Exercise 03a | Instance Structure – Administration and Precondition

Objective

By the end of this exercise, you will be able to create the Instance structure for the Attributes "Administration" and "Prerequisite".

Why is this important?

Creating a logical and consistent Instance structure is vital for a successful TestSheet.

Key elements:

Instance

Instructions

1. Duplicate the Folder: "**Exercise 2b Attribute Structure – Process and Verification**" and rename it "**Exercise 3a Instance Structure – Administration and Precondition**". ☐

Context

From now on we will introduce the **Context** section. This information is additional to the exercise steps and will give context to the instructions in the exercises.

The Instances for the Administration Attribute should now be added. Remember that these instances supply greater information regarding the setup of the Test Sheet. It will not affect the number or make up of the TestCases.

2. Focus on the Attribute "**Test Designer**" within the Attribute "**Administration**". Use the Ribbon to add the Instances:
   - **Max Methodology**
   - **Steven Design**

   ☐

3. Within each Sub-Attribute, add the **Instances** as per the table below: ☐

Sub Attribute	Instances
Contact Person	**Peter Business**
	Carl Business
Test Stage	**Regression**
	Smoke
	One Time

4. Focus on the Sub-Attribute "**Customer**" (*Precondition>>Customer)*. Add the **Instance** to the Sub-Attributes as per the table below: ☐

Sub Attribute	Instances
Type of User	**Registered**
Address	**Available**

Hints

- Instances can be created in three ways: 1) using the button in the Ribbon “Create Object”, 2) using the Mini Toolbar “Create Attribute” or 3) shortcut “Ctrl+N Ctrl+I” which creates a Sub-Attribute.
- Use the Mini Toolbar and “Create Instance (after this) shortcut “Ctrl+,” which creates an Instance on the same level as the one currently selected.

Exercise 03b | Instance Structure – Process and Verification

Objective

By the end of this exercise, you will be able to create the Instance structure for the Attributes "Process" and "Verification".

Why is this important?

This will walk you through the process of creating a more complex Instance structure.

Instructions

1. Duplicate the Folder: "**Exercise 3a Instance Structure – Administration and Precondition**" and rename it "**Exercise 3b Instance Structure – Process and Verification**". ☐

Context

We now need to create the Instances within the Attributes "Process" and "Verification". In the Attribute "Product", we need to add the types of product that will be required for our TestCases, not the exact products themselves.

When purchasing products in the WebShop, shipping costs depend on the ordered product (e.g. for digital downloads no shipping costs apply) and the value of the order's sub-total (with an order sub-total of more than $50, no shipping costs apply).

To reflect this, we need the following categories:

- Physical product that will need to be shipped e.g a pair of Blue Jeans
- A digitally downloaded product that requires no shipping e.g. 3rd Album
- Product or number of products that would lead to free shipping

The boundary values for the shipping costs also now need to be considered. So, two more Instances are required:

- The boundary for free shipping
- Boundary where shipping costs apply

2. Create the Instance structure as per the table below: ☐

Attribute	Attribute Path	Instances
Product	*Process>>Ordered Products>>Product*	**Physical**
		Digital
		Free Shipping
		Free Shipping | Boundary
		Shipping Costs Applied | Boundary

Context

The rest of the Instances are more straightforward. There are three Attributes relating to the addresses:

- Billing address will always revert to the "Default" address in the system so the default address is the only one needed.
- Shipping address: we need two Instances, one where the shipping address is the same as the billing address, and another where no shipping is required for when a digital product is ordered.
- In-Store Pickup: Three instances, true and false for a physical product that is or is not picked up in-store and N/A for a digital product that cannot be picked up.

Payment methods are not the focus of the tests in this TestSheet. So, within Payment Method, we only add details of the single payment method that we are going to use - "Credit card". Therefore, we need to add an Instance for each Attribute: to describe the type of card and the information the SUT needs to process a payment:

- Type of card: Visa
- Visa card number
- Expiry date
- 3-digit card code

3. Create the Instance structure as per the table below:

Attribute	Attribute Path	Instances
Billing Address	*Process>>Checkout>>Billing Address*	**Default**
Shipping Address	*Process>>Checkout>>Shipping Address>>Shipping Address*	**Equals Billing Address**
		N/A
In-Store Pickup	*Process>>Checkout>>Shipping Address>>In-Store Pickup*	**True**
		False
		N/A
Card Type	*Process>>Checkout>>Payment Method>>Credit Card Information>>Card Type*	**Visa**
Card Number	*Process>>Checkout>>Payment Method>>Credit Card Information >>Card Number*	**4916637380170906**
Expiration Date	*Process>>Checkout>>Payment Method>>Credit Card Information>>Expiration Date*	**Expires in two years**
Card Code	*Process>>Checkout >>Payment Method>>Credit Card Information>>Card Code*	**123**

Context

Finally, the Verification Attribute requires Instances. These are the elements that we will be verifying are correct within the TestCase:

- Attribute "Message" needs an Instance that confirms that the order successful message has appeared.
- "Shipping cost" Attribute: Remembering the business context from earlier in the TestCase, there are three possible options here:
  - ◊ The default shipping costs are applied
  - ◊ Free shipping
  - ◊ No shipping costs
- The Attribute "Total price" is the total value of the order. There are two possibilities:
  - ◊ The order value plus any shipping costs
  - ◊ Just the order value when there are no shipping costs

4. Create the Instance structure as per the table below:

Attribute	Attribute Path	Instances
Message	*Verification>>Message*	**Success Message**
Shipping Cost	*Verification>>Order Details>>Shipping Cost*	**Default Shipping Costs**
		Free Shipping
		No Shipping
Total Price	*Verification>>Order Details>>Total Price*	**Order Value + Shipping Costs**
		Order Value

Exercise 03c | Instance Structure – Set Character and Position

Objective

By the end of this exercise, you will be able to set the Instance Character and Position of the Instances created in the TestSheet.

Why is this important?

Setting the Instance Character and Position helps keep the TestSheet easy to read and makes defining the TestCases considerably simpler.

Key elements:

Valid | Invalid | Straight-Through | Inner value | Boundary value

Instructions

1. Duplicate the Folder: "**3b Instance Structure – Process and Verification**" and rename it "**Exercise 3c Instance Structure - Set Character and Position**". ☐

Context

The StraightThrough Instances need to be defined. For this TestSheet, the business department has advised us that the StraightThrough is:

- Customer address is the default address in the customer's account
- A physical product is ordered
- Billing address is the default address in the customer's account
- There is no in-store pickup
- Visa is the chosen card, with the relevant Visa card Instances

2. Navigate to the Instance "**Registered**" (*Precondition>>Customer>>Type of User*) use the Ribbon button "**Toggle Character**" to change the Character to "**StraightThrough**". ☐
3. Add the "**Character**" to the rest of the Instances as per the table on the following page: ☐

Instance	Path	Character
Available	*Precondition>>Customer>>Address>>Available*	**StraightThrough**
Physical	*Process>>Ordered Products>>Product>>Physical*	**StraightThrough**
Default	*Process>>Checkout>>Billing Address>>Default*	**StraightThrough**
Equals Billing Address	*Process>>Checkout>>Shipping Address>>Shipping Address>>Equals Billing Address*	**StraightThrough**
False	*Process>>Checkout>>Shipping Address>>In-Store Pickup>> False*	**StraightThrough**
Visa	*Process>>Checkout>>Payment Method>>Credit Card Information>>Card Type>>Visa*	**StraightThrough**
4916637380170906	*Process>>Checkout >> Payment Method>>Credit Card Information>>Card Number>>4916637380170906*	**StraightThrough**
Expires in two years	*Process>>Checkout>>Payment Method>>Credit Card Information>>Expiration Date>>Expires in two years*	**StraightThrough**
123	*Process>>Checkout>>Payment Method>>Credit Card Information>>Card Code>>123*	**StraightThrough**

Context

The Boundary Instances now need to be identified and marked as such. These can be identified by looking back at the business context for Exercise 3b.

4. Identify the Boundary Values in the table below and change their "**Position**" to "**Boundary**" using the "**Toggle Position**" Button in the Ribbon. ☐

Instance	Path	Position
Free Shipping | Boundary	*Process>>Ordered Products>>Product>>Free Shipping | Boundary*	**Boundary**
Shipping Costs Applied | Boundary	*Process>>Ordered Products>>Product>>Shipping Costs Applied | Boundary*	**Boundary**

Hints

- Instances Characters and position can also be changed in the Properties tab of the Instance.
- A StraightThrough cannot have its Position changed, as a StraightThrough must always be "Inner" and "Valid".
- There can only be one StraightThrough in Tosca per "Instance Group".
- The Character "Invalid" is not used in this TestSheet but can be set in the same way as "Straight Through" and "Valid".
- The Shortcut to change the Character is F7.
- The Shortcut to change the Position is F8.