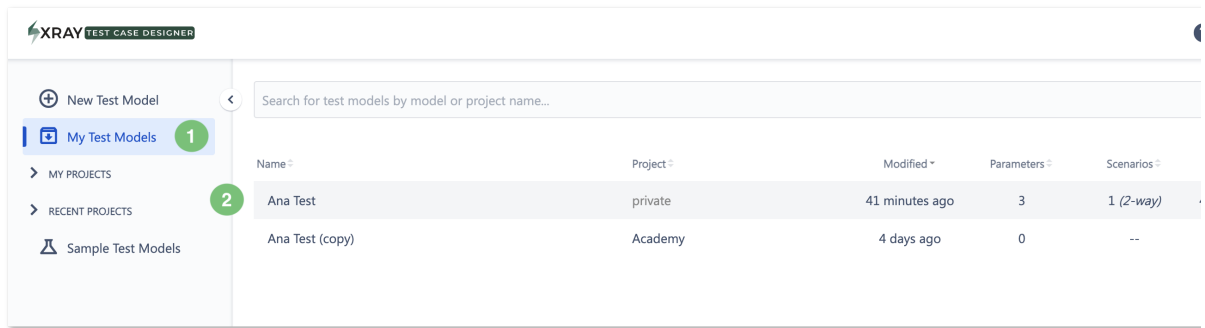1   Go to *My Test Models* (Figure 1 - 1) and enter a Test Model (Figure 1 - 2).

Figure 11 - Test Model

2

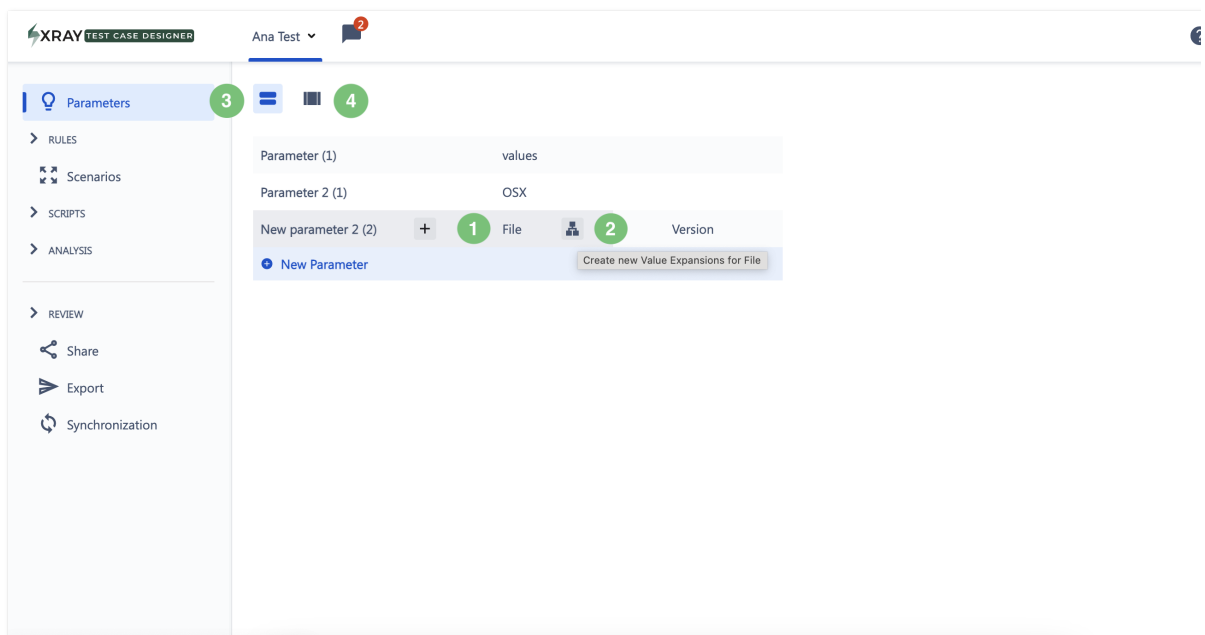You will enter the Parameters screen (Figure 12).

Figure 12 - Value

Hover over a value (Figure 12 - 1) and click the branching icon (Figure 12 - 2). A modal will open (Figure 13).

3

Edit/add the Expanded Values (Figure 13 - 1) and select one of the options (Figure 13 - 2; 3).
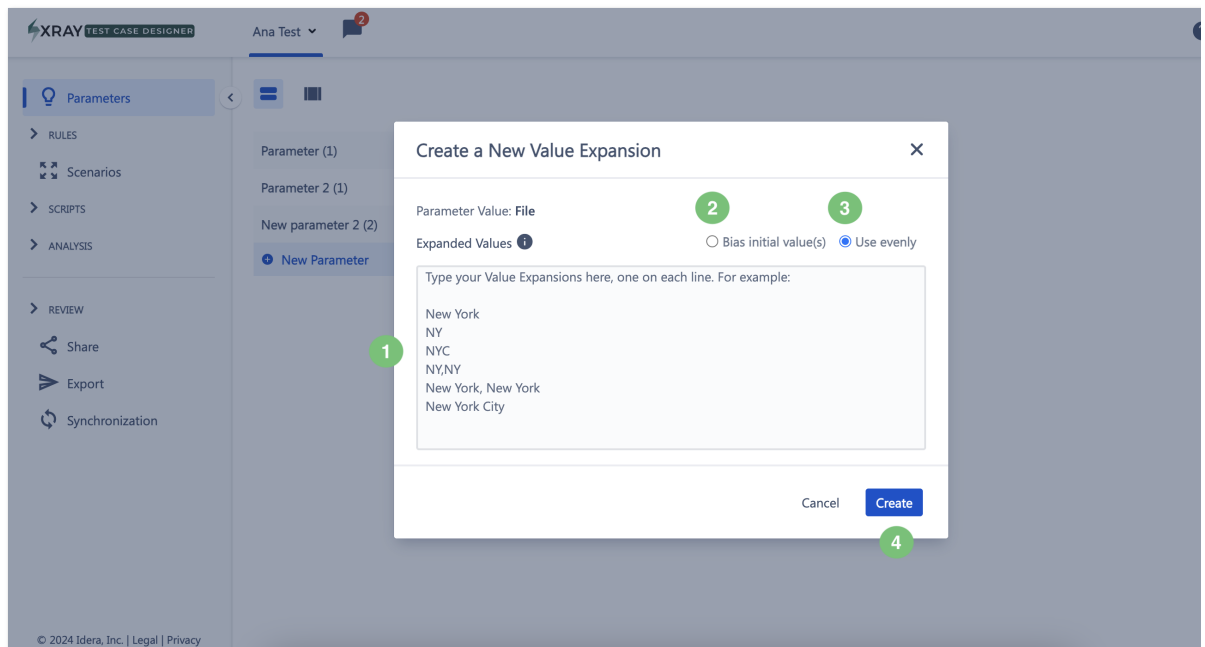
Once you're finished, click *Create* (Figure 13 - 4).

Figure 13 - Modal

ⓘ
- If you would like each of these five sub-values to appear in your Test Scripts with equal weighting (e.g., having *Porsche* appearing in approximately as many Test cases as *Ferrari*), the *Use evenly* option (Figure 13 - 3) 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 the *Bias initial value(s)* option (Figure 13 - 2).

⚠ **A Caveat on Value Expansions**

Expansions are an excellent way to introduce more variation in your Tests without increasing the number of Tests. However, it's important to note that not all value expansions are **guaranteed** to be included.

For example, if you have 10 value expansions for a parameter in a Test Model that generates 20 Tests, that parameter may only appear in a few of those Tests - perhaps five. As a result, only half of the value expansions will be covered.

Viewing Parameters

Standard View

Standard is the default view (Figure 12 - 3), where you have visual access to all the available parameters and all the main actions you can perform on them.

Bulk View

Bulk view (Figure 14) enables (Figure 12 - 4 to access it) you to view and edit your Parameters faster and displays parameters and values in a plain text style (Figure 14).

Figure 14 - Bulk view

> ⓘ Changing the name of a parameter or value in **Bulk Edit** mode causes Xray Test Case Designer to treat the edited parameter or value as a new entry. This triggers a warning message about the potential loss of associated constraints, requirements, or value expansions.
>
> Typing new parameter names in **Bulk Edit** does not provide access to the auto-suggested list of existing reusable parameters, which is available when adding parameters in standard **Edit** mode. Additionally, you cannot create value expansions from the **Bulk Edit** screen (Figure 14).

Editing/Deleting a Single Parameter & Value

1

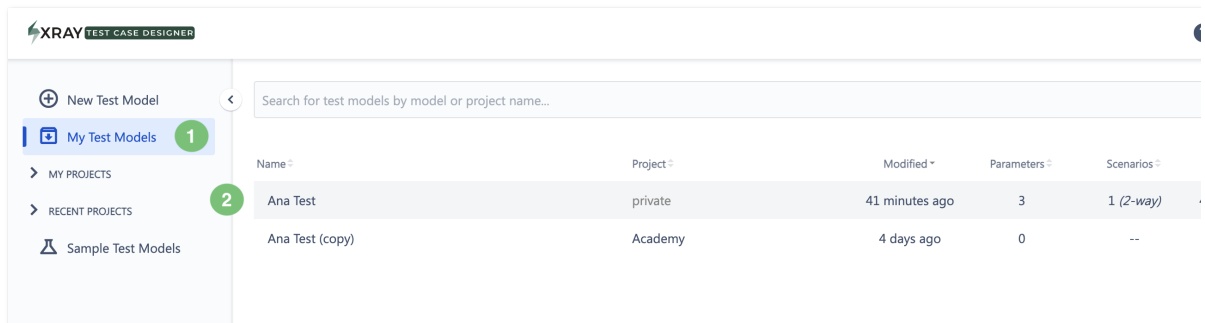Go to *My Test Models* (Figure 15 - 1) and enter a Test Model (Figure 15 - 2).

Figure 15 - Test model

2

You will enter the Parameters screen (Figure 16).

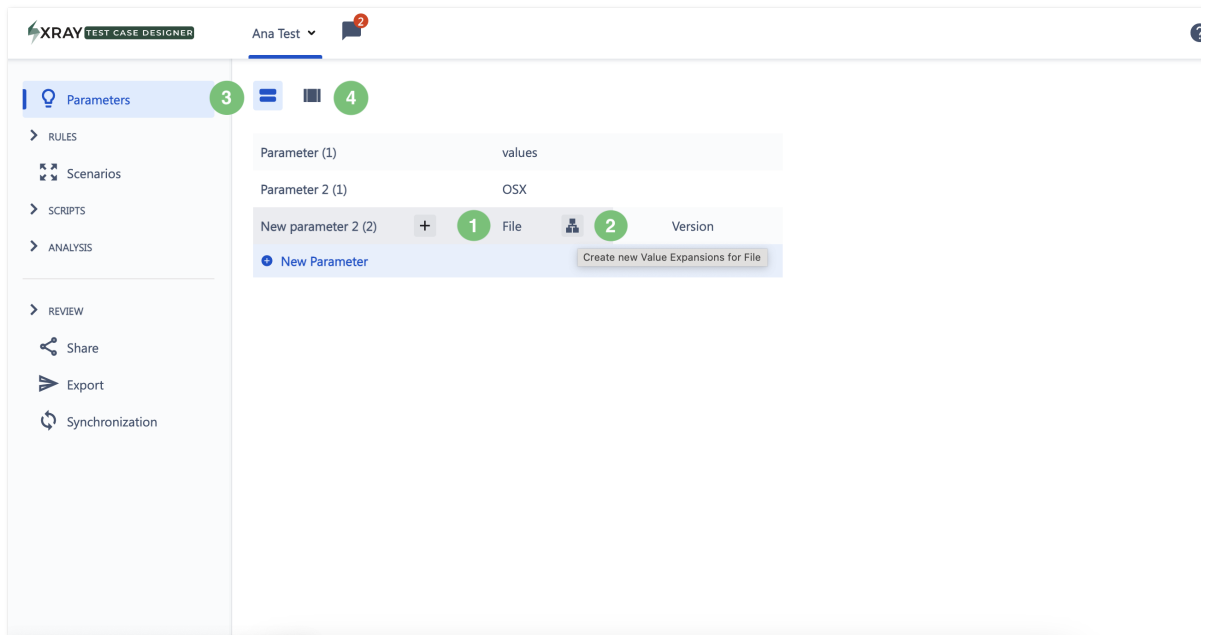Hover over the parameter you want to edit (Figure 16 - 1).

Figure 16 - Value

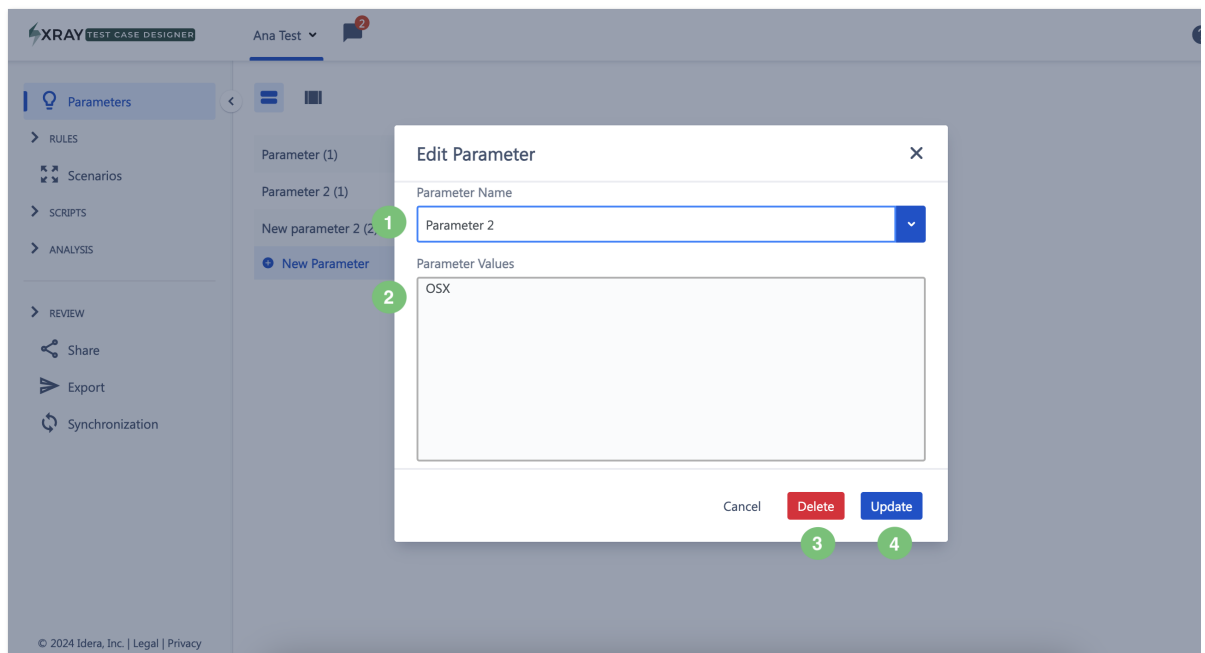**3** The Edit Parameter modal (Figure 17) will open.

Figure 17 - Edit

Here, you can edit the:

- Parameter Name (Figure 17 - 1).
- Parameter Values (Figure 17 - 2): add one per line.

Once you're finished, click the *Update* button (Figure 17 - 4). The parameter will be updated immediately.

> ⓘ Click the *Delete* button (Figure 17 - 3) if you wish to remove the parameter.

Reordering a Parameter

1

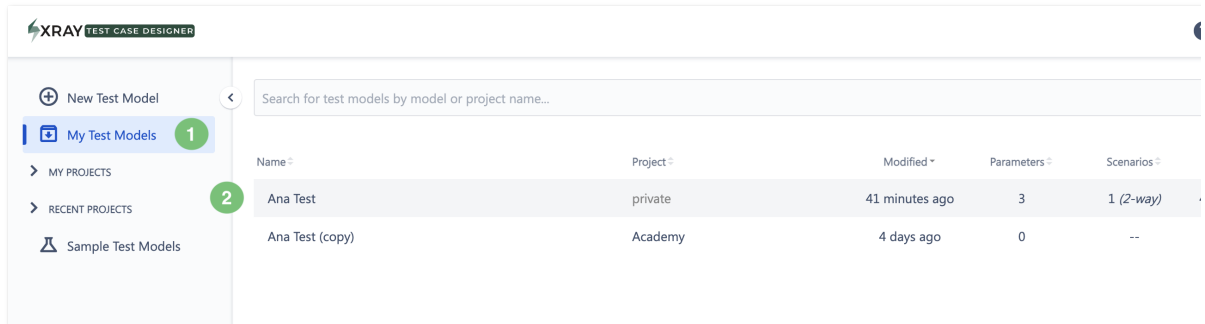Go to *My Test Models* (Figure 18 - 1) and enter a Test Model (Figure 18 - 2).

Figure 18 - Test Model

2

You will enter the Parameters screen (Figure 19).

Hover over the Parameter you want to reorder (Figure 19 - 1). Two arrows are displayed, one to move up, and another to move down the selected Parameter.
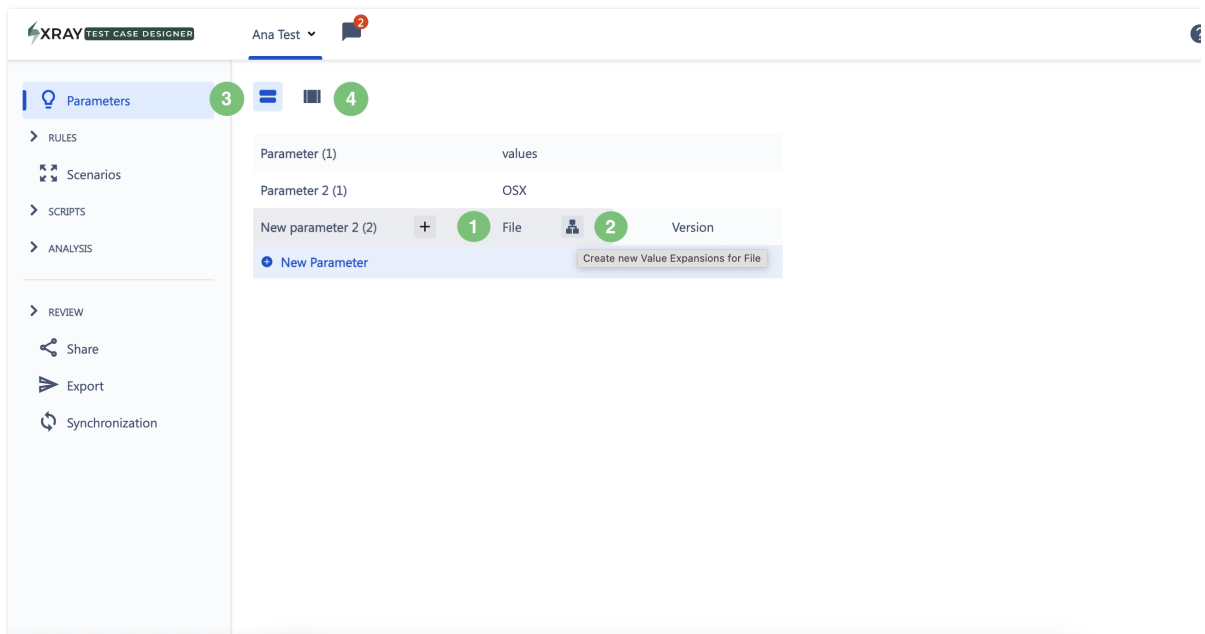

Figure 19 - Value

> ⓘ You can also use the Bulk option (Figure 19 - 4) to reorder your Parameters.

If you have questions or technical issues, please contact the Support team via the Customer Portal (Jira service management) or send us a message using the in-app chat.