

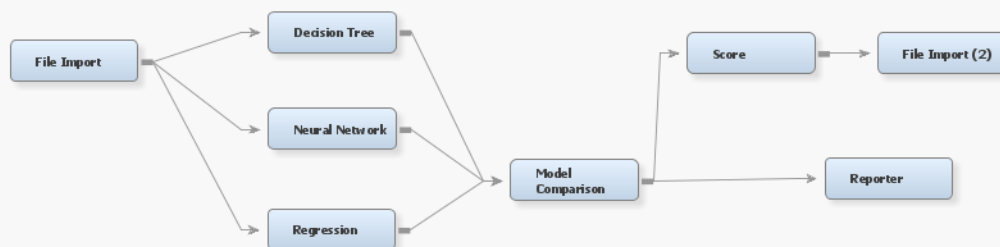
## SAS Enterprise Miner Report

User = bteric01  
Date = 13:25:30 October 27  
Project = Project\_2  
Diagram = Diagram\_1

Start Node = Report  
Node label = Reporter  
Nodes = PATH  
Showall = N

Format = PDF  
Style = LISTING

### SAS Enterprise Miner Report Process Flow Diagram



SAS Enterprise Miner Report

Node=File Import  
Summary

Node id = FIMPORT  
Node label = File Import  
Meta path = FIMPORT  
Notes =

Node=File Import  
Properties

Property	Value	Default	Property	Value	Default	Property	Value	Default
Component	FileImport		GuessRows	500		NameRow	Y	
AccessTable	NoTableName		IFilename	C:\Users\lberic01\Documents\CIS-445\WidgBuyTrain.xlsx		Password	NoPassword	
AdvancedAdvisor	N		ImportType	Local	LOCAL	Role	TRAIN	
Delimiter	,		MaxCols	10000		SkipRows	0	
FileType	xlsx	XLS	MaxRows	1000000		Summarize	N	

Node=File Import  
Data Attributes

Attribute	Value	Attribute	Value	Attribute	Value
Data Name	FIMPORT_DATA	Date Created	27Oct2015:13:08:57	Data Size	66560
Data Type	DATA	Date Modified	27Oct2015:13:08:57	Role	TRAIN
Data Label		Number Rows	20	Segment	
Engine	V9	Number Columns	7	Data Library	EMWS1

Node=File Import  
Variables List

Name	Label	Role	Level	Type	Length	Format	Creator
Age	Age	INPUT	INTERVAL	N	8	BEST.	
Income	Income	INPUT	NOMINAL	C	4	\$4.0	
Residence	Residence	INPUT	NOMINAL	C	3	\$3.0	
WidgBuy	WidgBuy	TARGET	BINARY	C	3	\$3.0	
X2	X2	INPUT	INTERVAL	N	8	BEST.	
X4	X4	INPUT	INTERVAL	N	8	BEST.	
X5	X5	INPUT	INTERVAL	N	8	BEST.	

Node=File Import  
Created Variables List

## SAS Enterprise Miner Report

### Node=Regression Summary

Node id = Reg  
Node label = Regression  
Meta path = FIMPORT => Reg  
Notes =

### Node=Regression Properties

Property	Value	Default	Property	Value	Default	Property	Value	Default
Component	Regression		Force	0		PolynomialDegree	2	
AbsConvValue	-1.34078E154	-7.237006E75	GConvTimes	1		PrintDesignMatrix	N	
AbsFTime	1		GConvValue	1E-6		Rule	NONE	
AbsFValue	0		Hierarchy	CLASS		SASSPDS	N	
AbsGTime	1		InputCoding	DEVIATION		SelectionCriterion	DEFAULT	
AbsGValue	0.00001		Interactions			SelectionDefault	Y	
AbsXTime	1		LinkFunction	LOGIT		Sequential	N	
AbsXValue	1E-8		MainEffect	Y		Simple	N	
CIParam	N		MaxCPUTime	1 HOUR		SIEntry	0.05	
ConvDefaults	Y		MaxFunctionCalls	.		SIStay	0.05	
CorB	N		MaxIterations	.		Start	0	
CovB	N		MaxStep	.		StepOutput	N	
Covout	N		MinResourceUse	N		Stop	0	
Details	N		ModelDefaults	Y		SuppressIntercept	N	
Error	LOGISTIC		ModelSelection	NONE		SuppressOutput	N	
ExcludedVariable	REJECT		OptimizationTechnique	DEFAULT		Terms	N	
FConvTimes	1		Performance	N		TwoFactor	N	
FConvValue	0		Polynomial	N				

### Node=Regression Variable Summary

Role	Level	Frequency Count	Name
TARGET	BINARY	1	WidgBuy
INPUT	INTERVAL	4	Age X2 X4 X5
INPUT	NOMINAL	2	Income Residence

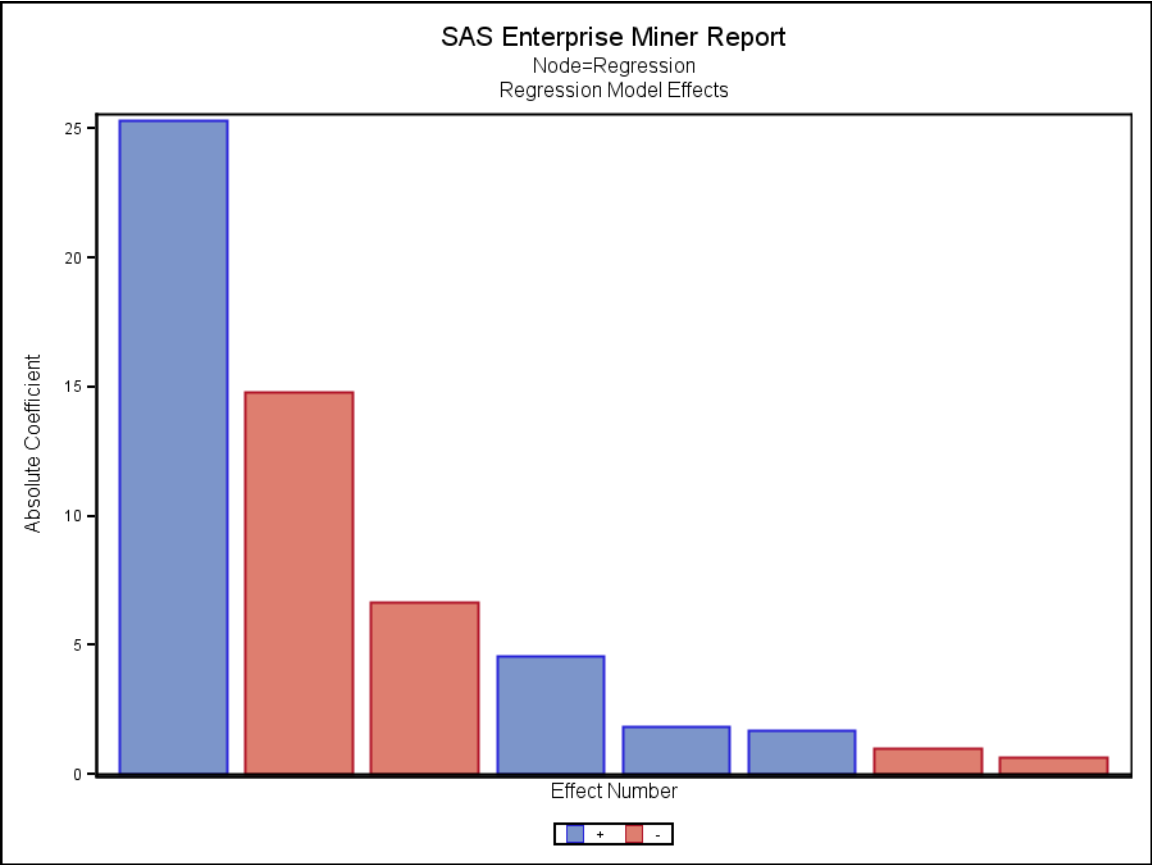
### Node=Regression Model Fit Statistics

Target=WidgBuy Target Label=WidgBuy

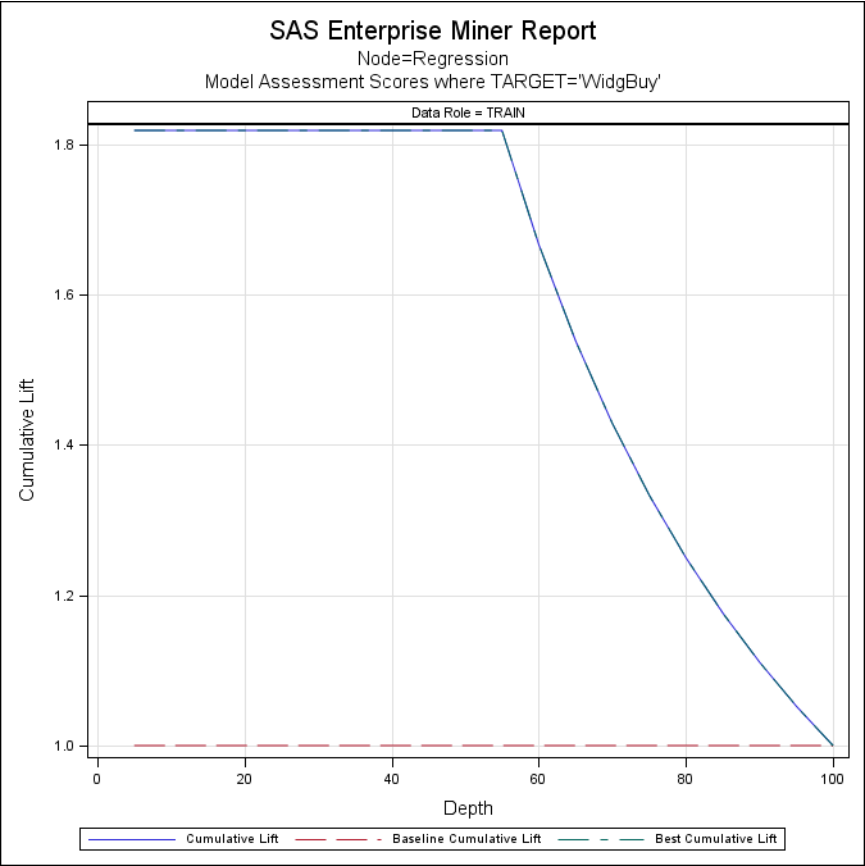
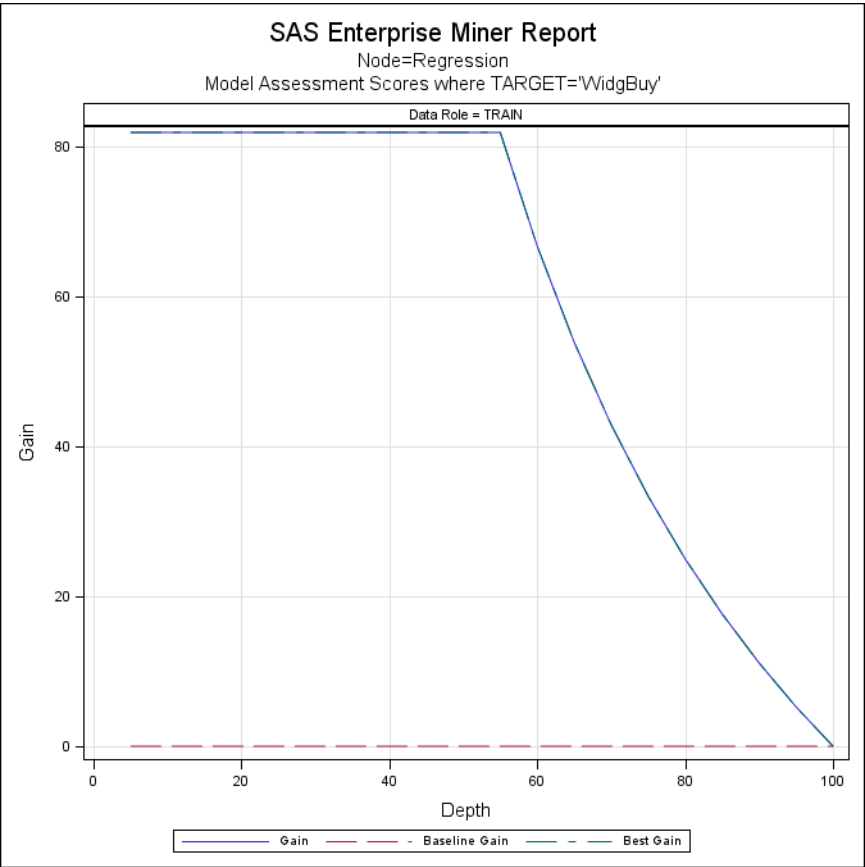
Label of Statistic	Train	Validation	Test
Akaike's Information Criterion	16.0123	.	.
Average Squared Error	0.0000	.	.
Average Error Function	0.0003	.	.
Degrees of Freedom for Error	12.0000	.	.
Model Degrees of Freedom	8.0000	.	.
Total Degrees of Freedom	20.0000	.	.
Divisor for ASE	40.0000	.	.
Error Function	0.0123	.	.
Final Prediction Error	0.0000	.	.
Maximum Absolute Error	0.0013	.	.

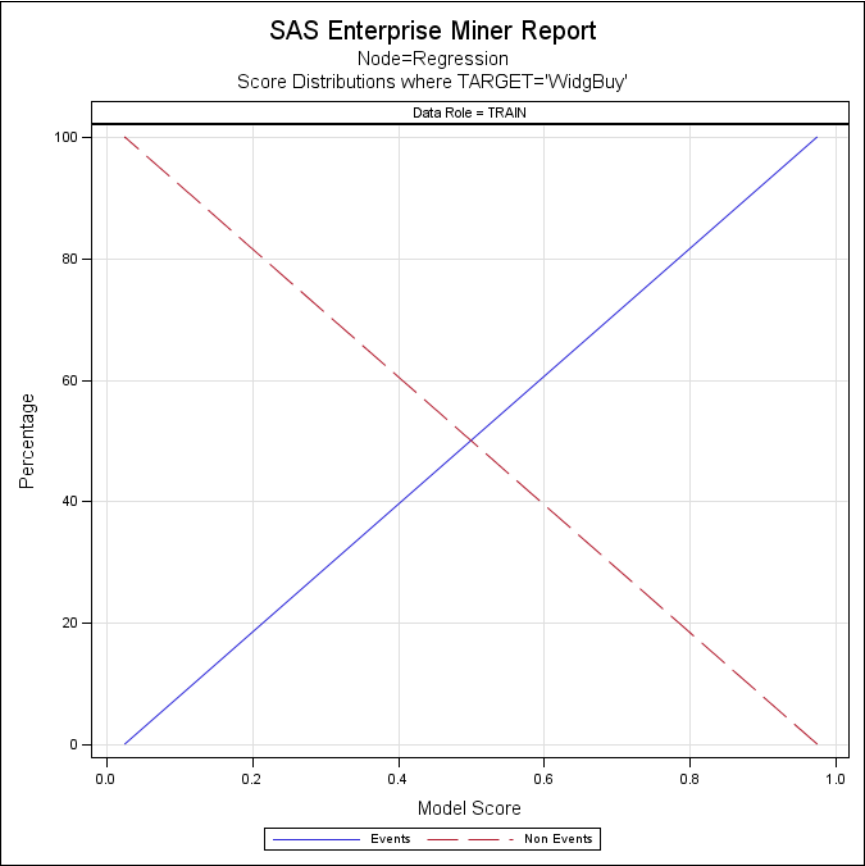
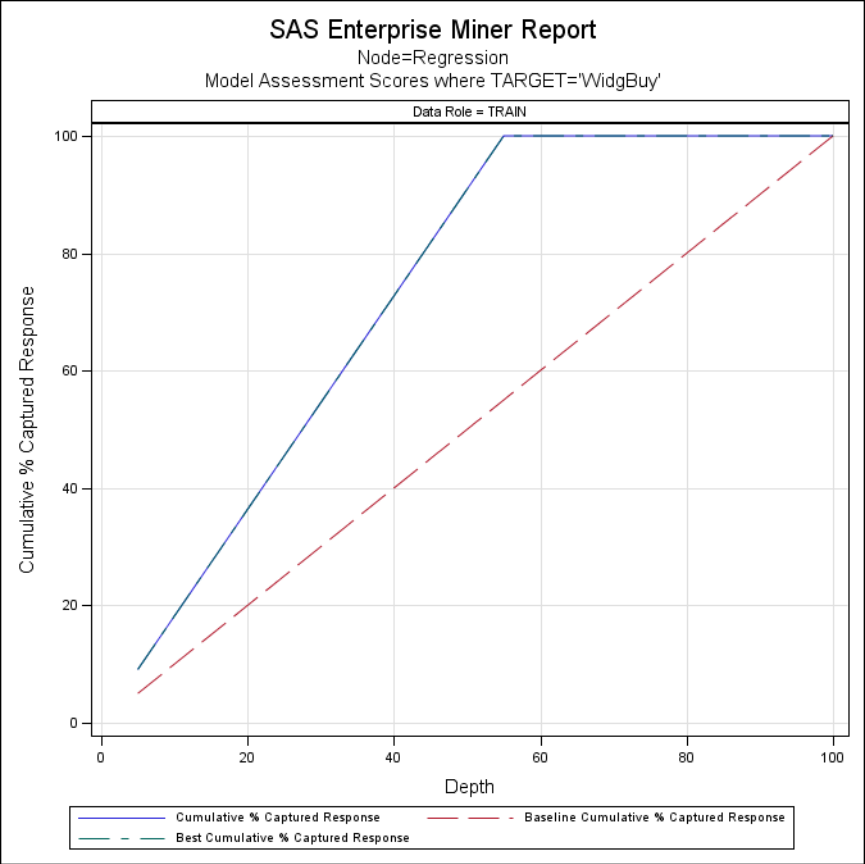
Target=WdgBuy Target Label=WdgBuy

Label of Statistic	Train	Validation	Test
Mean Square Error	0.0000	.	.
Sum of Frequencies	20.0000	.	.
Number of Estimate Weights	8.0000	.	.
Root Average Sum of Squares	0.0005	.	.
Root Final Prediction Error	0.0008	.	.
Root Mean Squared Error	0.0007	.	.
Schwarz's Bayesian Criterion	23.9781	.	.
Sum of Squared Errors	0.0000	.	.
Sum of Case Weights Times Freq	40.0000	.	.
Misclassification Rate	0.0000	.	.

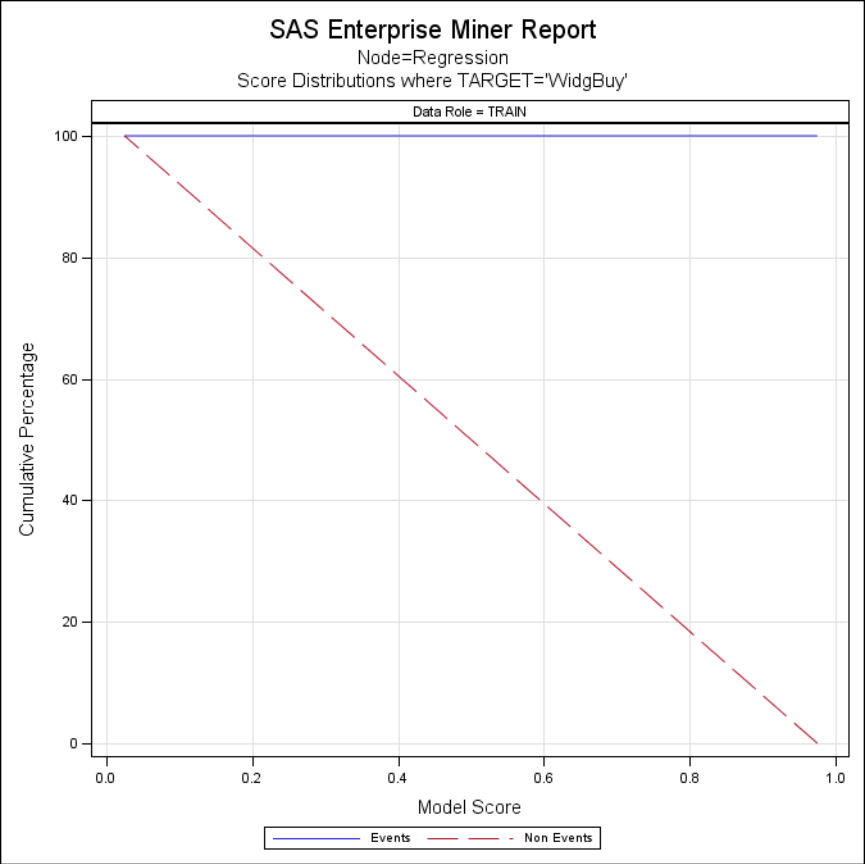


Effect Number	Variable	Level	Coefficient	T-value	P Value	Effect Number	Variable	Level	Coefficient	T-value	P Value
1	Intercept	YES	25.3156	0.16328	0.87030	5	Residence	LA	1.85572	0.04329	0.96547
2	Residence	CHI	-14.7970	-0.29893	0.76499	6	X4		1.66886	0.01638	0.98693
3	Income	HIGH	-6.6741	-0.25573	0.79816	7	Age		-0.97247	-0.16754	0.86694
4	X2		4.5656	0.11708	0.90680	8	X5		-0.65338	-0.06078	0.95154





SAS Enterprise Miner Report  
Node=Regression  
Score Distributions where TARGET='WidgBuy'



Node=Regression  
Score Distributions

Target Variable=WidgBuy Data Role=TRAIN

Posterior Probability Range	Number of Events	Percentage of Events	Percentage of Nonevents	Cumulative Percentage of Events	Cumulative Percentage of Nonevents
0.95-1.00	11	100	0	100	0
0.00-0.05	0	0	100	100	100

SAS Enterprise Miner Report

Node=Neural Network  
Summary

Node id = Neural  
Node label = Neural Network  
Meta path = FIMPORT => Neural  
Notes =

Node=Neural Network  
Properties

Property	Value	Default	Property	Value	Default	Property	Value	Default
Component	NeuralNetwork		Hidden	1	3	Prelim	Y	
AbsConvValue	-1.34078E154	-7.237006E75	HiddenActivation	DEFAULT		PrelimMaxTime	1 HOUR	
AbsFTime	1		HiddenBias	Y		PrelimMaxiter	10	
AbsFValue	0		HiddenCombFunction	DEFAULT		PrelimOutest		
AbsGTime	1		HiddenUnits	N		PreliminaryRuns	5	
AbsGValue	0.00001		InitialDs			RandDist	NORMAL	
AbsXTime	1		InitialSeed	12345		RandLoc	0	
AbsXVValue	1E-8		InputStandardization	STD		RandScale	0.1	
Accelerate	1.2		Learn	0.1		Residuals	Y	
AddHidden	Y		MaxLearn	50		Standardizations	N	
CodefileNoRes			MaxMomentum	1.75		SuppressOutput	N	
CodefileRes			Maxiter	50		TargetActivation	DEFAULT	
ConvDefaults	Y		Maxtime	4 HOURS		TargetBias	Y	
Decelerate	0.5		MinLearn	0.00001		TargetCombFunction	DEFAULT	
DirectConnection	N		ModelSelectionCriterion	PROFIT/LOSS		TargetError	DEFAULT	
FConvTime	1		Momentum	0		Tilt	0	
FConvValue	0		NetworkArchitecture	MLP		TrainCode		
GConvTime	1		Outest			TrainingTechnique	DEFAULT	
GConvValue	1E-6		Outfit			UseEstimates	N	

Node=Neural Network  
Variable Summary

Role	Level	Frequency Count	Name
TARGET	BINARY	1	WidgBuy
INPUT	INTERVAL	4	Age X2 X4 X5
INPUT	NOMINAL	2	Income Residence

Node=Neural Network  
Model Fit Statistics

Target=WidgBuy Target Label=WidgBuy

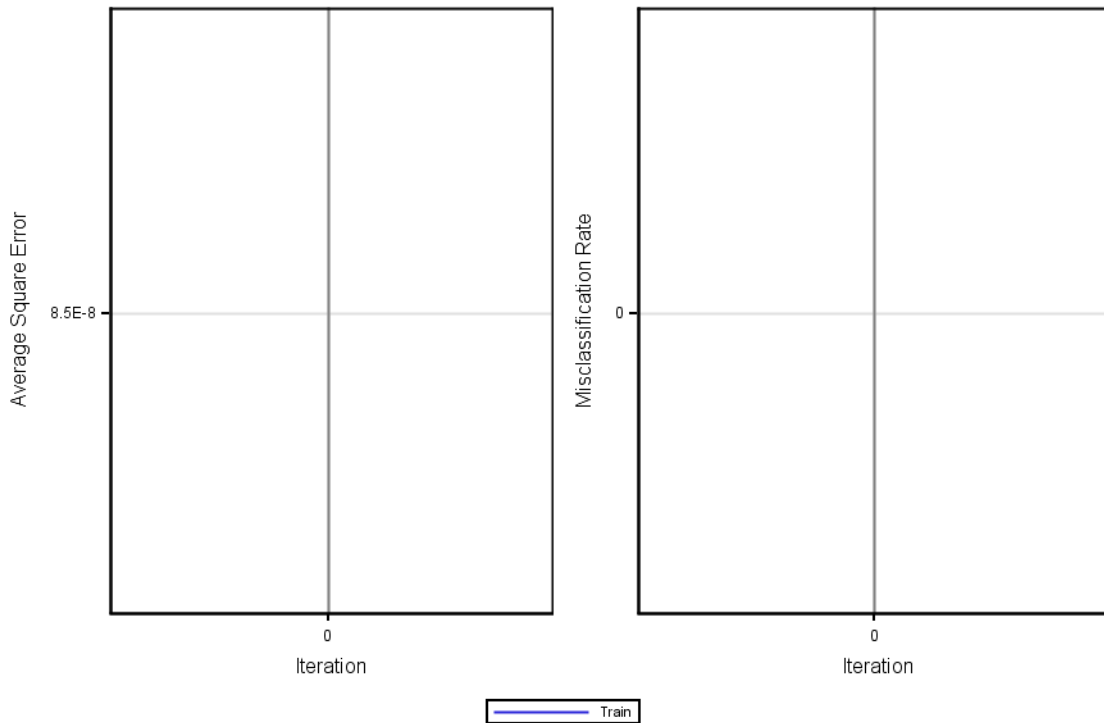
Label of Statistic	Train	Validation	Test
Total Degrees of Freedom	20.0000	.	.
Degrees of Freedom for Error	10.0000	.	.
Model Degrees of Freedom	10.0000	.	.
Number of Estimated Weights	10.0000	.	.
Akaike's Information Criterion	20.0107	.	.
Schwarz's Bayesian Criterion	29.9680	.	.
Average Squared Error	0.0000	.	.
Maximum Absolute Error	0.0005	.	.
Divisor for ASE	40.0000	.	.

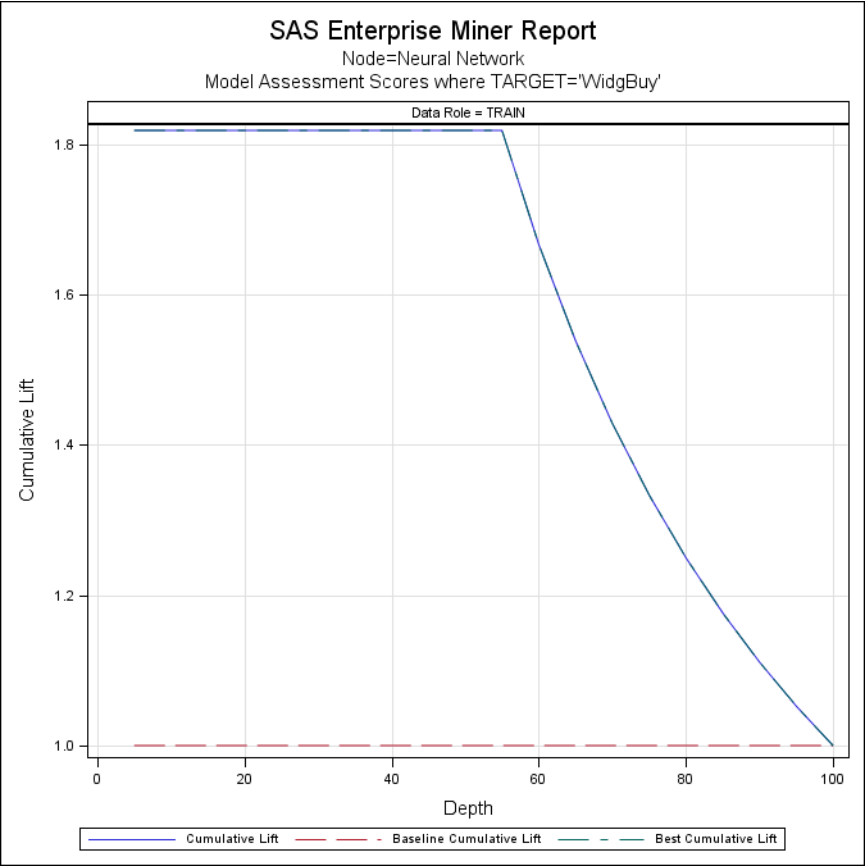
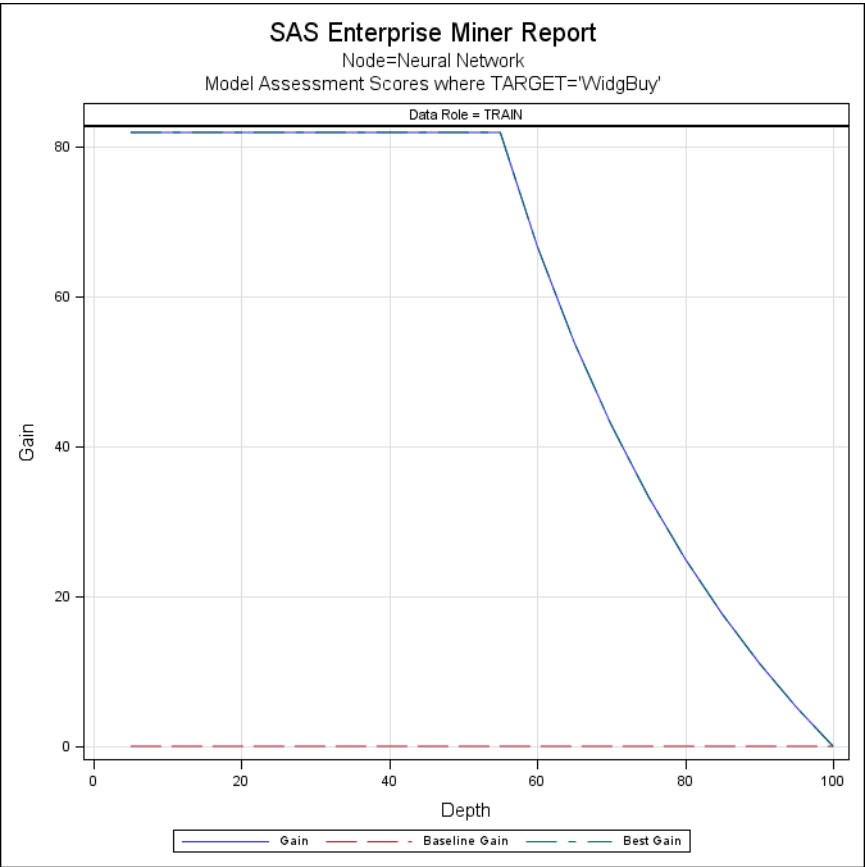


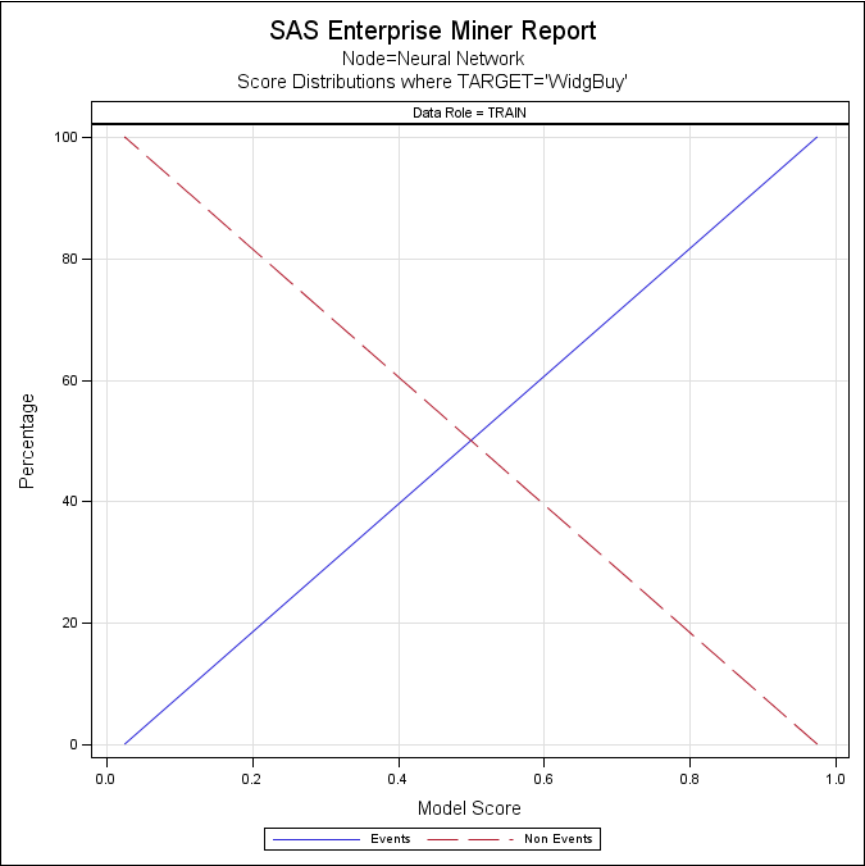
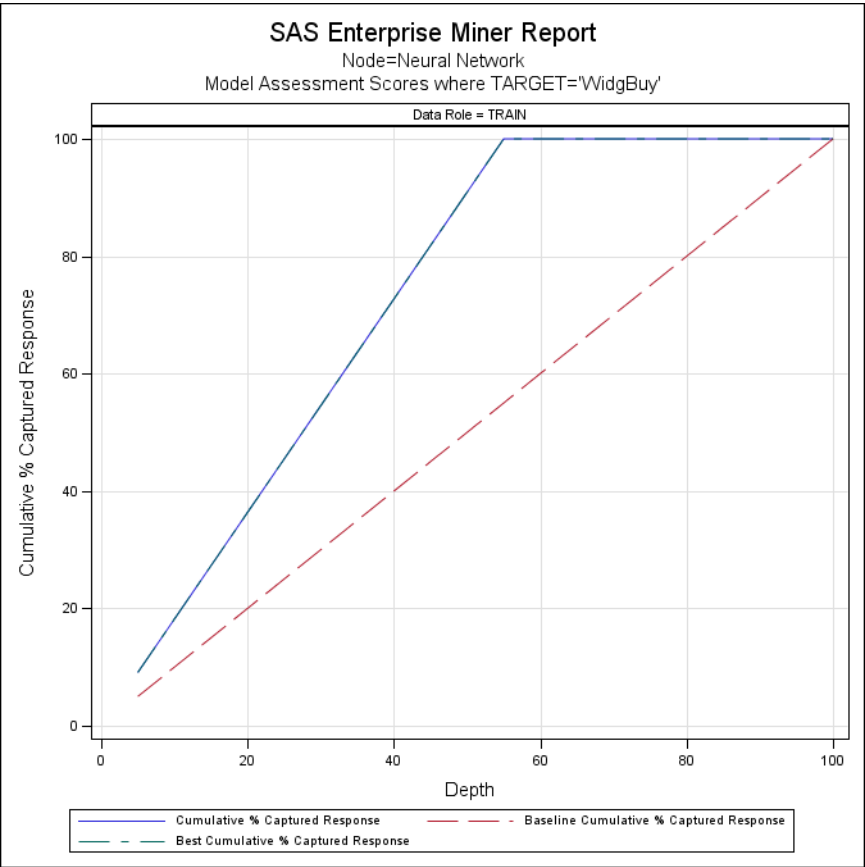
Target=WdgBuy Target Label=WdgBuy

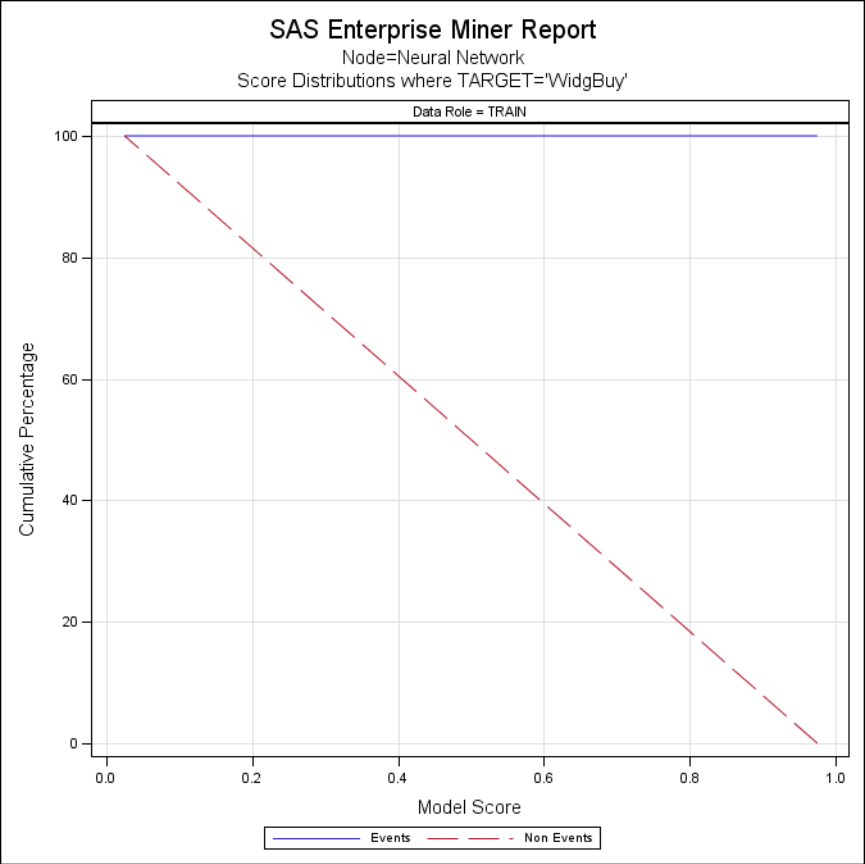
Label of Statistic	Train	Validation	Test
Sum of Frequencies	20.0000	.	.
Root Average Squared Error	0.0003	.	.
Sum of Squared Errors	0.0000	.	.
Sum of Case Weights Times Freq	40.0000	.	.
Final Prediction Error	0.0000	.	.
Mean Squared Error	0.0000	.	.
Root Final Prediction Error	0.0005	.	.
Root Mean Squared Error	0.0004	.	.
Average Error Function	0.0003	.	.
Error Function	0.0107	.	.
Misclassification Rate	0.0000	.	.
Number of Wrong Classifications	0.0000	.	.

SAS Enterprise Miner Report  
Node=Neural Network  
Model Iteration Plots









Node=Neural Network  
Score Distributions

Target Variable=WidgBuy Data Role=TRAIN

Posterior Probability Range	Number of Events	Percentage of Events	Percentage of Nonevents	Cumulative Percentage of Events	Cumulative Percentage of Nonevents
0.95-1.00	11	100	0	100	0
0.00-0.05	0	0	100	100	100

## SAS Enterprise Miner Report

### Node=Decision Tree Summary

Node id = Tree  
Node label = Decision Tree  
Meta path = FIMPORT => Tree  
Notes =

### Node=Decision Tree Properties

Property	Value	Default	Property	Value	Default	Property	Value	Default
Component	DecisionTree		Kass	Y		Pred	N	
AVG	Y		KassApply	BEFORE		Predict	Y	
AssessMeasure	PROFIT/LOSS		LeafSize	5		ProfitLoss	NONE	
AssessPercentage	0.25		Leafid	Y		RASE	N	
CV	N		Maxbranch	2		SampleMethod	RANDOM	
CVNIter	10		Maxdepth	6		SampleSeed	12345	
CVRepeat	1		MinCatSize	5		SampleSize	10000	
CVSeed	12345		MissingValue	USEINSEARCH		ShowNodeid	Y	
ClassColorBy	PERCENTCORRECT		NSubtree	1		ShowValid	Y	
Count	Y		NodeRole	SEGMENT		SigLevel	0.2	
CreateSample	DEFAULT		NodeSample	20000		SplitPrecision	4	
Criterion	DEFAULT		NominalCriterion	ENTROPY	PROBCHISQ	Splitsize	.	
Depth	Y		Nrules	5		Subtree	ASSESSMENT	
Dummy	N		Nsurrs	0		Target	ALL	
Exhaustive	5000		NumInputs	1		ToolType	MODEL	
Freeze	N		NumSingleImp	5		TrainMode	BATCH	
ImportModel	N		ObsImportance	N		UseDecision	N	
ImportedTreeData			OrdinalCriterion	ENTROPY		UseMultipleTarget	N	
Inputs	N		PercentCorrect	N		UsePriors	N	
IntColorBy	AVG		Performance	DISK		UseVarOnce	N	
IntervalCriterion	PROBF		Precision	4		VarSelection	Y	

### Node=Decision Tree Variable Summary

Role	Level	Frequency Count	Name
TARGET	BINARY	1	WidgBuy
INPUT	INTERVAL	4	Age X2 X4 X5
INPUT	NOMINAL	2	Income Residence

### Node=Decision Tree Model Fit Statistics

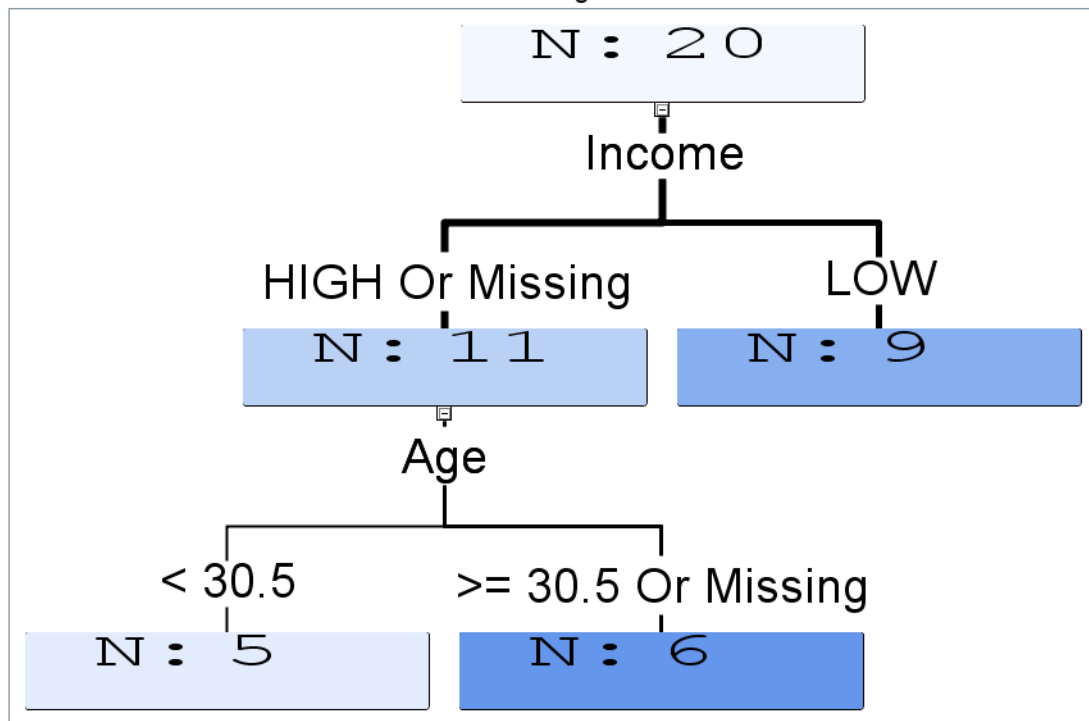
Target=WidgBuy Target Label=WidgBuy

Label of Statistic	Train	Validation	Test
Sum of Frequencies	20.0000	.	.
Misclassification Rate	0.1500	.	.
Maximum Absolute Error	0.8889	.	.
Sum of Squared Errors	4.1778	.	.
Average Squared Error	0.1044	.	.
Root Average Squared Error	0.3232	.	.

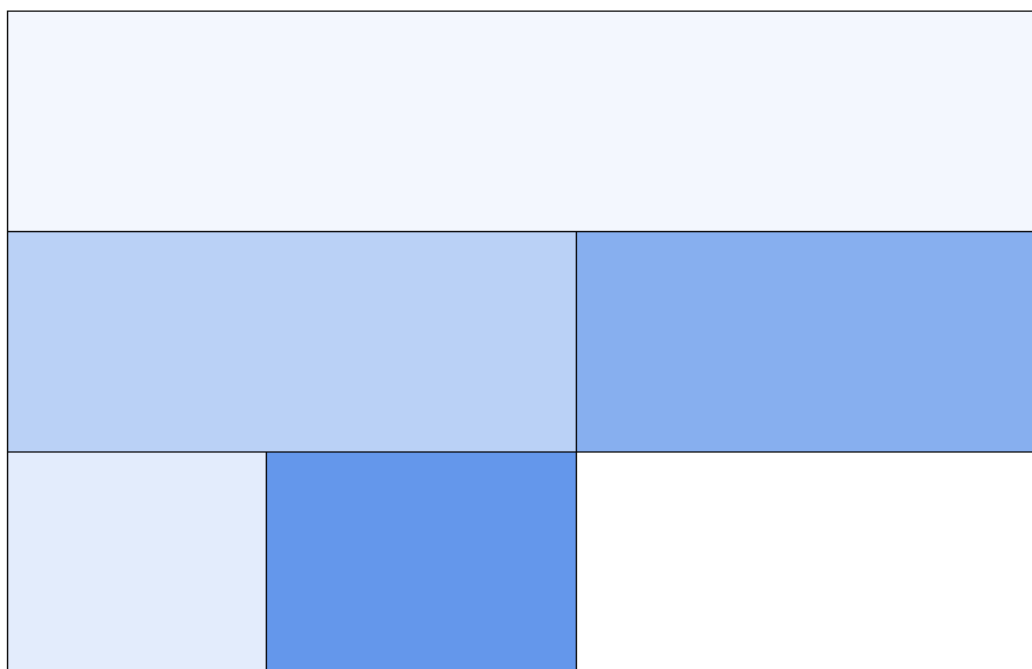
Target=WdgBuy Target Label=WdgBuy

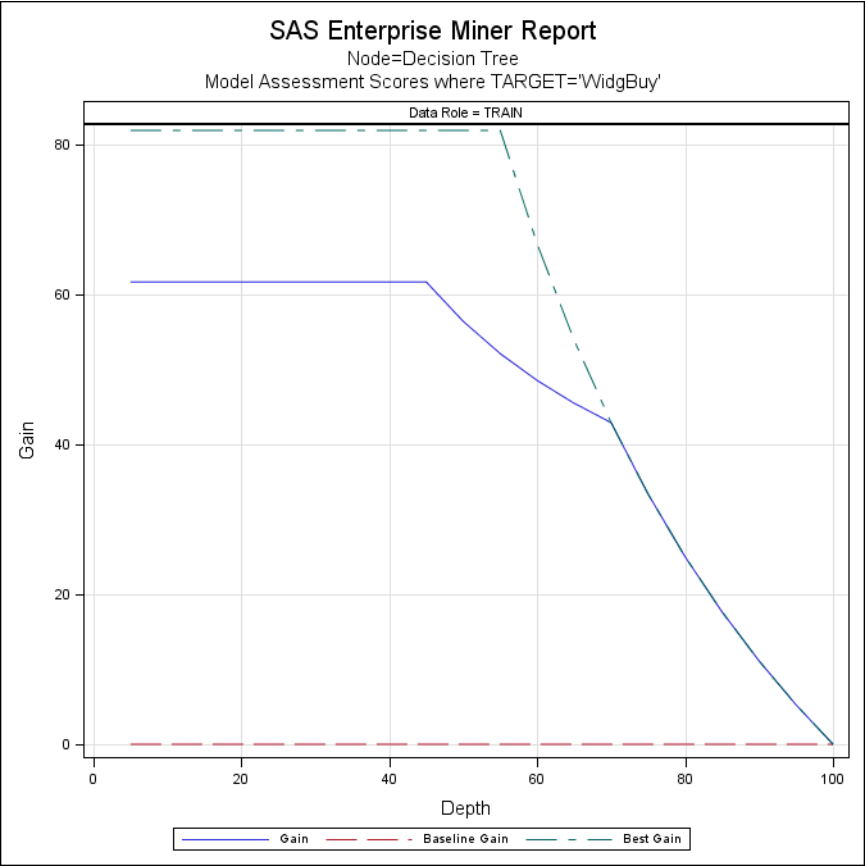
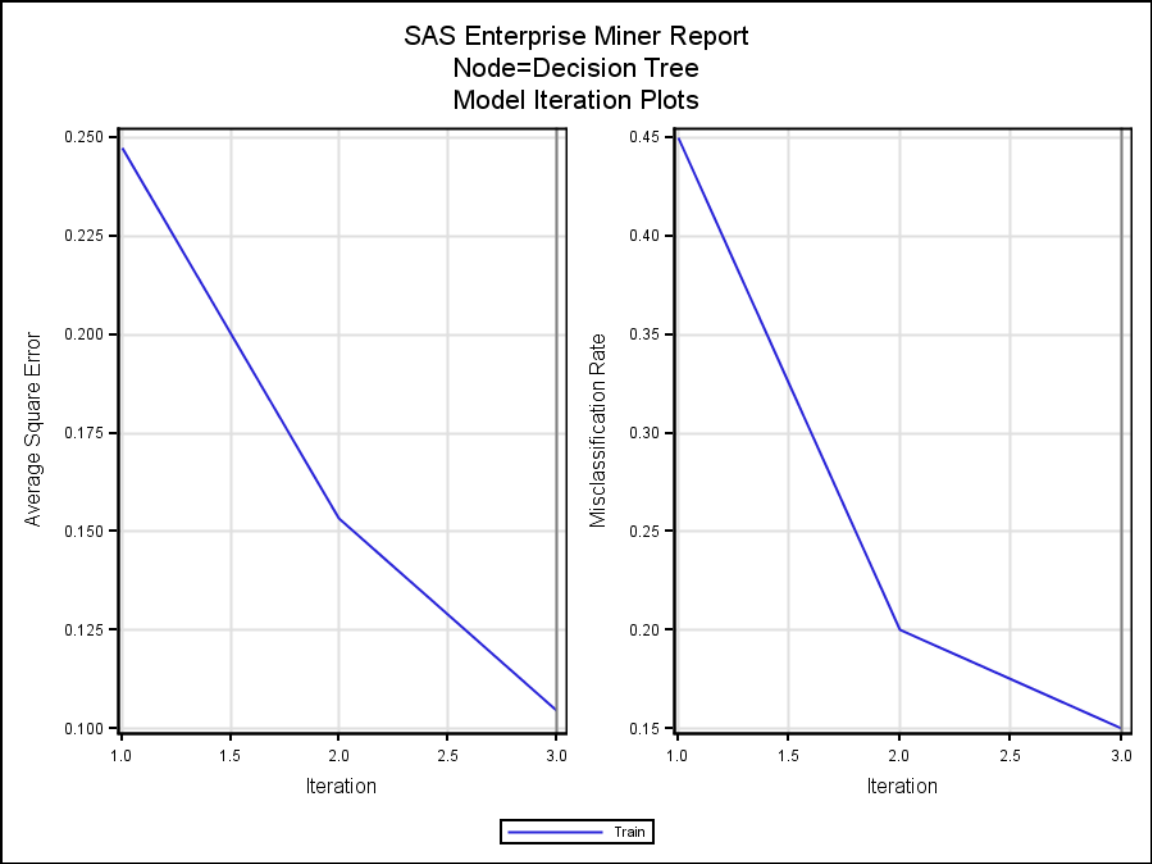
Label of Statistic	Train	Validation	Test
Divisor for ASE	40.0000	.	.
Total Degrees of Freedom	20.0000	.	.

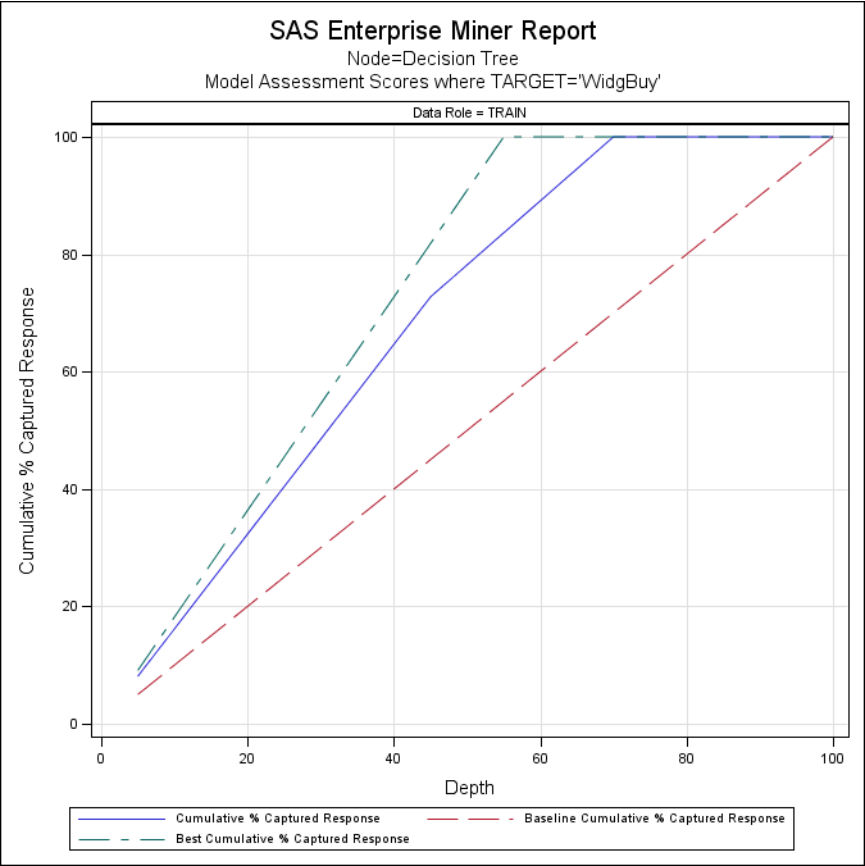
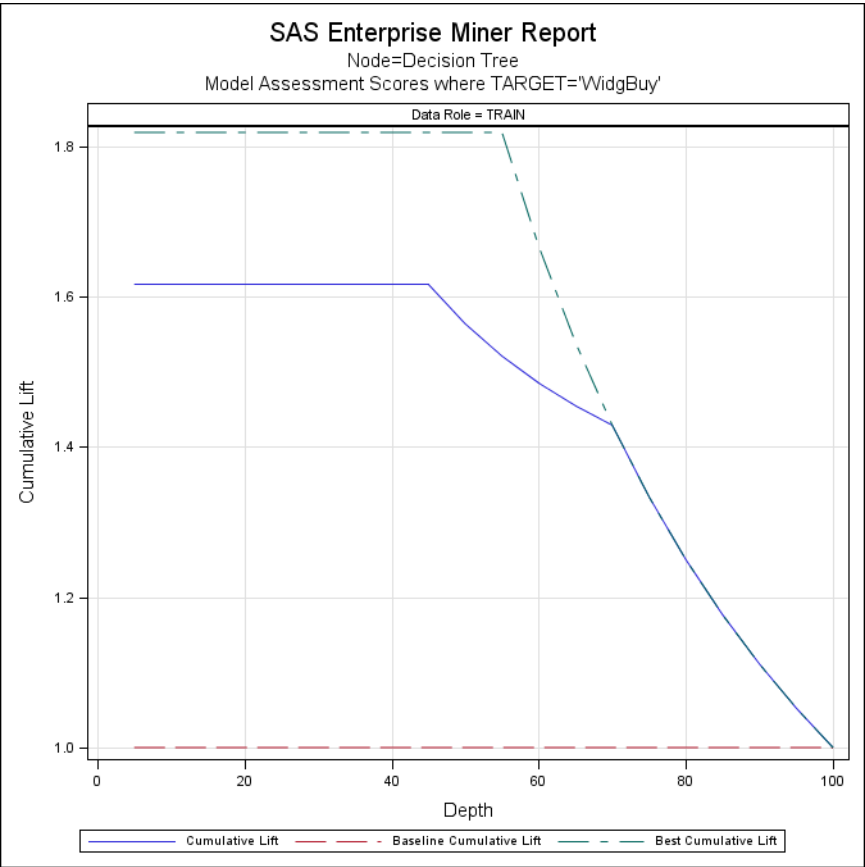
SAS Enterprise Miner Report  
Node=Decision Tree  
Tree Diagram



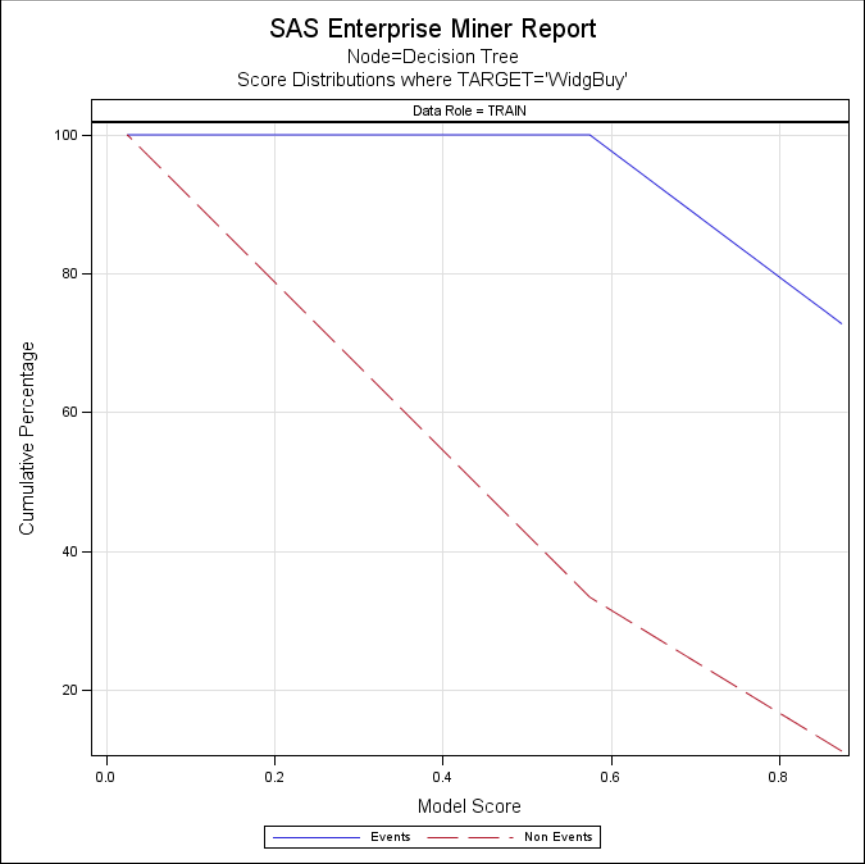
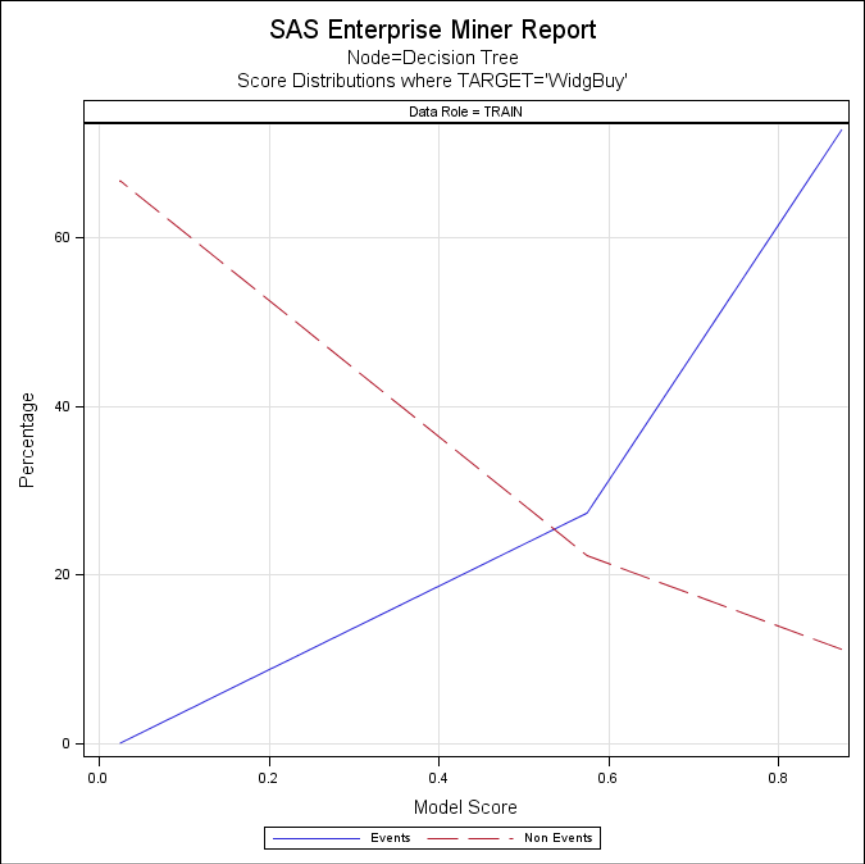
SAS Enterprise Miner Report  
Node=Decision Tree  
Tree Map











Target Variable=WidgBuy Data Role=TRAIN

Posterior Probability Range	Number of Events	Percentage of Events	Percentage of Nonevents	Cumulative Percentage of Events	Cumulative Percentage of Nonevents
0.85-0.90	8	72.7273	11.1111	72.727	11.111
0.55-0.60	3	27.2727	22.2222	100.000	33.333
0.00-0.05	0	0.0000	66.6667	100.000	100.000

SAS Enterprise Miner Report

Node=Model Comparison  
Summary

Node id = MdlComp  
Node label = Model Comparison  
Meta path = FIMPORT => Neural => MdlComp  
Notes =

Node=Model Comparison  
Properties

Property	Value	Default	Property	Value	Default	Property	Value	Default
Component	ModelCompare		NormalizeReportingVariables	Y		ScoreDistBin	20	
AssessAllTargetLevels	N		NumberOfReportedLevels	1E-6		SelectionCriteria	DEFAULT	
DecileBin	20		NumberofBins	20		SelectionData	DEFAULT	
HPCriteria	DEFAULT		ProfitEpsilon	1E-6		SelectionDepth	10	
LiftEpsilon	1E-6		RecomputeAssess	N		SelectionTable	TRAIN	TABLE
ModelCriteria	Train: Misclassification Rate		RocChart	Y		StatisticUsed	_MISC_	
ModelDescription	Neural Network		RocEpsilon	0.01		TargetLabel	WidgBuy	
ModelId	Neural		RoiEpsilon	1E-6		TargetName	WidgBuy	

Node=Model Comparison  
Variable Summary

Role	Level	Frequency Count	Name
TARGET	BINARY	1	WidgBuy

Node=Model Comparison  
Fit Statistics Table

Selected Model	Predecessor Node	Model Node	Model Description	Target Variable	Target Label	Selection Criterion: Train: Misclassification Rate	Train: Average Squared Error	Train: Misclassification Rate	Train: Kolmogorov-Smirnov Statistic	Train: Roc Index	Train: Gini Coefficient
Y	Neural	Neural	Neural Network	WidgBuy	WidgBuy	0.00	0.00000	0.00	1.000	1.000	1.000
	Reg	Reg	Regression	WidgBuy	WidgBuy	0.00	0.00000	0.00	1.000	1.000	1.000
	Tree	Tree	Decision Tree	WidgBuy	WidgBuy	0.15	0.10444	0.15	0.667	0.899	0.798

