Forced Interactions



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Introduction

This section explains how to use the Forced Interactions feature of Xray Test Case Designer.

Forced Interactions are a method to train the model about specific business rules that must always be considered on the generated Tests, as long as the required values and outcomes. With Forced Interactions, the system will always make sure these interactions are added to your model output.

Forced Interactions enhance the precision, coverage, and control over Test Scenarios, making the testing process more robust and efficient.

Operations

When to Use Forced Interactions

If you need Xray Test Case Designer Tests to include a particular Test for a required business rule, for example:

Requirement: (#2947 – Notify about Certain High Risk Flood Zone Applications)

The business rule that you want to test reads, "if a regular applicant applies for a large loan in a flood zone with 90% LTV, send the notification to the manager."

In our example, you must have these specific four values included together in a single Test:

- The customer status must be Regular.
- Loan to value ratio must be 90%.
- Loan amount must be Large.
- The property needs to be In a Flood Zone.

Go to the Forced Interactions screen under Rules (Figure 3) and add your Scenario.

Using Forced Interactions

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

| XRAY TEST CASE DESIGNER | | | | | (|
|-------------------------|---|-----------|----------------|--------------|-------------|
| New Test Model | Search for test models by model or project name | | | | |
| My Test Models | | | | | |
| > MY PROJECTS | Name 🕆 | Project 0 | Modified * | Parameters 🕆 | Scenarios 🗢 |
| > RECENT PROJECTS | Ana Test | private | 41 minutes ago | 3 | 1 (2-way) |
| X Sample Test Models | Ana Test (copy) | Academy | 4 days ago | 0 | |
| | | | | | |
| | | | | | |

Figure 1 - Test model

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You will enter the Parameters screen (Figure 2).

| XRAY TEST CASE DESIGNER | Ana Test 👻 📫 📫 | | | | |
|--------------------------------------|---------------------|---|--------|-------|----|
| Q Parameters | • = • | 3 | | | |
| > RULES | Parameter (1) | + | values | | |
| Scenarios 4 | Parameter 2 (1) | | OSX | | |
| > SCRIPTS | New parameter 2 (2) | | File | Versi | on |
| > ANALYSIS | New Parameter | | | | |
| > REVIEW | | | | | |
| < Share | | | | | |
| > Export | | | | | |
| Synchronization | | | | | |
| | | | | | |
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| , | 3 | |
| 1 | | |

Click Rules (Figure 3 - 8) and then Forced Interactions (Figure 3 - 1).

| ♀ Parameters ▼ RULES ₩ Constraints 3 (\$\$\mathcal{K}\$) • Forced Interactions | < | | Name Requirement: (#2947 – Reject Certain High Risk Flood Zone Applications) | Description If a regular applicant applies for a large loan in a flood zone with 90% LTV, send the notification to the manager. | Forced Parameter Values Customer status = Regular LTV = 90% Loan amount = Large Property location = In a Flood Zone | Expected Out |
|--|---|--------|---|--|---|---------------|
| SCENARIOS SCRIPTS | | Import | Optional name | Optional description | Click here to force specific parameter values to be used together in a scenario | Then this out |



Click the respective fields to fill in the Name and/or Description of your forced Scenario (Figure 3 - 4; 5 - optional) and the Expected Outcome (Figure 3 - 7; optional).

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Click the Forced Parameters Values (Figure 3 - 6) and select only the values you need to trigger your business requirement. A modal will open (Figure 4) for that.

| XRAY TEST CASE DESIGNER | Ana Test 🐱 | 2 | | | | | | | (|
|--------------------------------------|------------|----------|------------------|--------|-----------------|----------|-------|----------------|-----------------------------|
| Q Parameters | ¢ | Na | | | - | 10 · · · | | | Expected Outcome |
| ✓ RULES | Import | Op | Forced Parameter | Values | | | × | eter values to | Then this outcome is expect |
| Constraints | | | Force | | to be | | | | |
| Forced Interactions | | | Parameter | ~ | Parameter Value | ~ | 🕂 Add | | |
| Scenarios | | | | | | | | | |
| > SCRIPTS | | | | | | | | | |
| > ANALYSIS | | | | | | Cancel | Save | | |
| | | | | | | | 1 | | |
| > REVIEW | | | | | | | | | |
| Share | | | | | | | | | |
| > Export | | | | | | | | | |
| Synchronization | | | | | | | | | |
| | | | | | | | | | |
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Figure 4 - Modal

For example, if our model has 10 parameters, but the business rule only needs four to trigger, we include just those four in the Forced Interaction.

Once you're finished, click Save (Figure 4 - 1).

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When you create your Tests, your Forced Scenario will appear in a newly generated set of Tests (Figure 5).

| # ^ | Customer status | LTV 0 | Loan amount 0 | Property location 0 | Expected Outcome |
|-----|-----------------|-------|---------------|---------------------|--------------------------------|
| 1 | Regular | 90% | Large | In a Flood Zone | Send the notification to the m |
| 2 | VIP | 90% | Medium | Not in a Flood Zone | |
| 3 | Employee | 50% | Large | Not in a Flood Zone | |



- This feature is not just for "official requirements." Consider including other critical elements in your Xray Test Case Designer-generated suite, such as a forced scenario that contains the most common value for each Parameter (i.e., the *Happy Path*).
- As noted above, you don't need to specify every value. In fact, it's better to only force the values needed to trigger the Requirement or business rule. This allows for the greatest variation in your Xray Test Case Designer-generated Tests.
- Keep the concept of *Expected Results* clearly separated from ordinary parameters and values in your mind. Treat them differently when entering your test models. Typically, you should not enter Expected Result values in the Parameters screen. The primary places to enter Expected Results are the Forced Interactions and Scripts screens.
- Use this feature selectively. Remember, many combinations will automatically appear in your Xray Test Case Designer-generated models without requiring any special action. For example, if a business rule only requires two values to appear together, that requirement will already be met when you create a 2-way (pairwise) set of Tests. You would only need to use this feature when ensuring that three or more specific values are tested together in a single test case.

Import Forced Interactions

You can import Forced Interactions, which allows you to upload data-driven Scenarios.



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Go to My Test Models (Figure 6 - 1) and enter a Test Model (Figure 6 - 2).

| • New Test Model | Search for test models by model o | r project name | | | |
|----------------------|---|----------------|----------------|--------------|------------------|
| My Test Models | | | | | |
| > MY PROJECTS | Name≑ | Project 🕆 | Modified * | Parameters 🗘 | Scenarios 🗘 |
| > RECENT PROJECTS | 2 Ana Test | private | 41 minutes ago | 3 | 1 <i>(2-way)</i> |
| ▲ Sample Test Models | Ana Test (copy) | Academy | 4 days ago | 0 | |
| | | | | | |

Figure 6 - Test model

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You will enter the Parameters screen (Figure 7).

Click Rules (Figure 7 - 8) and then Forced Interactions (Figure 7 - 1).

| | Q Parameters | ۲ | | Name | Description | Forced Parameter Values | Expected Outo |
|---|---|---|----------|---|---|--|----------------|
| Ì | RULES 8 Constraints 3 Forced Interactions 1 | | | Requirement: (#2947 – Reject Certain High Risk Flood Zone Applications) | if a regular applicant applies for a large loan in a flood zone with 90% LTV, send the notification to the manager. | Customer status = Regular LTV = 90% Loan amount = Large Property location = In a Flood Zone | Send the notif |
| 2 | SCENARIOS SCRIPTS | | 2 Import | Optional name | Optional description | Click here to force specific parameter values to be used together in a scenario | Then this outc |



Click the Import button (Figure 7 - 2).

A modal will open (Figure 8). Click the Choose file (Figure 8 - 1) to select the file you wish to import, and then click Import (Figure 8 - 2).

| XRAY TEST CASE DESIGNER | Ana Test 👻 📕 | | | | (|
|--|--|---|---------------------|----------------|--|
| Parameters RULES Constraints Forced Interactions Scripts ANALYSIS REVIEW Share Export Synchronization R. 2024 Idea Inc. Legal Privacy | Na Op Import Forced Interac Choose file | tions Import File (Recommended: Start with the Import Templ No file chosen | x ate) Import | eter values to | Expected Outcome Then this outcome is expect |
| © 2024 Idera, Inc. Legai Privacy | | | | | |

Figure 8 - Modal

We recommend using the Excel template (you can download it from the link at the top of the dialog; Figure 8 - 3) and pasting your Scenarios in the table format to cell D1 (given you have Parameter names).

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.