Decision Table

by
Ramraj S ME.,
Assistant Professor
Department of Software Engineering

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Agenda

- ► Decision Table
- ► Example
- ► Decision Tree for the table
- ► Identifying problem
- ► Corrrecting the decision table

Decision Table

- A decision table is a good way to deal with different combination inputs with their associated outputs
- Testing combinations can be a challenge, as the number of combinations can often be huge.
- Identify logically correct set of rules and generate test cases for them.
- The technique involves listing the variables included in the set of rules, and the different combinations of the variables at hand.
- Sometimes the rules involved are written vertically in columns and, sometimes, horizontally in rows

Conditions	Step 1	Step 2	Step 3	Step 4
Repayment money has been mentioned	Y	Y	N	N
Terms of loan has been mentioned	Y	N	Y	N
Actions/Outcomes				
Process loan money	Y	Y		
Process term	Y		Y	

Figure : Loan Processing-Example

► Example: We have a system which handles personal item insurance, where you can insure your car. We choose to compile test cases for the function which calculates the excess on the policy by creating a decision table and a decision tree.

- ▶ Business Rule 1: As a starting point, the excess for all policy holders is 500
- ▶ Business Rule 2: Men under 25 years of age are subject to an excess increased by 1500
- ▶ Business Rule 3: Everyone over 25 with a family type care are subject to an excess reduced by 200
- ▶ Business Rule 4: All persons between 45 and 65 are subject to an excess reduced by 100 kronor, regardless of other discounts
- ▶ Business Rule 5: Sports cars attract an excess increased by 1000 kronor, regardless of other parameters
- ▶ Business Rule 6: Mid-Range cars do not affect the excess
- ▶ Business Rule 7: Everyone over 65 surrenders all discounts

Identifying parameters

Figure : Parameters and Groups

Forming table

Rules	Age	Gender	Type of car	Additional charge	Excess total
1	≤ 25	Male	Family, mid - range	1500	2000
2	≤ 25	Male	Sports	2500	3000
3	≤ 25	Female	Family, mid - range	0	500
4	≤ 25	Female	Sports	1000	1500
5	> 25, ≤ 45	Empty field	Family	- 200	300
6	> 25, ≤ 45	Empty field	Sports	1000	1500
7	> 25, ≤ 45	Empty field	Mid - range	0	500
8	> 45, ≤ 65	Empty field	Family	- 300	200
9	> 45, ≤ 65	Empty field	Sports	900	1400
10	> 45, ≤ 65	Empty field	Mid - range	- 100	400
11	> 65	Empty field	Sports	1000	1500

Figure : Decision Table

Problem Identified

- From the table it is Identified that Business rule 3 and 7 are contradict each other.
- It is reframed : Everyone between 25 and 65 years of age with a family type car attracts an excess reduced by 200

Decision tree

- To check that the set of rules above is correct, we use a method called a decision tree.
- Begin with parameters that all rules on the same branch utilise.
- continue in turn with the parameter which most rules utilise in order to prevent the same rule being split between several branches.
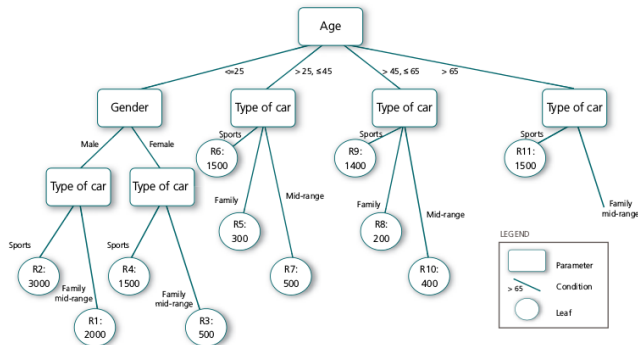
Decision Tree

Figure : Decision Tree

Corrected - Decision Table

Rules	Age	Gender	Type of car	Additional charge	Excess total
1	≤ 25	Male	Family, mid - range	1500	2000
2	≤ 25	Male	Sports	2500	3000
3	≤ 25	Female	Family, mid - range	0	500
4	≤ 25	Female	Sports	1000	1500
5	> 25, ≤ 45	Empty field	Family	- 200	300
6	> 25, ≤ 45	Empty field	Sports	1000	1500
7	> 25, ≤ 45	Empty field	Mid - range	0	500
8	> 45, ≤ 65	Empty field	Family	- 300	200
9	> 45, ≤ 65	Empty field	Sports	900	1400
10	> 45, ≤ 65	Empty field	Mid - range	- 100	400
11	> 65	Empty field	Sports	1000	1500
12	> 65	Empty field	Family, mid - range	0	500

Figure : Corrected - Decision Table
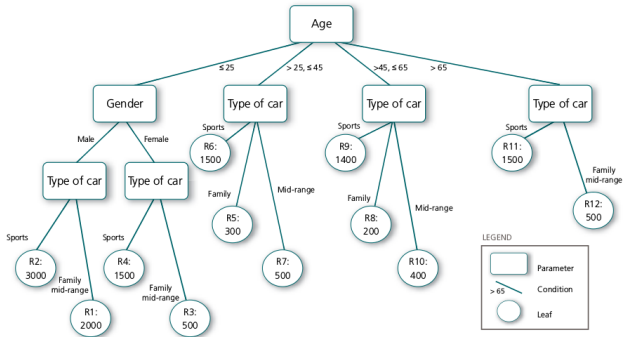
Decision Tree

with the last rule.

Figure : Decision Tree

[1]   Frank Buechner *"TestCaseDesignUsingTheClassificationTreeMethod "*

Thank you