

<Decision Tree>

1.

- Decision Tree

-
-
- input/target ,
- target variable
 - interval -> regression tree
 - categorical -> classification tree
 - (classification tree)

2.

- HEMQ data set

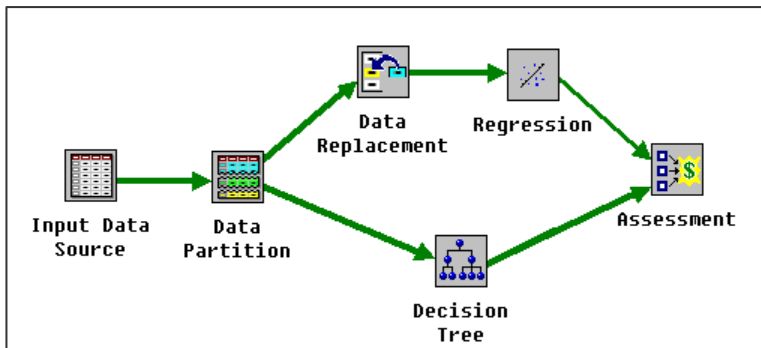
	BAD	
	REASON JOB LOAN MORTDUE VALUE DEBTINC YOJ	(6) 가
	DEROG CLNO DELINQ CLAGE NINQ	(,) 가

- 5,960
- BAD
- 1,189 (20%) , 12

- : 가
가

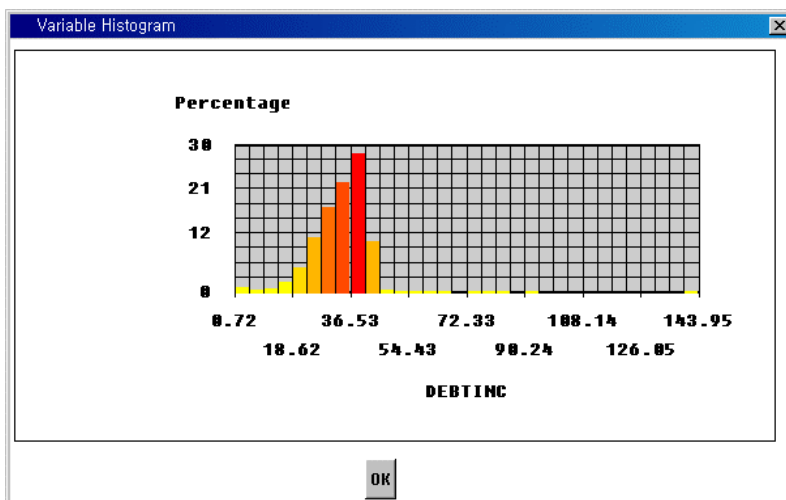
3. Decision Tree

<PFD >



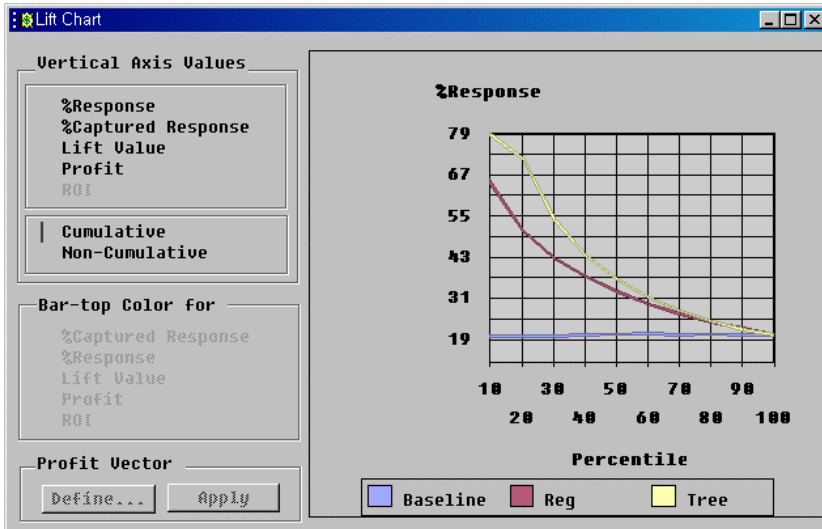
- input data source node
 1. Input data source node HMEQ data set
 2. BAD Model role target
 3. DEROG Measurement scale interval

<DEBTINC >



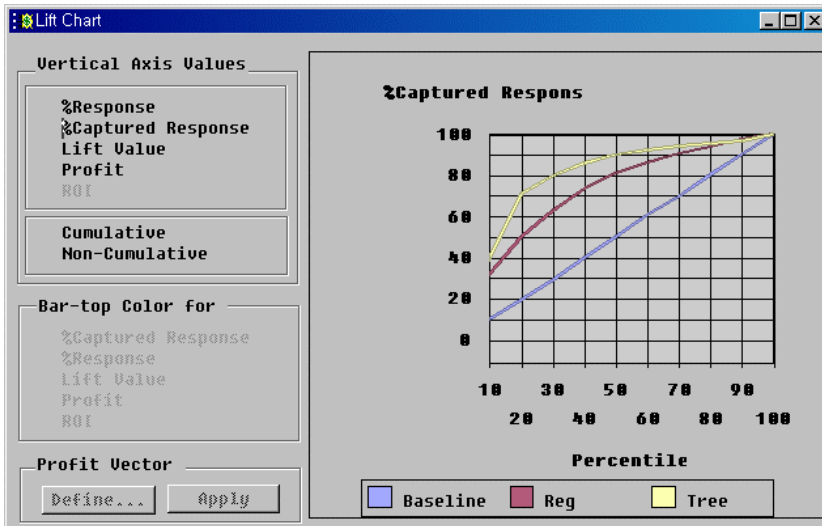
- Data partition node : data partition node Training , Validation, Test 67, 33, 0
- Regression & Decision Tree node :
- Assessment node
 1. Assessment node diagram
 2. (Regression Decision tree)
 3. menu bar Tools → Lift chart

<Cumulative >



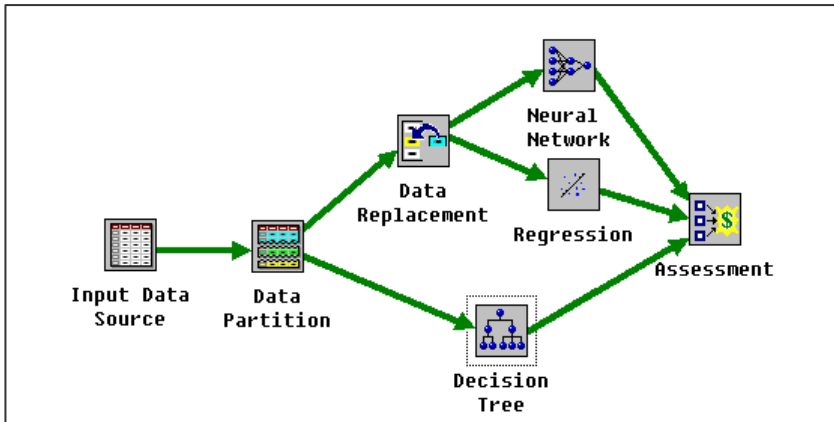
- Decision tree Regression .
- Decision tree 10% 80% bad() .
- Regression 10% 66% bad .

<%Captured Response >

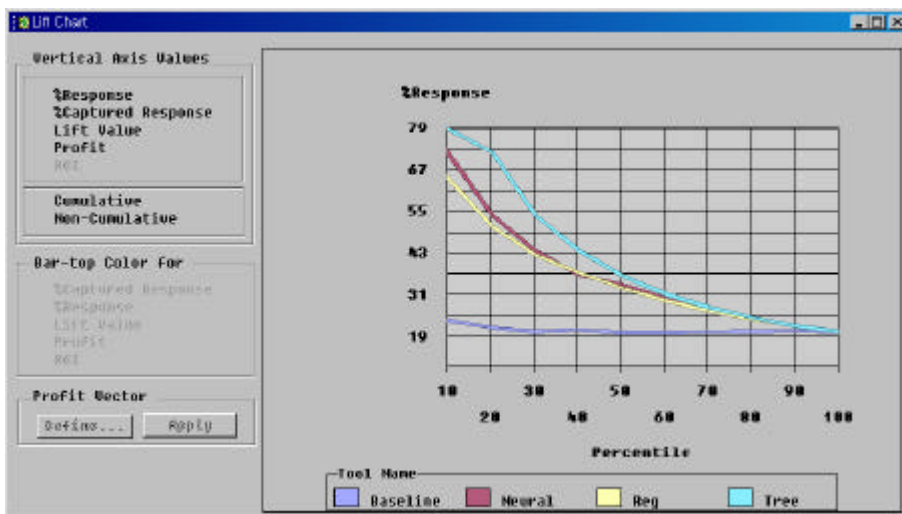


- decision tree : 가 30% bad
- loan() 80%
- Regression : 80% 50%
- decision tree (default)
- Decision Tree - (input) (target)

<Neural Network Node 가 PFD>



1. Neural network node 611 .
2. Assessment node diagram
3. .
4. Menu bar Tools Lift chart

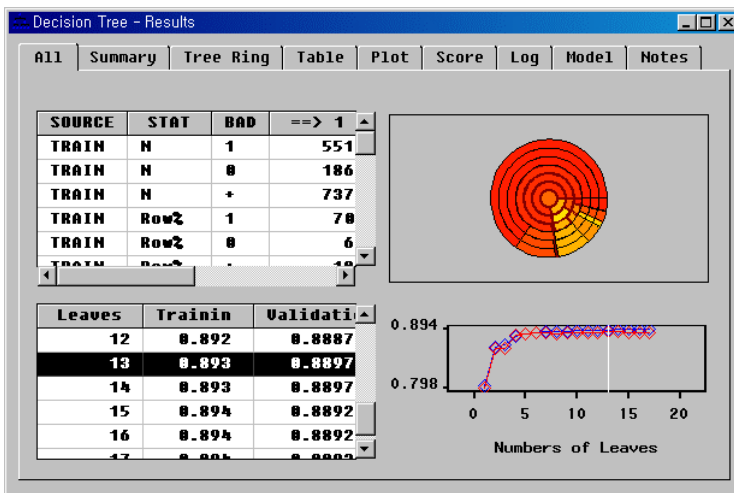


- neural network regression decision Tree
- 가 가 .

<Decision Tree > - 7



<Assessment table> - 88.97% validation accuracy



1. menu bar View Tree

2. Tools -> tree option

3. Tree depth down field 6

tree 가

□ Tree ring diagram decision tree node (purity)

가 0 1 node red

가 1 0 node yellow

□ purify target proportion coloring scheme

1. decision Tree-Result

2. menu bar tool → Define colors...

- Data Splits-Color Palette가
- 3. Proportion of a Target value
- 4. Target value table 0

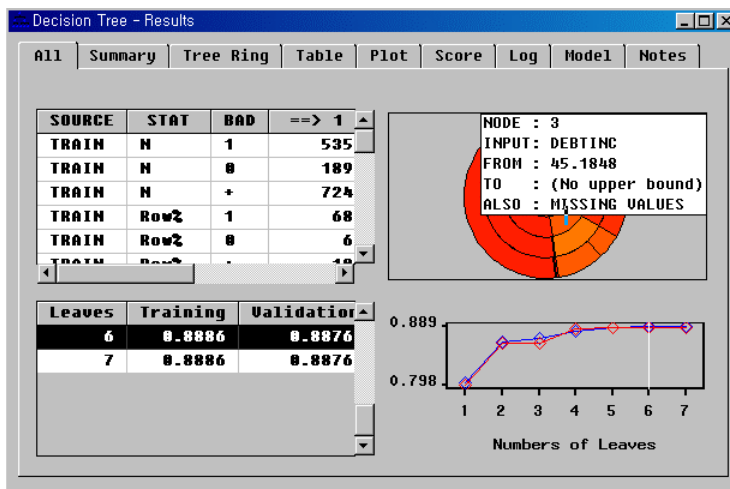


- red : bad
- yellow : bad good
- green : goods

- split good (applicant 3/4) good bad
- (applicant 1/4)
- bad
- bad
- good

● Split : tool bar view info tool

1. (view information about point)
 2. tree ring
- e.x) split

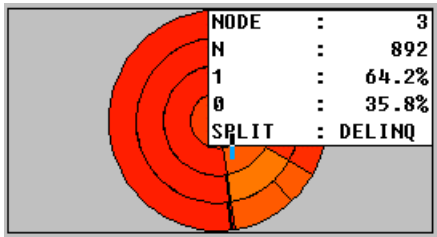


45

applicant


missing value

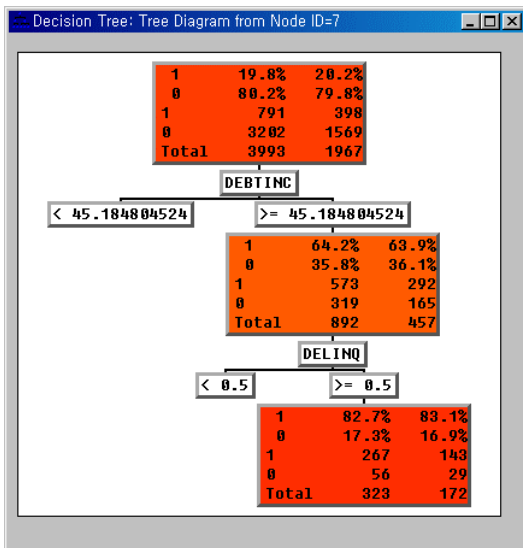
1. menu bar Tools → probe Tree rings statistics
2. split



64%

가

- decision tree node view path feature : tree ring decision rule
1. decision tree –result window
 2. selection arrow  tool
 3. menu bar view→ path
 4. tree ring diagram bad

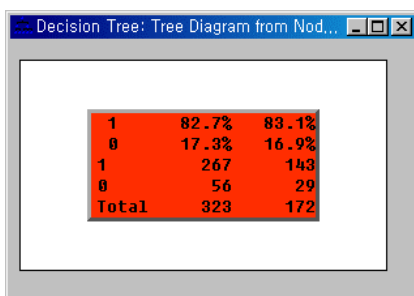


training data

323

83%

1. decision Tree-Result Window
2. menu bar view→Tree



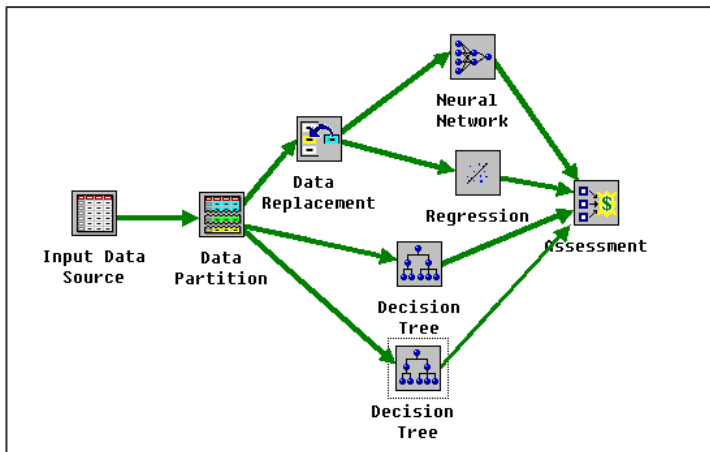
4.

•

-
-

tree 가

가



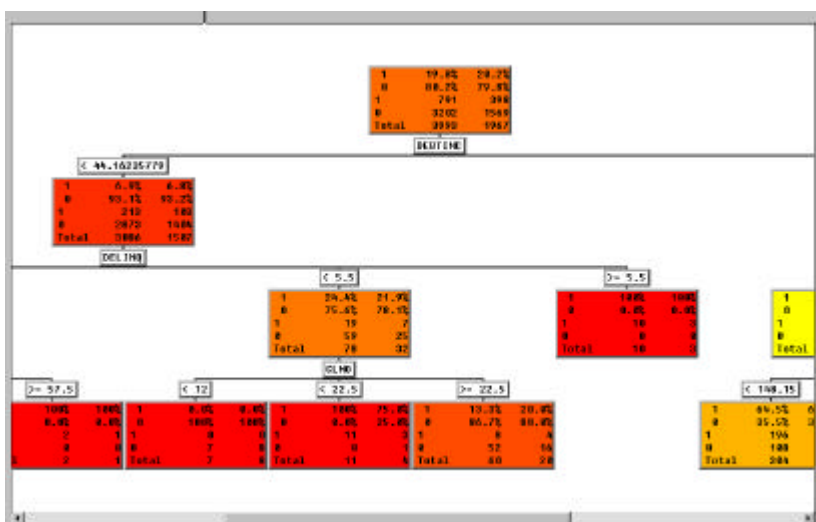
1. workspace Decision tree node 가

2. decision tree basic tab

3. maximum number of branches from a node 4 2, 3, 4 가

4. decision tree node

5. decision tree node



- tree 가 7 12 가
- 가 가

- tree validation 88.87% 88.97%
- tree diagram node .



- 가

Decision tree

1. decision tree node basic tab .
2. minimum number of observation in a leaf 25
: 25 가 가
3. Observations required for a split search 100
: 가 100 가

◆ Decision tree node

minimum number of observations in a leaf \leq (observations required for a split search)/(Maximum number of branches for a node)

ex> node maximum number of branches split search
observation (100/4)=25

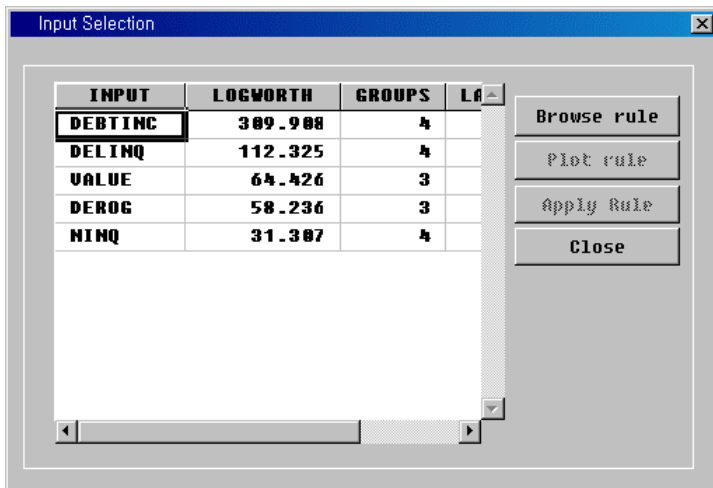
1. decision Tree node
2. decision tree node decision tree-Results tree diagram .



- optimal tree 7
. (branches)
- validation accuracy 88.15%
- DEBTINC split
4 가

1. Tree diagram window .
2. DEBTINC . Input selection .

가 5



1. DEBTINC
2. browse rule interval variables splitting rule

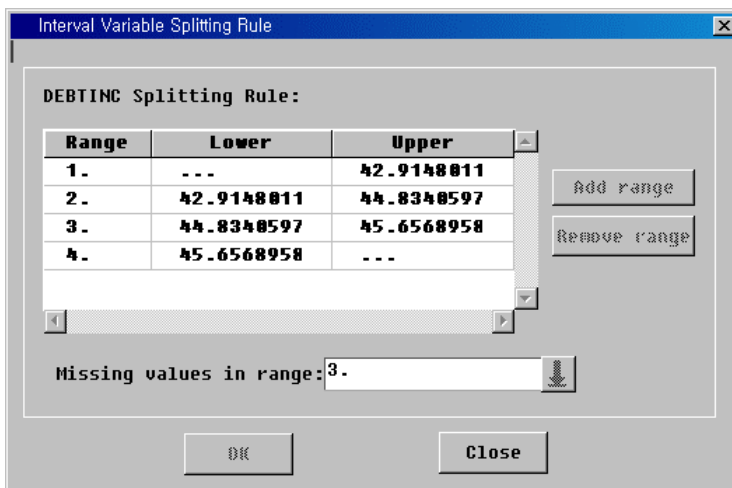


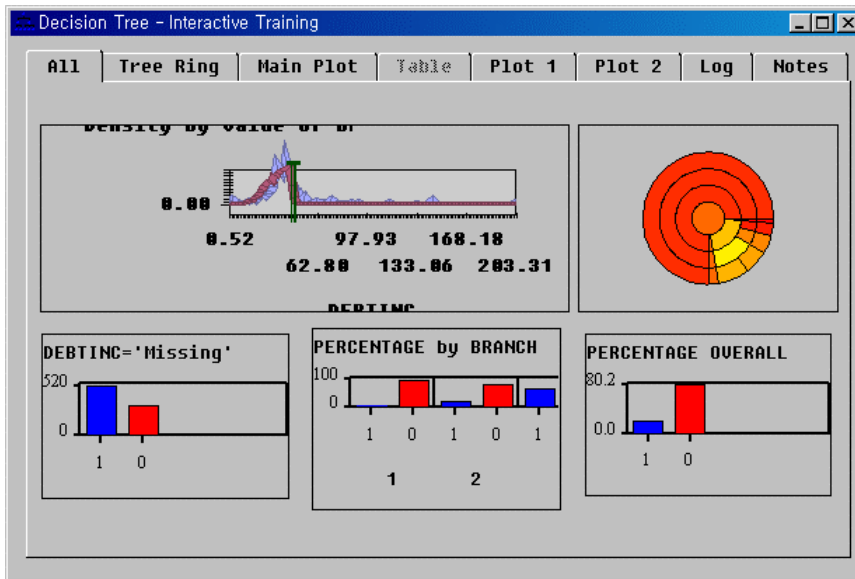
table missing value 가 4 가
 . interval variable splitting rule window, the input select window decision tree-
 result

- splits
- decision tree splits
- business split
- Decision tree node interactive Training method decision tree node
- business rule type


mouse menu button 가 decision tree node

1. interactive Training

2. Decision Tree-Interactive Training



3. menu bar view→tree

4. tool bar Explore Rules button 

5. tree . input selection 12 split

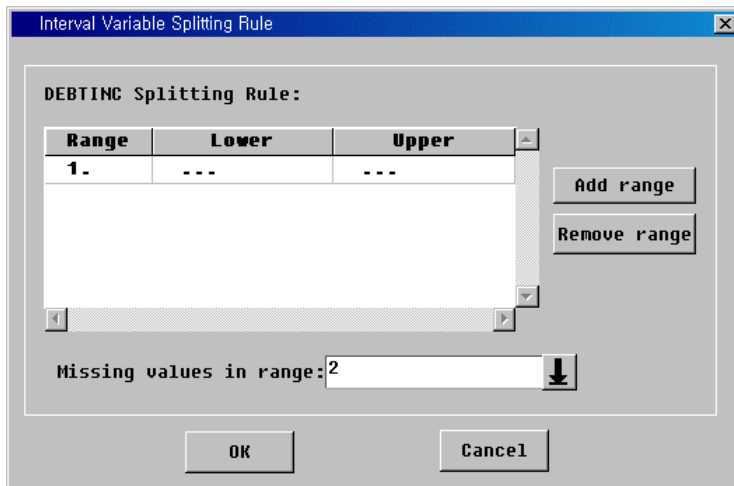
INPUT	LOGWORTH	GROUPS	LA
DEBTINC	389.988	4	
DELINQ	112.325	4	
VALUE	64.426	3	
DEROG	58.236	3	
NINQ	31.387	4	
CLAGE	25.845	2	
LOAN	23.884	3	
JOB	11.818	4	
CLNO	6.684	4	
YOJ	5.888	3	
MORTDUE	1.832	2	

6. DEBTINC split

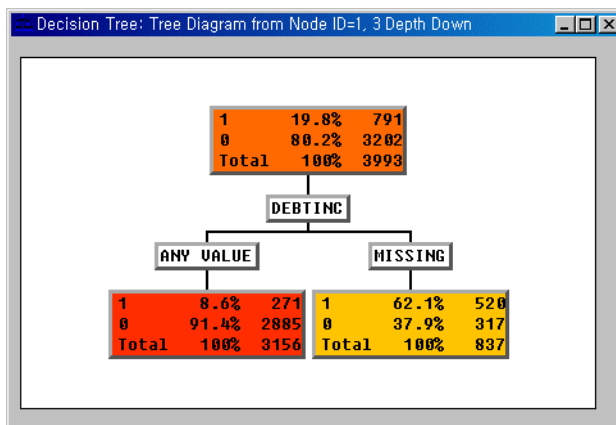
7. Modify Rule . interval variable splitting rule window

8. range 4 Remove range

9. Range 3 2 : split node 1 DEBTINC non-missing
 , node 2 DEBTINC missing .
10. Interval variable splitting Rule OK



11. Input selection apply rule
12. Input Selection Tree Diagram update .



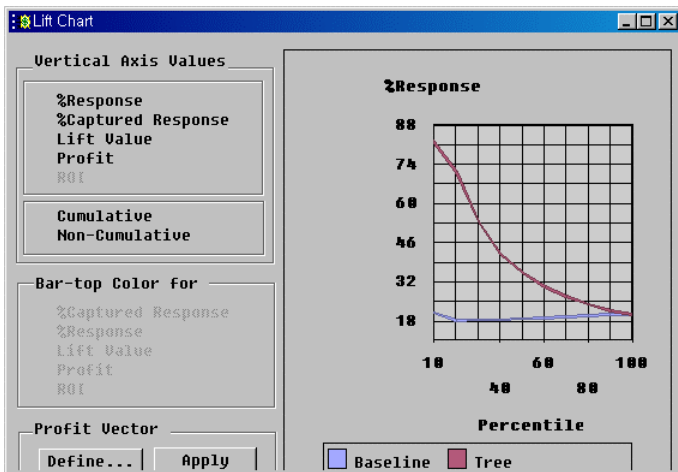
13. Decision Tree-Interactive Training .
14. input for subsequent training yes .
15. decision tree node ,
16. tree 7 node .

optimal threshold : $\frac{1}{1+2} = \frac{1}{3}$

predictive probability 가 0.33

● Assessment node

1. decision tree
2. menu bar Tools→Lift chart

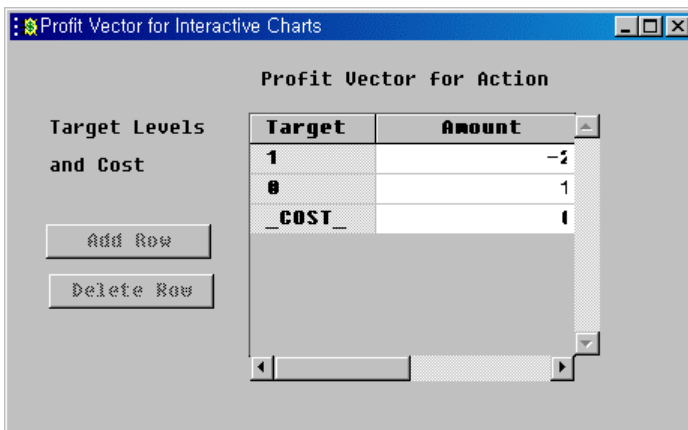


3. profit vector define...

4. Target level 1 -2

5. Target level 0 1

6. Target level cost 0



target level 1 -2

2

, target level 0 1

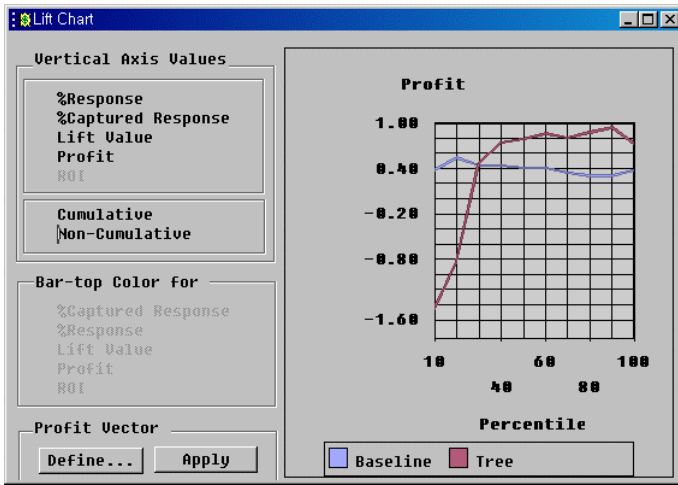
1

7. profit vector definition

8. Apply

9. profit

10. Non-cumulative



plot 20%
가
, 가
20%

1. menu bar format → horizontal scale 2%
2. command line vt tmplift

MODEL ID	MODEL NAME	RECIPE	CUTOFF	ESCORE	EPROFIT	TBL	RECIPE
1	Baseline	Baseline	2	0.062459326	V	-	Baseline
2	Baseline	Baseline	4	0.062459326	V	-	Baseline
3	Baseline	Baseline	6	0.062459326	V	-	Baseline
4	Baseline	Baseline	8	0.062459326	V	-	Baseline
5	Baseline	Baseline	10	0.062459326	V	-	Baseline
6	Baseline	Baseline	12	0.062459326	V	-	Baseline
7	Baseline	Baseline	14	0.062459326	V	-	Baseline
8	Baseline	Baseline	16	0.062459326	V	-	Baseline
9	Baseline	Baseline	18	0.062459326	V	-	Baseline
10	Baseline	Baseline	20	0.062459326	V	-	Baseline
11	Baseline	Baseline	22	0.062459326	V	-	Baseline
12	Baseline	Baseline	24	0.062459326	V	-	Baseline
13	Baseline	Baseline	26	0.062459326	V	-	Baseline
14	Baseline	Baseline	28	0.062459326	V	-	Baseline
15	Baseline	Baseline	30	0.062459326	V	-	Baseline
16	Baseline	Baseline	32	0.062459326	V	-	Baseline
17	Baseline	Baseline	34	0.062459326	V	-	Baseline
18	Baseline	Baseline	36	0.062459326	V	-	Baseline
19	Baseline	Baseline	38	0.062459326	V	-	Baseline
20	Baseline	Baseline	40	0.062459326	V	-	Baseline
21	Baseline	Baseline	42	0.062459326	V	-	Baseline
22	Baseline	Baseline	44	0.062459326	V	-	Baseline
23	Baseline	Baseline	46	0.062459326	V	-	Baseline
24	Baseline	Baseline	48	0.062459326	V	-	Baseline
25	Baseline	Baseline	50	0.062459326	V	-	Baseline

20%
(cutoff value)
0.31
가 0.31

3. TMPLIFT table Assessment node
 4. Score node attach
 5. Score node
 6. Decision tree model decision tree scoring 가
- 가
- score node data
- sas data step