

MLFA Assignment 4 - REPORT

Name : Shiva Ganesh Reddy Lakkasani
Roll Number : 20EE10069

DATA SET INFORMATION :

X_train :

	Price_Buying	Price_Maintenance	Doors	Persons	Lug_boot	Safety
0	3	3	0	0	0	1
1	3	3	0	0	0	2
2	3	3	0	0	1	0
3	3	3	0	0	1	1
4	3	3	0	0	1	2
...
1722	0	0	3	2	1	1
1723	0	0	3	2	1	2
1724	0	0	3	2	2	0
1725	0	0	3	2	2	1
1726	0	0	3	2	2	2

y_train :

[1727 rows x 6 columns]

0	0
1	0
2	0
3	0
4	0
..	
1722	2
1723	3
1724	0
1725	2
1726	3

Name: Acceptability, Length: 1727, dtype: int64

<class 'pandas.core.frame.DataFrame'>

RangeIndex: 1727 entries, 0 to 1726

Data columns (total 7 columns):

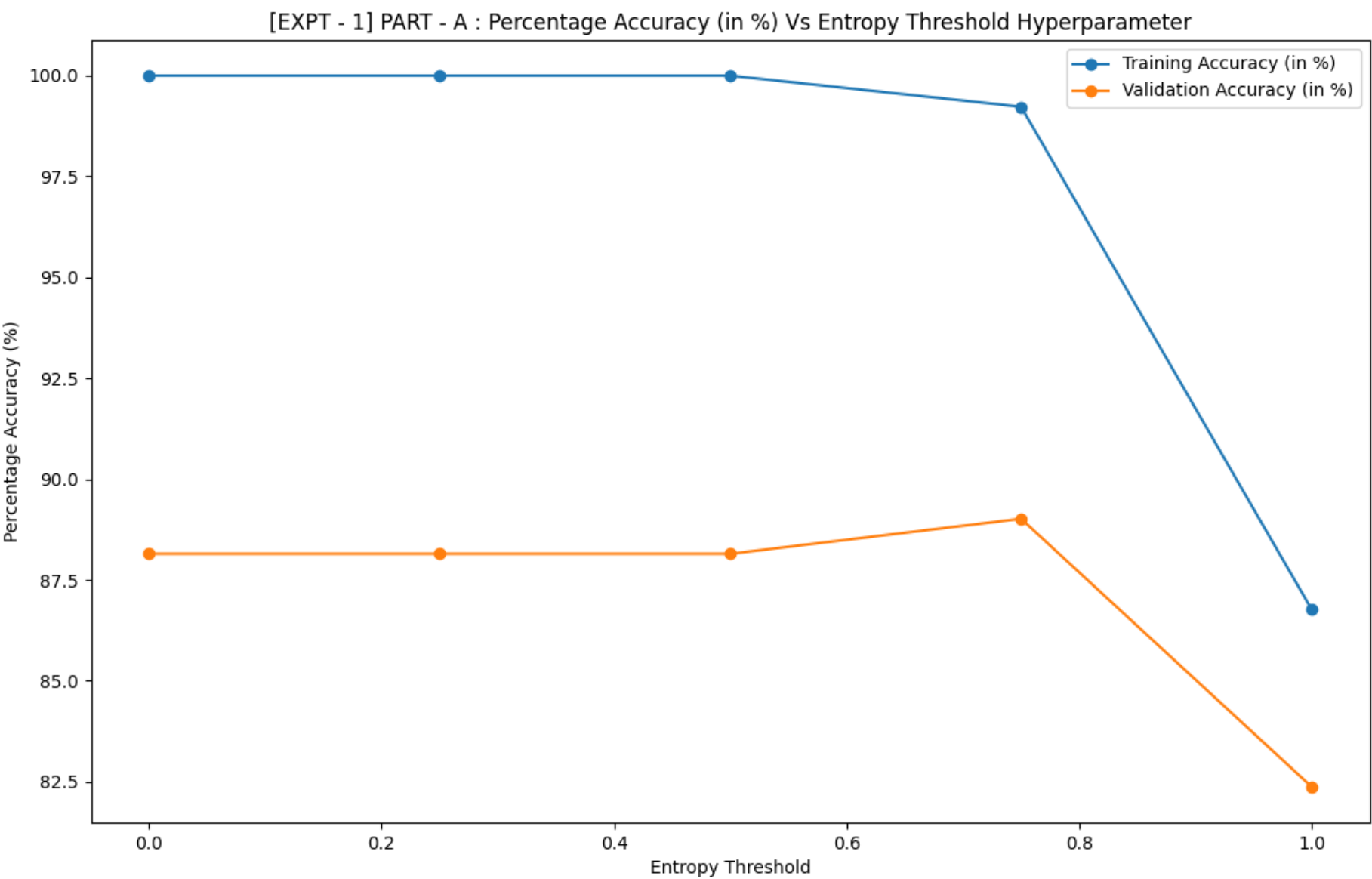
#	Column	Non-Null Count	Dtype
0	Price_Buying	1727 non-null	int64
1	Price_Maintenance	1727 non-null	int64
2	Doors	1727 non-null	int64
3	Persons	1727 non-null	int64
4	Lug_boot	1727 non-null	int64

5 Safety 1727 non-null int64
6 Acceptability 1727 non-null int64
dtypes: int64(7)
memory usage: 94.6 KB
None
Training dataset: (1035, 6) (1035,)
Validation dataset: (346, 6) (346,)
Testing dataset: (346, 6) (346,)

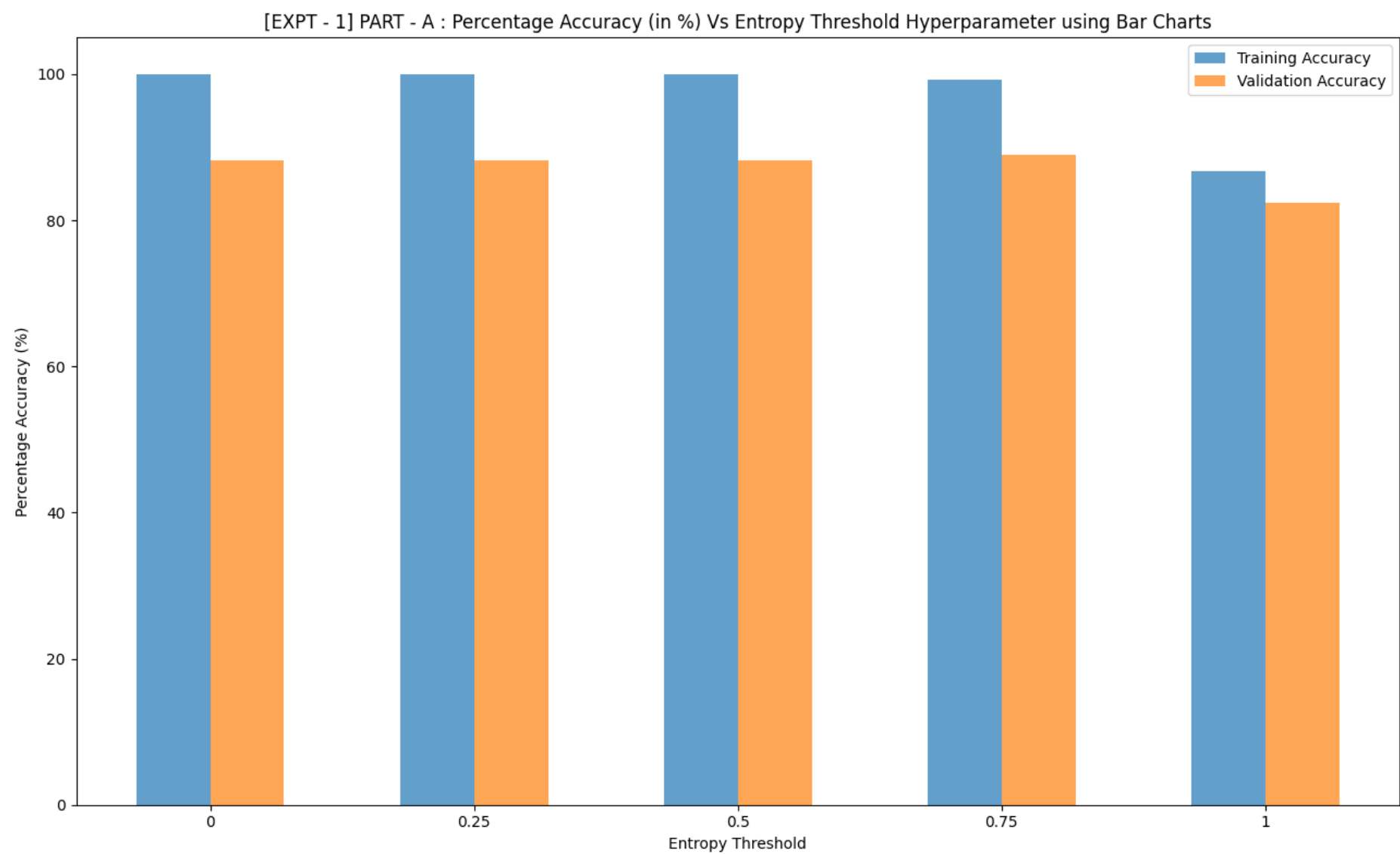
EXPERIMENT - 1:

PART - A :

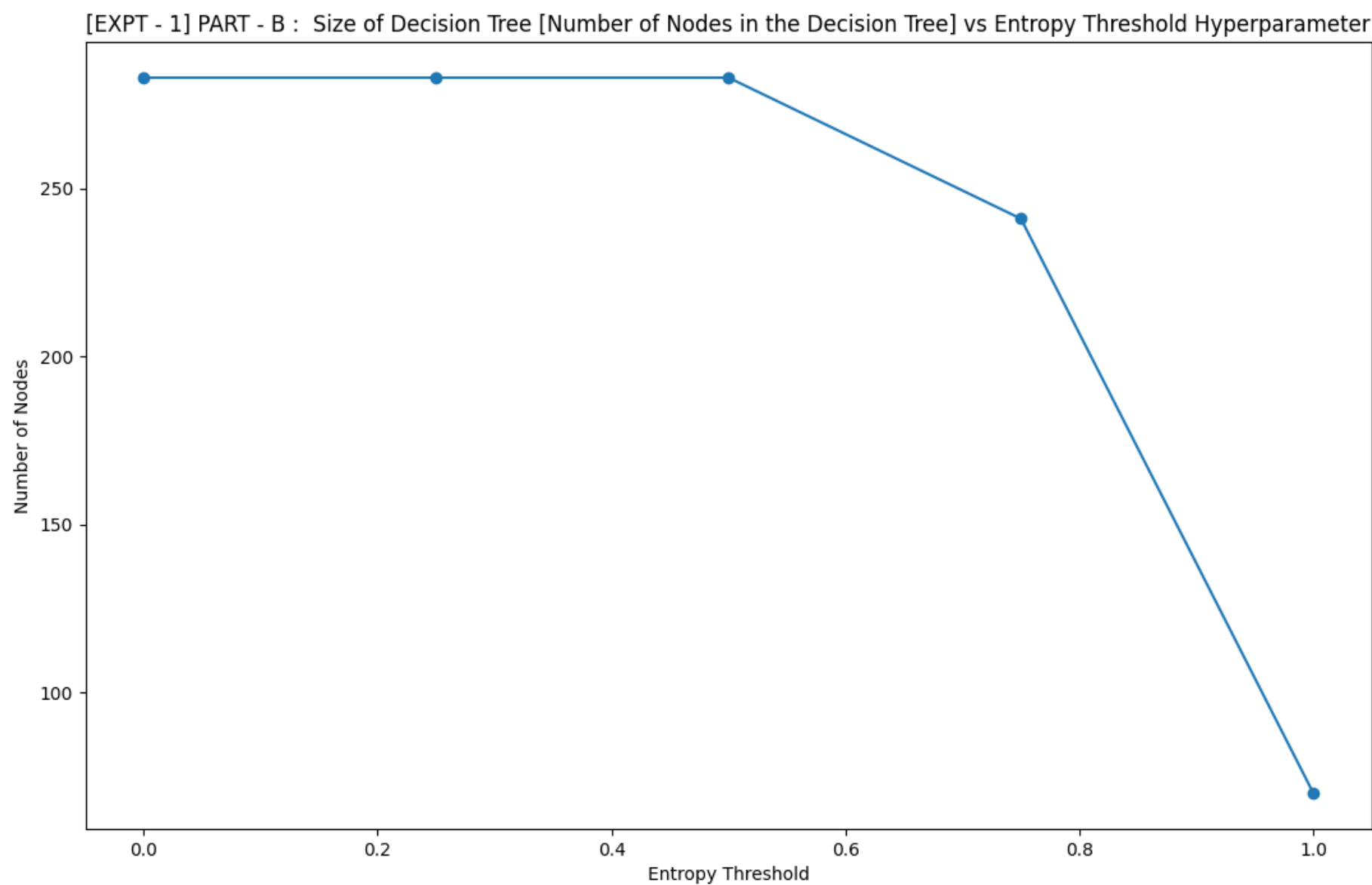
1. Percentage Accuracy (in %) Vs Entropy Threshold
Hyperparameter :



2. Bar-chart showing Percentage Accuracy Vs Entropy Threshold Hyperparameter (on training and validation data) :



PART - B :
Size of Decision Tree [Number of Nodes in the Decision Tree] vs Entropy Threshold Hyperparameter :



[EXPT - 1] Best entropy threshold based on Validation accuracy : 0.75

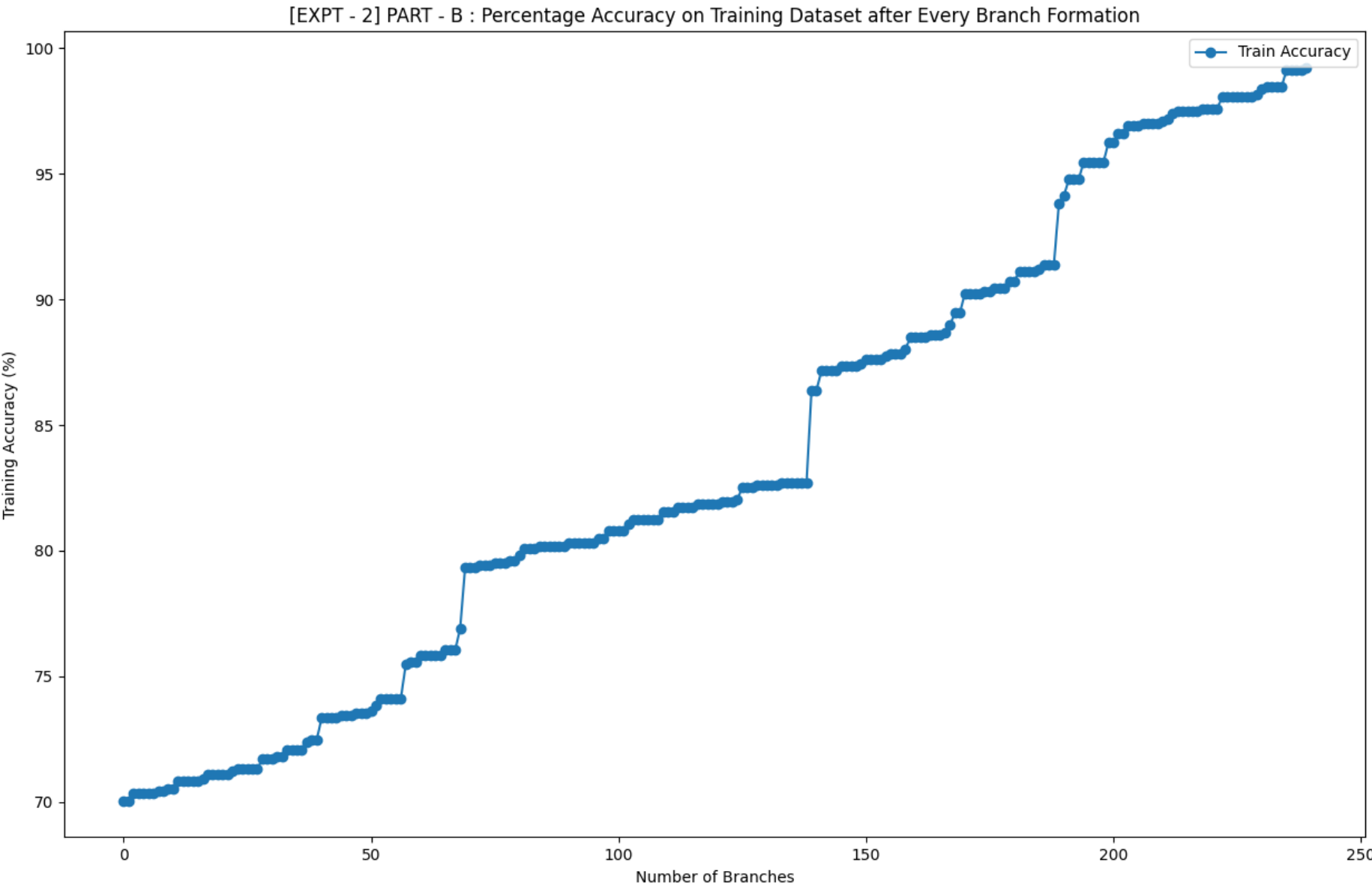
EXPERIMENT - 2 :

PART - A :

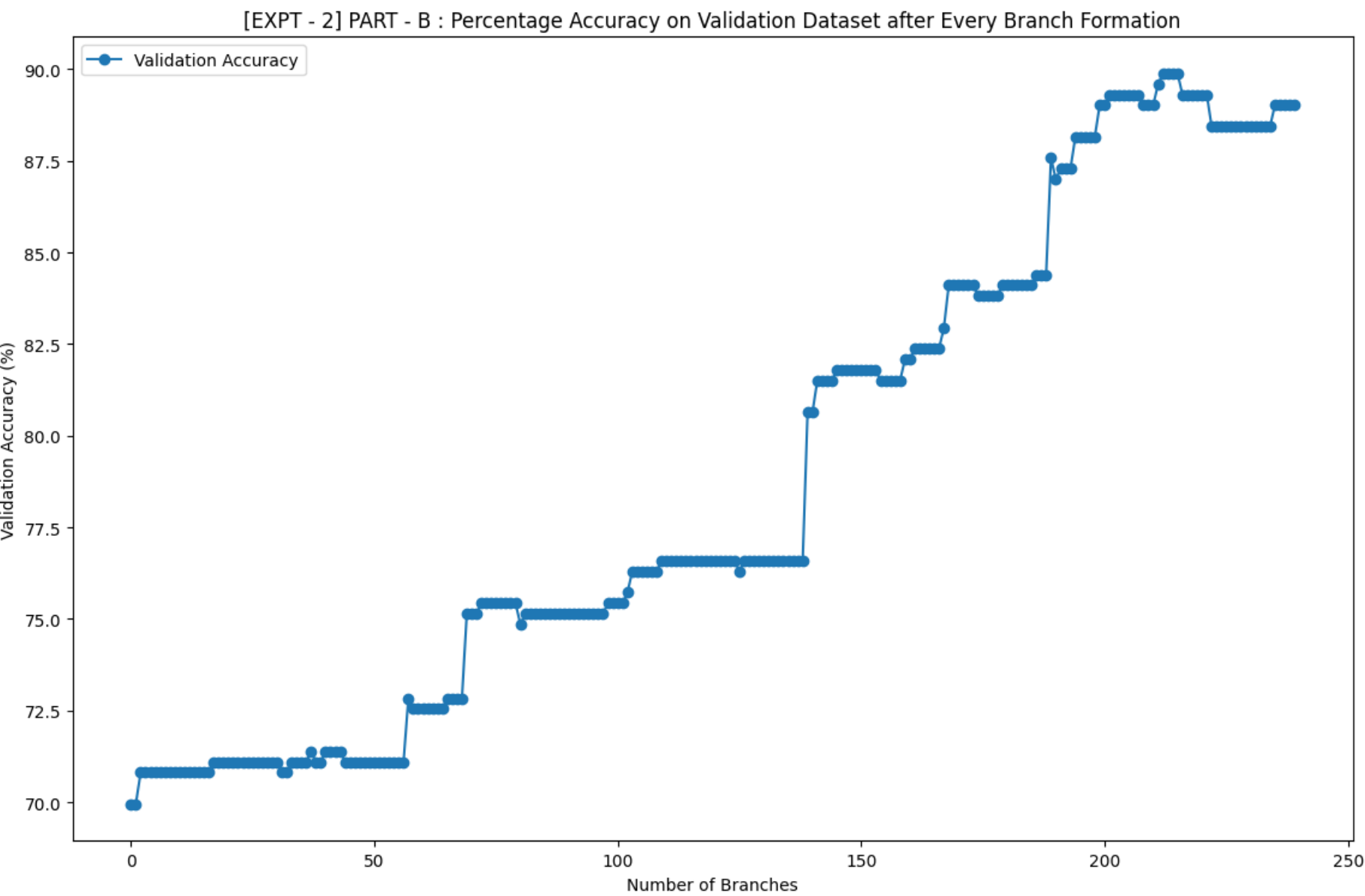
1.
- [EXPT - 2] PART - A : Training Accuracy with best threshold: 99.23%
2.
- [EXPT - 2] PART - A : Testing Accuracy with best threshold: 91.62%

PART - B :

1.
- Percentage Accuracy on Training Dataset after Every Branch Formation VS
Number of Branches :



2. Percentage Accuracy on Validation Dataset after Every Branch Formation Vs Number of Branches :



PART - C :

[EXPT - 2] PART - C : Training Accuracy with early stopping: **88.21%**
[EXPT - 2] PART - C : Testing Accuracy with early stopping: **86.42%**
[EXPT - 2] PART - C : Number of nodes when validation percentage accuracy starts to decrease: **241**

EXPERIMENT - 3 :

1. Rules for classification for the Decision Tree in Experiment 1 :

IF Safety = med AND Persons = 2 THEN unacc

IF Safety = med AND Persons = 4 AND Price_Buying = low AND Price_Maintenance = med AND Lug_boot = med AND Doors = 2 THEN acc

IF Safety = med AND Persons = 4 AND Price_Buying = low AND Price_Maintenance = med AND Lug_boot = med AND Doors = 4 THEN good

IF Safety = med AND Persons = 4 AND Price_Buying = low AND Price_Maintenance = med AND Lug_boot = med AND Doors = 3 THEN acc

IF Safety = med AND Persons = 4 AND Price_Buying = low AND Price_Maintenance = med AND Lug_boot = med AND Doors = 5more THEN good

IF Safety = med AND Persons = 4 AND Price_Buying = low AND Price_Maintenance = med AND Lug_boot = small THEN acc

IF Safety = med AND Persons = 4 AND Price_Buying = low AND Price_Maintenance = med AND Lug_boot = big THEN good

IF Safety = med AND Persons = 4 AND Price_Buying = low AND Price_Maintenance = vhigh AND Lug_boot = big THEN acc

IF Safety = med AND Persons = 4 AND Price_Buying = low AND Price_Maintenance = vhigh AND Lug_boot = med AND Doors = 2 THEN unacc

IF Safety = med AND Persons = 4 AND Price_Buying = low AND Price_Maintenance = vhigh AND Lug_boot = med AND Doors = 4 THEN acc

IF Safety = med AND Persons = 4 AND Price_Buying = low AND Price_Maintenance = vhigh AND Lug_boot = small THEN unacc

IF Safety = med AND Persons = 4 AND Price_Buying = low AND Price_Maintenance = high THEN acc

IF Safety = med AND Persons = 4 AND Price_Buying = low AND Price_Maintenance = low AND Doors = 3 AND Lug_boot = big THEN good

IF Safety = med AND Persons = 4 AND Price_Buying = low AND Price_Maintenance = low AND Doors = 3 AND Lug_boot = med THEN acc

IF Safety = med AND Persons = 4 AND Price_Buying = low AND Price_Maintenance = low AND Doors = 5more THEN good

IF Safety = med AND Persons = 4 AND Price_Buying = low AND Price_Maintenance = low AND Doors = 4 THEN acc

IF Safety = med AND Persons = 4 AND Price_Buying = low AND Price_Maintenance = low AND Doors = 2 THEN acc

IF Safety = med AND Persons = 4 AND Price_Buying = med AND Price_Maintenance = vhigh AND Lug_boot = small THEN unacc

IF Safety = med AND Persons = 4 AND Price_Buying = med AND Price_Maintenance = vhigh AND Lug_boot = med THEN acc

IF Safety = med AND Persons = 4 AND Price_Buying = med AND Price_Maintenance = vhigh AND Lug_boot = big THEN acc

IF Safety = med AND Persons = 4 AND Price_Buying = med AND Price_Maintenance = low AND Lug_boot = big THEN good

IF Safety = med AND Persons = 4 AND Price_Buying = med AND Price_Maintenance = low AND Lug_boot = small THEN acc

IF Safety = med AND Persons = 4 AND Price_Buying = med AND Price_Maintenance = low AND Lug_boot = med THEN good

IF Safety = med AND Persons = 4 AND Price_Buying = med AND Price_Maintenance = high AND Lug_boot = small THEN unacc

IF Safety = med AND Persons = 4 AND Price_Buying = med AND Price_Maintenance = high AND Lug_boot = big THEN acc

IF Safety = med AND Persons = 4 AND Price_Buying = med AND Price_Maintenance = high AND Lug_boot = med THEN acc

IF Safety = med AND Persons = 4 AND Price_Buying = med AND Price_Maintenance = med THEN acc

IF Safety = med AND Persons = 4 AND Price_Buying = high AND Lug_boot = med AND Price_Maintenance = high THEN unacc

IF Safety = med AND Persons = 4 AND Price_Buying = high AND Lug_boot = med AND Price_Maintenance = vhigh THEN unacc

IF Safety = med AND Persons = 4 AND Price_Buying = high AND Lug_boot = med AND Price_Maintenance = med AND Doors = 5more THEN acc

IF Safety = med AND Persons = 4 AND Price_Buying = high AND Lug_boot = med AND Price_Maintenance = med AND Doors = 4 THEN acc

IF Safety = med AND Persons = 4 AND Price_Buying = high AND Lug_boot = med AND Price_Maintenance = med AND Doors = 3 THEN unacc

IF Safety = med AND Persons = 4 AND Price_Buying = high AND Lug_boot = med AND Price_Maintenance = low AND Doors = 4 THEN acc

IF Safety = med AND Persons = 4 AND Price_Buying = high AND Lug_boot = med AND Price_Maintenance = low AND Doors = 2 THEN unacc

IF Safety = med AND Persons = 4 AND Price_Buying = high AND Lug_boot = big AND Price_Maintenance = vhigh THEN unacc

IF Safety = med AND Persons = 4 AND Price_Buying = high AND Lug_boot = big AND Price_Maintenance = high THEN acc

IF Safety = med AND Persons = 4 AND Price_Buying = high AND Lug_boot = big AND Price_Maintenance = low THEN acc

IF Safety = med AND Persons = 4 AND Price_Buying = high AND Lug_boot = big AND Price_Maintenance = med THEN acc

IF Safety = med AND Persons = 4 AND Price_Buying = high AND Lug_boot = small THEN unacc

IF Safety = med AND Persons = 4 AND Price_Buying = vhigh AND Price_Maintenance = low AND Lug_boot = med THEN acc

IF Safety = med AND Persons = 4 AND Price_Buying = vhigh AND Price_Maintenance = low AND Lug_boot = small THEN unacc

IF Safety = med AND Persons = 4 AND Price_Buying = vhigh AND Price_Maintenance = low AND Lug_boot = big THEN acc

IF Safety = med AND Persons = 4 AND Price_Buying = vhigh AND Price_Maintenance = med AND Lug_boot = small THEN unacc

IF Safety = med AND Persons = 4 AND Price_Buying = vhigh AND Price_Maintenance = med AND Lug_boot = med THEN unacc

IF Safety = med AND Persons = 4 AND Price_Buying = vhigh AND Price_Maintenance = med AND Lug_boot = big THEN acc

IF Safety = med AND Persons = 4 AND Price_Buying = vhigh AND Price_Maintenance = vhigh THEN unacc

IF Safety = med AND Persons = 4 AND Price_Buying = vhigh AND Price_Maintenance = high THEN unacc

IF Safety = med AND Persons = more AND Lug_boot = small AND Price_Buying = med AND Price_Maintenance = high THEN unacc
 IF Safety = med AND Persons = more AND Lug_boot = small AND Price_Buying = med AND Price_Maintenance = med AND Doors = 3 THEN acc
 IF Safety = med AND Persons = more AND Lug_boot = small AND Price_Buying = med AND Price_Maintenance = med AND Doors = 5more THEN acc
 IF Safety = med AND Persons = more AND Lug_boot = small AND Price_Buying = med AND Price_Maintenance = med AND Doors = 2 THEN unacc
 IF Safety = med AND Persons = more AND Lug_boot = small AND Price_Buying = med AND Price_Maintenance = low AND Doors = 2 THEN unacc
 IF Safety = med AND Persons = more AND Lug_boot = small AND Price_Buying = med AND Price_Maintenance = low AND Doors = 4 THEN acc
 IF Safety = med AND Persons = more AND Lug_boot = small AND Price_Buying = med AND Price_Maintenance = vhigh THEN unacc
 IF Safety = med AND Persons = more AND Lug_boot = small AND Price_Buying = low AND Doors = 2 THEN unacc
 IF Safety = med AND Persons = more AND Lug_boot = small AND Price_Buying = low AND Doors = 3 THEN acc
 IF Safety = med AND Persons = more AND Lug_boot = small AND Price_Buying = low AND Doors = 5more AND Price_Maintenance = vhigh THEN unacc
 IF Safety = med AND Persons = more AND Lug_boot = small AND Price_Buying = low AND Doors = 5more AND Price_Maintenance = low THEN acc
 IF Safety = med AND Persons = more AND Lug_boot = small AND Price_Buying = low AND Doors = 5more AND Price_Maintenance = med THEN acc
 IF Safety = med AND Persons = more AND Lug_boot = small AND Price_Buying = low AND Doors = 5more AND Price_Maintenance = high THEN acc
 IF Safety = med AND Persons = more AND Lug_boot = small AND Price_Buying = low AND Doors = 4 AND Price_Maintenance = vhigh THEN unacc
 IF Safety = med AND Persons = more AND Lug_boot = small AND Price_Buying = low AND Doors = 4 AND Price_Maintenance = med THEN acc
 IF Safety = med AND Persons = more AND Lug_boot = small AND Price_Buying = high THEN unacc
 IF Safety = med AND Persons = more AND Lug_boot = small AND Price_Buying = vhigh THEN unacc
 IF Safety = med AND Persons = more AND Lug_boot = big AND Price_Buying = vhigh AND Price_Maintenance = med THEN acc
 IF Safety = med AND Persons = more AND Lug_boot = big AND Price_Buying = vhigh AND Price_Maintenance = vhigh THEN unacc
 IF Safety = med AND Persons = more AND Lug_boot = big AND Price_Buying = vhigh AND Price_Maintenance = low THEN acc
 IF Safety = med AND Persons = more AND Lug_boot = big AND Price_Buying = vhigh AND Price_Maintenance = high THEN unacc
 IF Safety = med AND Persons = more AND Lug_boot = big AND Price_Buying = high THEN acc
 IF Safety = med AND Persons = more AND Lug_boot = big AND Price_Buying = low AND Price_Maintenance = vhigh THEN acc
 IF Safety = med AND Persons = more AND Lug_boot = big AND Price_Buying = low AND Price_Maintenance = low THEN good

[illegible]

IF Safety = high AND Persons = 2 THEN unacc
IF Safety = high AND Persons = 4 AND Price_Buying = high AND Price_Maintenance = vhigh THEN unacc
IF Safety = high AND Persons = 4 AND Price_Buying = high AND Price_Maintenance = high THEN acc
IF Safety = high AND Persons = 4 AND Price_Buying = high AND Price_Maintenance = low THEN acc
IF Safety = high AND Persons = 4 AND Price_Buying = high AND Price_Maintenance = med THEN acc
IF Safety = high AND Persons = 4 AND Price_Buying = low AND Price_Maintenance = high AND Lug_boot = med AND Doors = 5more THEN vgood
IF Safety = high AND Persons = 4 AND Price_Buying = low AND Price_Maintenance = high AND Lug_boot = med AND Doors = 2 THEN acc
IF Safety = high AND Persons = 4 AND Price_Buying = low AND Price_Maintenance = high AND Lug_boot = small THEN acc
IF Safety = high AND Persons = 4 AND Price_Buying = low AND Price_Maintenance = high AND Lug_boot = big THEN vgood
IF Safety = high AND Persons = 4 AND Price_Buying = low AND Price_Maintenance = med AND Lug_boot = big THEN vgood
IF Safety = high AND Persons = 4 AND Price_Buying = low AND Price_Maintenance = med AND Lug_boot = med AND Doors = 4 THEN vgood
IF Safety = high AND Persons = 4 AND Price_Buying = low AND Price_Maintenance = med AND Lug_boot = med AND Doors = 3 THEN good
IF Safety = high AND Persons = 4 AND Price_Buying = low AND Price_Maintenance = med AND Lug_boot = med AND Doors = 2 THEN good
IF Safety = high AND Persons = 4 AND Price_Buying = low AND Price_Maintenance = med AND Lug_boot = small THEN good
IF Safety = high AND Persons = 4 AND Price_Buying = low AND Price_Maintenance = vhigh THEN acc
IF Safety = high AND Persons = 4 AND Price_Buying = low AND Price_Maintenance = low AND Doors = 3 AND Lug_boot = med THEN good
IF Safety = high AND Persons = 4 AND Price_Buying = low AND Price_Maintenance = low AND Doors = 3 AND Lug_boot = big THEN vgood
IF Safety = high AND Persons = 4 AND Price_Buying = low AND Price_Maintenance = low AND Doors = 5more THEN vgood
IF Safety = high AND Persons = 4 AND Price_Buying = low AND Price_Maintenance = low AND Doors = 4 THEN vgood
IF Safety = high AND Persons = 4 AND Price_Buying = low AND Price_Maintenance = low AND Doors = 2 THEN good
IF Safety = high AND Persons = 4 AND Price_Buying = vhigh AND Price_Maintenance = med THEN acc
IF Safety = high AND Persons = 4 AND Price_Buying = vhigh AND Price_Maintenance = vhigh THEN unacc
IF Safety = high AND Persons = 4 AND Price_Buying = vhigh AND Price_Maintenance = low THEN acc
IF Safety = high AND Persons = 4 AND Price_Buying = vhigh AND Price_Maintenance = high THEN unacc
IF Safety = high AND Persons = 4 AND Price_Buying = med AND Price_Maintenance = high THEN acc

IF Safety = high AND Persons = 4 AND Price_Buying = med AND Price_Maintenance = med
AND Lug_boot = med AND Doors = 3 THEN acc

IF Safety = high AND Persons = 4 AND Price_Buying = med AND Price_Maintenance = med
AND Lug_boot = med AND Doors = 5more THEN vgood

IF Safety = high AND Persons = 4 AND Price_Buying = med AND Price_Maintenance = med
AND Lug_boot = med AND Doors = 4 THEN vgood

IF Safety = high AND Persons = 4 AND Price_Buying = med AND Price_Maintenance = med
AND Lug_boot = small THEN acc

IF Safety = high AND Persons = 4 AND Price_Buying = med AND Price_Maintenance = med
AND Lug_boot = big THEN vgood

IF Safety = high AND Persons = 4 AND Price_Buying = med AND Price_Maintenance = low
AND Lug_boot = med AND Doors = 2 THEN good

IF Safety = high AND Persons = 4 AND Price_Buying = med AND Price_Maintenance = low
AND Lug_boot = med AND Doors = 3 THEN good

IF Safety = high AND Persons = 4 AND Price_Buying = med AND Price_Maintenance = low
AND Lug_boot = med AND Doors = 4 THEN vgood

IF Safety = high AND Persons = 4 AND Price_Buying = med AND Price_Maintenance = low
AND Lug_boot = big THEN vgood

IF Safety = high AND Persons = 4 AND Price_Buying = med AND Price_Maintenance = low
AND Lug_boot = small THEN good

IF Safety = high AND Persons = 4 AND Price_Buying = med AND Price_Maintenance =
vhigh THEN acc

IF Safety = high AND Persons = more AND Price_Buying = vhigh AND Price_Maintenance =
low THEN acc

IF Safety = high AND Persons = more AND Price_Buying = vhigh AND Price_Maintenance =
vhigh THEN unacc

IF Safety = high AND Persons = more AND Price_Buying = vhigh AND Price_Maintenance =
high THEN unacc

IF Safety = high AND Persons = more AND Price_Buying = vhigh AND Price_Maintenance =
med THEN acc

IF Safety = high AND Persons = more AND Price_Buying = high AND Price_Maintenance =
high THEN acc

IF Safety = high AND Persons = more AND Price_Buying = high AND Price_Maintenance =
med THEN acc

IF Safety = high AND Persons = more AND Price_Buying = high AND Price_Maintenance =
low THEN acc

IF Safety = high AND Persons = more AND Price_Buying = high AND Price_Maintenance =
vhigh THEN unacc

IF Safety = high AND Persons = more AND Price_Buying = med AND Price_Maintenance =
low AND Lug_boot = big THEN vgood

IF Safety = high AND Persons = more AND Price_Buying = med AND Price_Maintenance =
low AND Lug_boot = small AND Doors = 4 THEN good

IF Safety = high AND Persons = more AND Price_Buying = med AND Price_Maintenance =
low AND Lug_boot = small AND Doors = 3 THEN good

IF Safety = high AND Persons = more AND Price_Buying = med AND Price_Maintenance =
low AND Lug_boot = small AND Doors = 2 THEN unacc

IF Safety = high AND Persons = more AND Price_Buying = med AND Price_Maintenance =
low AND Lug_boot = small AND Doors = 5more THEN good

IF Safety = high AND Persons = more AND Price_Buying = med AND Price_Maintenance = low AND Lug_boot = med AND Doors = 2 THEN good
 IF Safety = high AND Persons = more AND Price_Buying = med AND Price_Maintenance = low AND Lug_boot = med AND Doors = 4 THEN vgood
 IF Safety = high AND Persons = more AND Price_Buying = med AND Price_Maintenance = med AND Lug_boot = small AND Doors = 2 THEN unacc
 IF Safety = high AND Persons = more AND Price_Buying = med AND Price_Maintenance = med AND Lug_boot = small AND Doors = 3 THEN acc
 IF Safety = high AND Persons = more AND Price_Buying = med AND Price_Maintenance = med AND Lug_boot = small AND Doors = 4 THEN acc
 IF Safety = high AND Persons = more AND Price_Buying = med AND Price_Maintenance = med AND Lug_boot = med AND Doors = 2 THEN acc
 IF Safety = high AND Persons = more AND Price_Buying = med AND Price_Maintenance = med AND Lug_boot = med AND Doors = 5more THEN vgood
 IF Safety = high AND Persons = more AND Price_Buying = med AND Price_Maintenance = med AND Lug_boot = big THEN vgood
 IF Safety = high AND Persons = more AND Price_Buying = med AND Price_Maintenance = vhigh THEN acc
 IF Safety = high AND Persons = more AND Price_Buying = med AND Price_Maintenance = high THEN acc
 IF Safety = high AND Persons = more AND Price_Buying = low AND Price_Maintenance = high THEN vgood
 IF Safety = high AND Persons = more AND Price_Buying = low AND Price_Maintenance = low AND Lug_boot = med AND Doors = 3 THEN vgood
 IF Safety = high AND Persons = more AND Price_Buying = low AND Price_Maintenance = low AND Lug_boot = med AND Doors = 5more THEN vgood
 IF Safety = high AND Persons = more AND Price_Buying = low AND Price_Maintenance = low AND Lug_boot = med AND Doors = 4 THEN vgood
 IF Safety = high AND Persons = more AND Price_Buying = low AND Price_Maintenance = low AND Lug_boot = med AND Doors = 2 THEN good
 IF Safety = high AND Persons = more AND Price_Buying = low AND Price_Maintenance = low AND Lug_boot = small AND Doors = 2 THEN unacc
 IF Safety = high AND Persons = more AND Price_Buying = low AND Price_Maintenance = low AND Lug_boot = small AND Doors = 3 THEN good
 IF Safety = high AND Persons = more AND Price_Buying = low AND Price_Maintenance = low AND Lug_boot = small AND Doors = 5more THEN good
 IF Safety = high AND Persons = more AND Price_Buying = low AND Price_Maintenance = low AND Lug_boot = big THEN vgood
 IF Safety = high AND Persons = more AND Price_Buying = low AND Price_Maintenance = vhigh THEN acc
 IF Safety = high AND Persons = more AND Price_Buying = low AND Price_Maintenance = med AND Doors = 3 THEN vgood
 IF Safety = high AND Persons = more AND Price_Buying = low AND Price_Maintenance = med AND Doors = 4 THEN vgood
 IF Safety = high AND Persons = more AND Price_Buying = low AND Price_Maintenance = med AND Doors = 5more THEN good

2. Rules for classification for the Decision Tree in Experiment 2 [with Early Stopping] :

IF Safety = med AND Persons = 2 THEN unacc
IF Safety = med AND Persons = 4 AND Price_Buying = low AND
Price_Maintenance = med AND Lug_boot = med AND Doors = 2 THEN acc
IF Safety = med AND Persons = 4 AND Price_Buying = low AND
Price_Maintenance = med AND Lug_boot = med AND Doors = 4 THEN good
IF Safety = med AND Persons = 4 AND Price_Buying = low AND
Price_Maintenance = med AND Lug_boot = med AND Doors = 3 THEN acc
IF Safety = med AND Persons = 4 AND Price_Buying = low AND
Price_Maintenance = med AND Lug_boot = med AND Doors = 5more THEN
good
IF Safety = med AND Persons = 4 AND Price_Buying = low AND
Price_Maintenance = med AND Lug_boot = small THEN acc
IF Safety = med AND Persons = 4 AND Price_Buying = low AND
Price_Maintenance = med AND Lug_boot = big THEN good
IF Safety = med AND Persons = 4 AND Price_Buying = low AND
Price_Maintenance = vhigh AND Lug_boot = big THEN acc
IF Safety = med AND Persons = 4 AND Price_Buying = low AND
Price_Maintenance = vhigh AND Lug_boot = med AND Doors = 2 THEN
unacc
IF Safety = med AND Persons = 4 AND Price_Buying = low AND
Price_Maintenance = vhigh AND Lug_boot = med AND Doors = 4 THEN acc
IF Safety = med AND Persons = 4 AND Price_Buying = low AND
Price_Maintenance = vhigh AND Lug_boot = small THEN unacc
IF Safety = med AND Persons = 4 AND Price_Buying = low AND
Price_Maintenance = high THEN acc
IF Safety = med AND Persons = 4 AND Price_Buying = low AND
Price_Maintenance = low AND Doors = 3 AND Lug_boot = big THEN good
IF Safety = med AND Persons = 4 AND Price_Buying = low AND
Price_Maintenance = low AND Doors = 3 AND Lug_boot = med THEN acc
IF Safety = med AND Persons = 4 AND Price_Buying = low AND
Price_Maintenance = low AND Doors = 5more THEN good
IF Safety = med AND Persons = 4 AND Price_Buying = low AND
Price_Maintenance = low AND Doors = 4 THEN acc
IF Safety = med AND Persons = 4 AND Price_Buying = low AND
Price_Maintenance = low AND Doors = 2 THEN acc
IF Safety = med AND Persons = 4 AND Price_Buying = med AND
Price_Maintenance = vhigh AND Lug_boot = small THEN unacc
IF Safety = med AND Persons = 4 AND Price_Buying = med AND
Price_Maintenance = vhigh AND Lug_boot = med THEN acc
IF Safety = med AND Persons = 4 AND Price_Buying = med AND
Price_Maintenance = vhigh AND Lug_boot = big THEN acc

IF Safety = med AND Persons = 4 AND Price_Buying = med AND Price_Maintenance = low THEN good

IF Safety = med AND Persons = 4 AND Price_Buying = high AND Lug_boot = med AND Price_Maintenance = high THEN unacc

IF Safety = med AND Persons = 4 AND Price_Buying = high AND Lug_boot = med AND Price_Maintenance = vhigh THEN unacc

IF Safety = med AND Persons = 4 AND Price_Buying = high AND Lug_boot = med AND Price_Maintenance = med THEN acc

IF Safety = med AND Persons = 4 AND Price_Buying = high AND Lug_boot = big THEN acc

IF Safety = med AND Persons = 4 AND Price_Buying = vhigh AND Price_Maintenance = low THEN acc

IF Safety = med AND Persons = more AND Lug_boot = small AND Price_Buying = med AND Price_Maintenance = high THEN unacc

IF Safety = med AND Persons = more AND Lug_boot = small AND Price_Buying = med AND Price_Maintenance = med AND Doors = 3 THEN acc

IF Safety = med AND Persons = more AND Lug_boot = small AND Price_Buying = med AND Price_Maintenance = med AND Doors = 5more THEN acc

IF Safety = med AND Persons = more AND Lug_boot = small AND Price_Buying = med AND Price_Maintenance = med AND Doors = 2 THEN unacc

IF Safety = med AND Persons = more AND Lug_boot = small AND Price_Buying = med AND Price_Maintenance = low AND Doors = 2 THEN unacc

IF Safety = med AND Persons = more AND Lug_boot = small AND Price_Buying = med AND Price_Maintenance = low AND Doors = 4 THEN acc

IF Safety = med AND Persons = more AND Lug_boot = small AND Price_Buying = med AND Price_Maintenance = vhigh THEN unacc

IF Safety = med AND Persons = more AND Lug_boot = small AND Price_Buying = low THEN acc

IF Safety = med AND Persons = more AND Lug_boot = big THEN acc

IF Safety = low THEN unacc

IF Safety = high AND Persons = 2 THEN unacc

IF Safety = high AND Persons = 4 AND Price_Buying = high AND Price_Maintenance = vhigh THEN unacc

IF Safety = high AND Persons = 4 AND Price_Buying = high AND Price_Maintenance = high THEN acc

IF Safety = high AND Persons = 4 AND Price_Buying = high AND Price_Maintenance = low THEN acc

IF Safety = high AND Persons = 4 AND Price_Buying = high AND Price_Maintenance = med THEN acc

IF Safety = high AND Persons = 4 AND Price_Buying = low AND
 Price_Maintenance = high AND Lug_boot = med AND Doors = 5more THEN
 vgood
 IF Safety = high AND Persons = 4 AND Price_Buying = low AND
 Price_Maintenance = high AND Lug_boot = med AND Doors = 2 THEN acc
 IF Safety = high AND Persons = 4 AND Price_Buying = low AND
 Price_Maintenance = high AND Lug_boot = small THEN acc
 IF Safety = high AND Persons = 4 AND Price_Buying = low AND
 Price_Maintenance = high AND Lug_boot = big THEN vgood
 IF Safety = high AND Persons = 4 AND Price_Buying = low AND
 Price_Maintenance = med AND Lug_boot = big THEN vgood
 IF Safety = high AND Persons = 4 AND Price_Buying = low AND
 Price_Maintenance = med AND Lug_boot = med THEN good
 IF Safety = high AND Persons = 4 AND Price_Buying = low AND
 Price_Maintenance = vhigh THEN acc
 IF Safety = high AND Persons = 4 AND Price_Buying = low AND
 Price_Maintenance = low AND Doors = 3 AND Lug_boot = med THEN good
 IF Safety = high AND Persons = 4 AND Price_Buying = low AND
 Price_Maintenance = low AND Doors = 3 AND Lug_boot = big THEN vgood
 IF Safety = high AND Persons = 4 AND Price_Buying = low AND
 Price_Maintenance = low AND Doors = 5more THEN vgood
 IF Safety = high AND Persons = 4 AND Price_Buying = low AND
 Price_Maintenance = low AND Doors = 4 THEN vgood
 IF Safety = high AND Persons = 4 AND Price_Buying = low AND
 Price_Maintenance = low AND Doors = 2 THEN good
 IF Safety = high AND Persons = 4 AND Price_Buying = vhigh AND
 Price_Maintenance = med THEN acc
 IF Safety = high AND Persons = 4 AND Price_Buying = vhigh AND
 Price_Maintenance = vhigh THEN unacc
 IF Safety = high AND Persons = 4 AND Price_Buying = vhigh AND
 Price_Maintenance = low THEN acc
 IF Safety = high AND Persons = 4 AND Price_Buying = vhigh AND
 Price_Maintenance = high THEN unacc
 IF Safety = high AND Persons = 4 AND Price_Buying = med AND
 Price_Maintenance = high THEN acc
 IF Safety = high AND Persons = 4 AND Price_Buying = med AND
 Price_Maintenance = med THEN vgood
 IF Safety = high AND Persons = more AND Price_Buying = vhigh THEN unacc

Total Number of Rules for Classification in Experiment - 2 : 60