

Challenge three: Discount & Shipping Logic Testing

Problem Statement: The Product Owner provides a set of rules for calculating discounts, shipping costs, and labeling requirements based on product characteristics. The goal is to derive logical test cases ensuring pairwise coverage while maintaining efficiency.

Solution:

Specifications Summary:

- **Discount depends on product colors:**
 - White -> 10%
 - Green -> 11%
 - Other -> No Discount
- **Shipping cost depends on package size:**
 - Small -> Free
 - Medium -> 12Euros
- **Label Requirement depends on product type and destination:**
 - Electronics -> Label always required
 - Non-Electronics -> Label only required when shipping outside Europe

Classification Tree:



Identifying All Combinations:

Color (3) * Size (2) * Type (2) * Destination (2) = 24 Combinations

Testing all 24 is too much — so I'll use Pairwise Testing (tests all possible pairs of variable interactions at least once).

- Making sure every pair of factors (color-size, color-product type, color-destination, size-product type, etc.) appears at least once.
- All rules (discount, shipping, labeling) are exercised.

Data Coverage Testing

Color	Size	Product Type	Destination	Expected Discount	Shipping	Label?
White	Small	Electronics	Europe	10%	Free	Yes
White	Medium	Non-Electronics	Outside Europe	10%	12	Yes
Green	Small	Non-Electronics	Europe	11%	Free	No
Green	Medium	Electronics	Outside Europe	11%	12	Yes
Other	Small	Electronics	Outside Europe	0%	Free	Yes
Other	Medium	Non-Electronics	Europe	0%	12	No

Logical Test Cases

Test Case 1:

Scenario: White electronic product, small package, shipping to Europe

Expected Result: 10% Discount, Free Shipping, Label Required (Electronics)

Test Case 2:

Scenario: White non-electronic product, medium package, shipping outside Europe

Expected Result: 10% Discount, 12Euros Shipping, Label Required (outside Europe)

Test Case 3:

Scenario: Green non-electronic product, small package, shipping to Europe

Expected Result: 11% Discount, Free Shipping, No Label Required (Non-electronics + Europe)

Test Case 4:

Scenario: Green electronic product, medium package, shipping outside Europe

Expected Result: 11% Discount, 12Euros Shipping, Label Required (Electronics + outside Europe)

Test Case 5:

Scenario: Other colored electronic product, small package, shipping outside Europe

Expected Result: No Discount, Free Shipping, Label Required (Electronics + outside Europe)

Test Case 6:

Scenario: Other colored non-electronic product, medium package, shipping to Europe

Expected Result: No Discount, 12Euros Shipping, No Label Required (Non-Electronics + Europe)

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