



Business Logic Discovery with Decision Table

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Business logic reflects the business practices that set a business apart from its competitors. Understanding the business logic is critical in determining how a company can become more competitive. Unfortunately, it is not that easy.

[Decision table](#) is one of the tools that helps. It provides a systematic approach in mining and uncovering business logic. In a decision table, business logic is partitioned into the following parts.

Case Study - Supermarket Delivery Service

V&P is the largest supermarket chain in the city. As the city's foremost supermarket, V&P is dedicated to provide its customers with quality products and services. Recently, V&P has decided to review their delivery service to achieve the followings:

1. Standardize the services of all branches to provide customers with a unified shopping experience
2. Review and possibly refine the current service to make it more attractive

In order to achieve these, the chief operating officer of V&P have had a meeting with the store managers to review and discuss the current delivery policy. Here are the notes drafted during the meeting:

1. Orders of \$80 and above, with weight lower than 10 kg will be delivered for free
2. Delivery service is not available if the order value is less than \$80.
3. Regardless of the amount purchased, delivery service is not available when destination is in an outlying islands.

Some managers believe that there do have more rules other than the four listed above. Unfortunately, they are unable to figure them out especially when the rules weren't documented anywhere, ever.

One of the managers suggests to do a bit of analysis by porting the rules into a decision table. Here is the decision table he drew base by transforming the four known rules into table form:

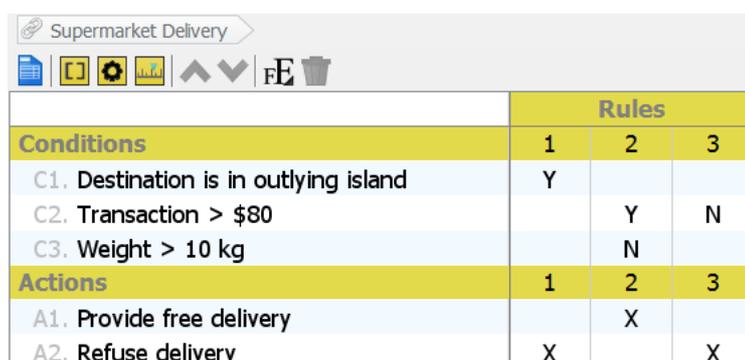
Conditions	Rules		
	1	2	3
C1. Destination is in outlying island	Y		
C2. Transaction > \$80		Y	N
C3. Weight > 10 kg		N	
Actions	1	2	3
A1. Provide free delivery		X	
A2. Refuse delivery	X		X

By checking the decision table, one of the managers said, "What about heavier than 10 kg? As I remember, orders weight heavier than 10kg will incur a \$10 delivery fee." The managers have been enlightened. They then revised the decision table by adding this new rule. Here is the table updated:

Conditions	Rules			
	1	2	3	4
C1. Destination is in outlying island	Y			
C2. Transaction > \$80		Y	Y	N
C3. Weight > 10 kg		N	Y	
Actions	1	2	3	4
A1. Provide free delivery		X		
A2. Refuse delivery	X			X
A3. Request \$10 delivery fee			X	

Try it out

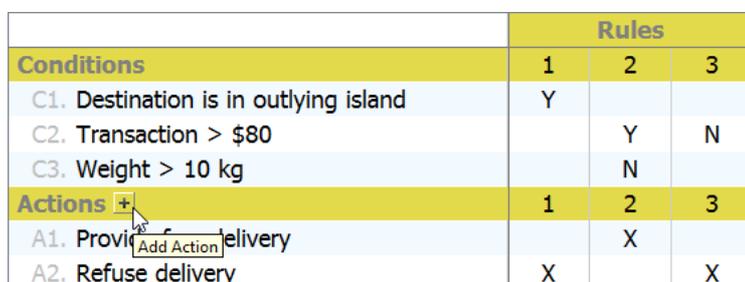
1. Download the [decision table sample project](#).
2. Start Visual Paradigm and open the downloaded project file.
3. Open the decision table.



The screenshot shows the Visual Paradigm software interface with a decision table titled 'Supermarket Delivery'. The table has a toolbar above it with icons for file operations and editing. The table structure is as follows:

Conditions	Rules		
	1	2	3
C1. Destination is in outlying island	Y		
C2. Transaction > \$80		Y	N
C3. Weight > 10 kg		N	
Actions	1	2	3
A1. Provide free delivery		X	
A2. Refuse delivery	X		X

4. Base on the case study above, we have to add this rule into the table: "Orders weight heavier than 10kg will incur a \$10 delivery fee." The new rule involves a new business decision - request \$10 delivery fee. So let's add a new action first. Move the mouse pointer over the compartment caption **Actions**. Click on the add button near the caption.



The screenshot shows the same decision table as above, but with a mouse cursor hovering over the 'Add Action' button (a small plus sign) next to the 'Actions' header. The table content is identical to the previous screenshot.

Conditions	Rules		
	1	2	3
C1. Destination is in outlying island	Y		
C2. Transaction > \$80		Y	N
C3. Weight > 10 kg		N	
Actions	1	2	3
A1. Provide free delivery		X	
A2. Refuse delivery	X		X

5. Enter *Request \$10 delivery fee* as action.

6. We can now add the rule into the decision table. Similar to adding an action, add a rule by clicking on the add button near the compartment caption **Rules**.

	Rules		
Conditions	1	2	3
C1. Destination is in outlying island	Y		
C2. Transaction > \$80		Y	N
C3. Weight > 10 kg		N	
Actions	1	2	3
A1. Provide free delivery		X	
A2. Refuse delivery	X		X
A3. Request \$10 delivery fee			

7. Let's express the rule by filling in the conditions and actions cells properly. Under the new rule, double click on the cell for condition *Transaction > \$80*. Select **Y** in the drop down menu.

	Rules			
Conditions	1	2	3	4
C1. Destination is in outlying island	Y			
C2. Transaction > \$80		Y	N	
C3. Weight > 10 kg		N		
Actions	1	2	3	4
A1. Provide free delivery		X		
A2. Refuse delivery	X		X	
A3. Request \$10 delivery fee				

8. Similarly, put **Y** for the condition *Weight > 10 kg*.

	Rules			
Conditions	1	2	3	4
C1. Destination is in outlying island	Y			
C2. Transaction > \$80		Y	N	Y
C3. Weight > 10 kg		N		Y
Actions	1	2	3	4
A1. Provide free delivery		X		
A2. Refuse delivery	X		X	
A3. Request \$10 delivery fee				

9. The decision of this rule is to request \$10 delivery fee. Mark the action *Request \$10 delivery fee* with **X**.

< Rules >				
Conditions	1	2	3	4
C1. Destination is in outlying island	Y			
C2. Transaction > \$80		Y	N	Y
C3. Weight > 10 kg		N		Y
Actions	1	2	3	4
A1. Provide free delivery		X		
A2. Refuse delivery	X		X	
A3. Request \$10 delivery fee				X (Marked)

10. Let's place the rule next to the second rule so that readers can understand the different business decisions to take when the order is more or less than 10 KG. Right-click on the fourth rule and select **Move Left** from the popup menu.

< Rules >				
1	2	3	4	
Y				
	Y	N	Y	
	N		Y	
1	2	3	4	
	X			
X		X		
			X	

Add Rule

Assign Condition

- New
- Existing ▶

Assign Action

- New
- Existing ▶
- ◀ Move Left
- Move Right ▶
- Distribute Columns Evenly
- Delete

Finally, the decision table should look like this:

Rules				
Conditions	1	2	3	4
C1. Destination is in outlying island	Y			
C2. Transaction > \$80		Y	Y	N
C3. Weight > 10 kg		N	Y	
Actions	1	2	3	4
A1. Provide free delivery		X		
A2. Refuse delivery	X			X
A3. Request \$10 delivery fee			X	

Conclusion

Base on a decision table, you can easily discover hidden rules by evaluating the different combinations of conditions.

Decision table also helps in generating new ideas related to decision making. Continue with the supermarket example, the managers may come up with new rule like: Request for an additional payment when the packed goods is too big in size.

The more thoughtful decision making, the better the business.

Resources

1. [Tutorial - Establish and Maintain Sensible Business with Decision Table](#)
2. [Tutorial - Align Business Goal and Business Logic with Decision Table](#)
3. [Tutorial - Decision Table in Action](#)
4. [Article - Decision Table Explained](#)

Related Links

- [Full set of UML tools and UML diagrams](#)



Visual Paradigm home page
(<https://www.visual-paradigm.com/>)

Visual Paradigm tutorials
(<https://www.visual-paradigm.com/tutorials/>)