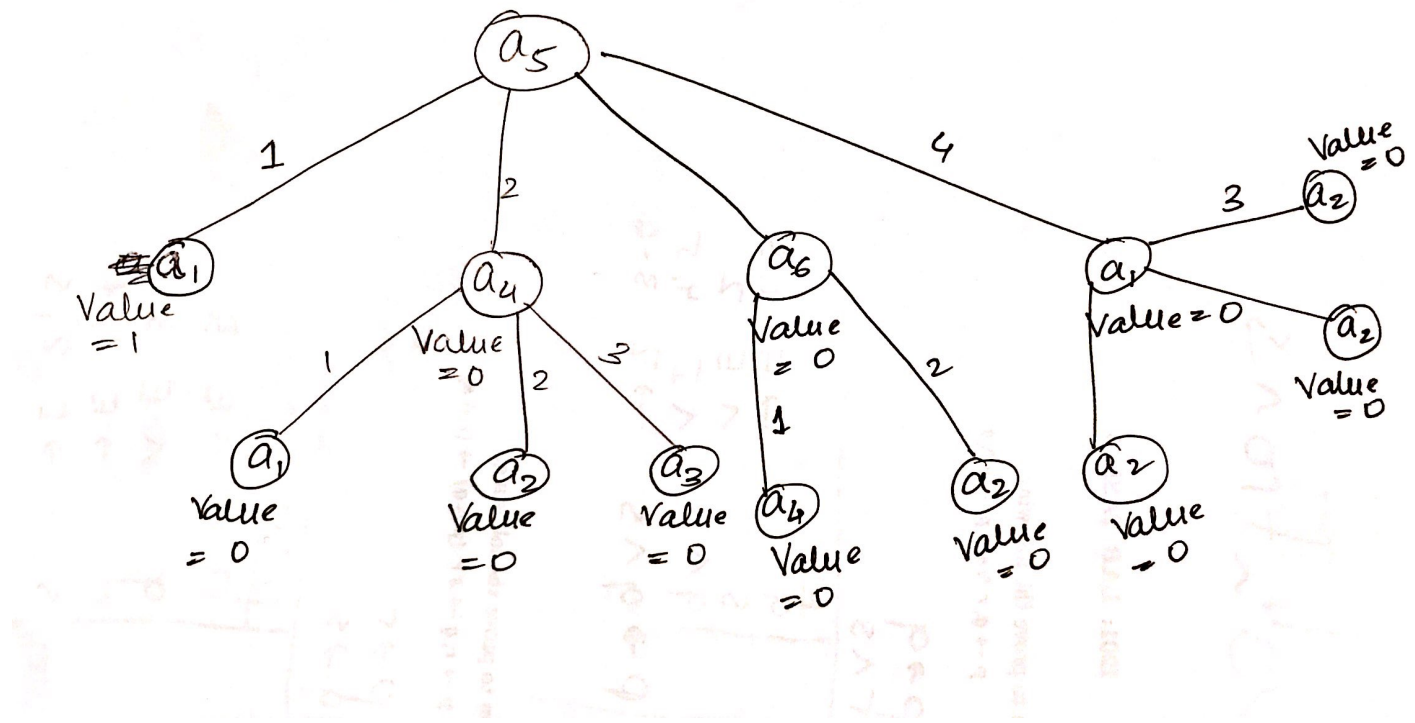


# AML

## Programming Assignment 1

**Results for MONK Dataset using Decision Tree:**

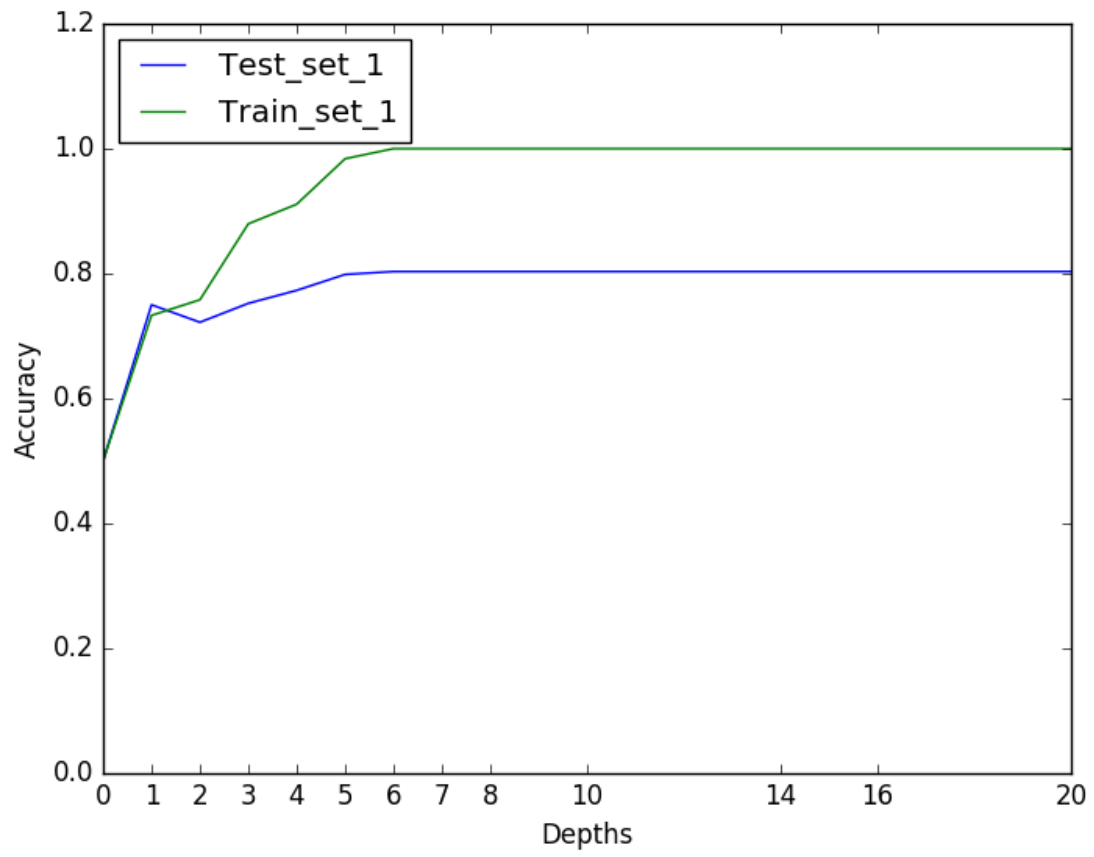
**Test set: 1**



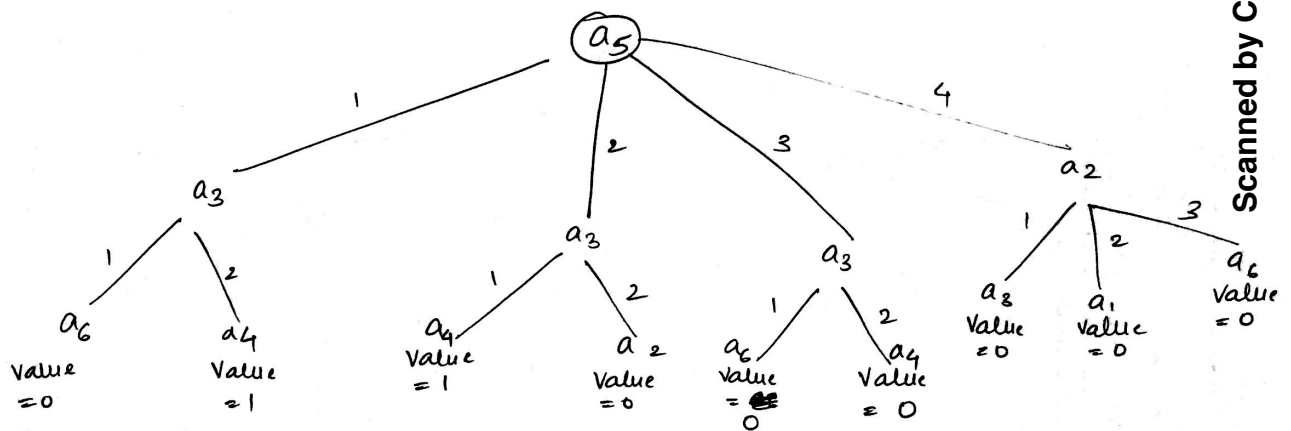
**Confusion Matrix:**

Test set 1				
	Depth 1		Depth 2	
Predicted	0	1	0	1
Actual				
0	216	0	192	24
1	108	108	96	120

**Learning curve for Accuracy:**



## Test set: 2

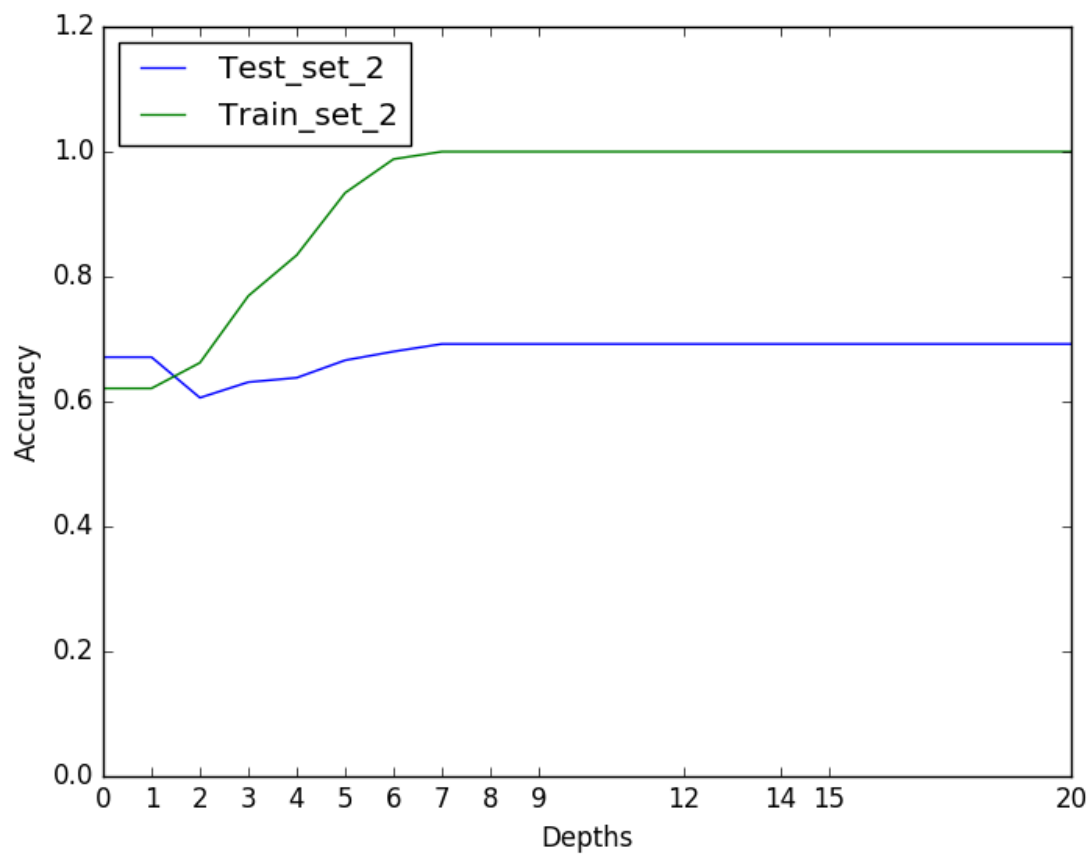


Scanned by CamScanner

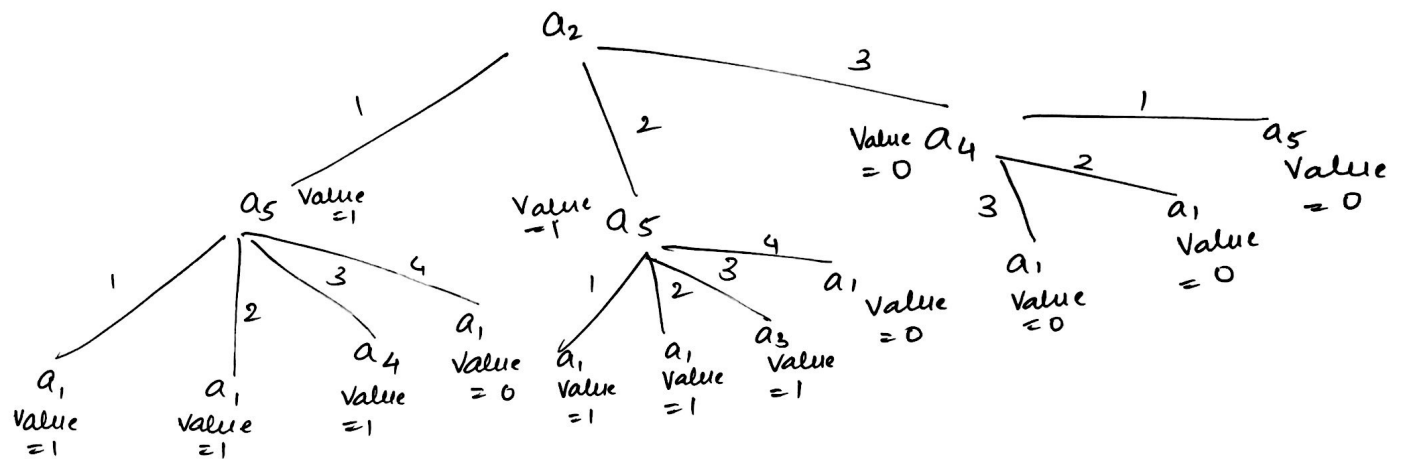
## Confusion Matrix:

Test set 2				
	Depth 1		Depth 2	
Predicted	0	1	0	1
Actual				
0	290	0	222	68
1	142	0	102	40

Learning curve for Accuracy:



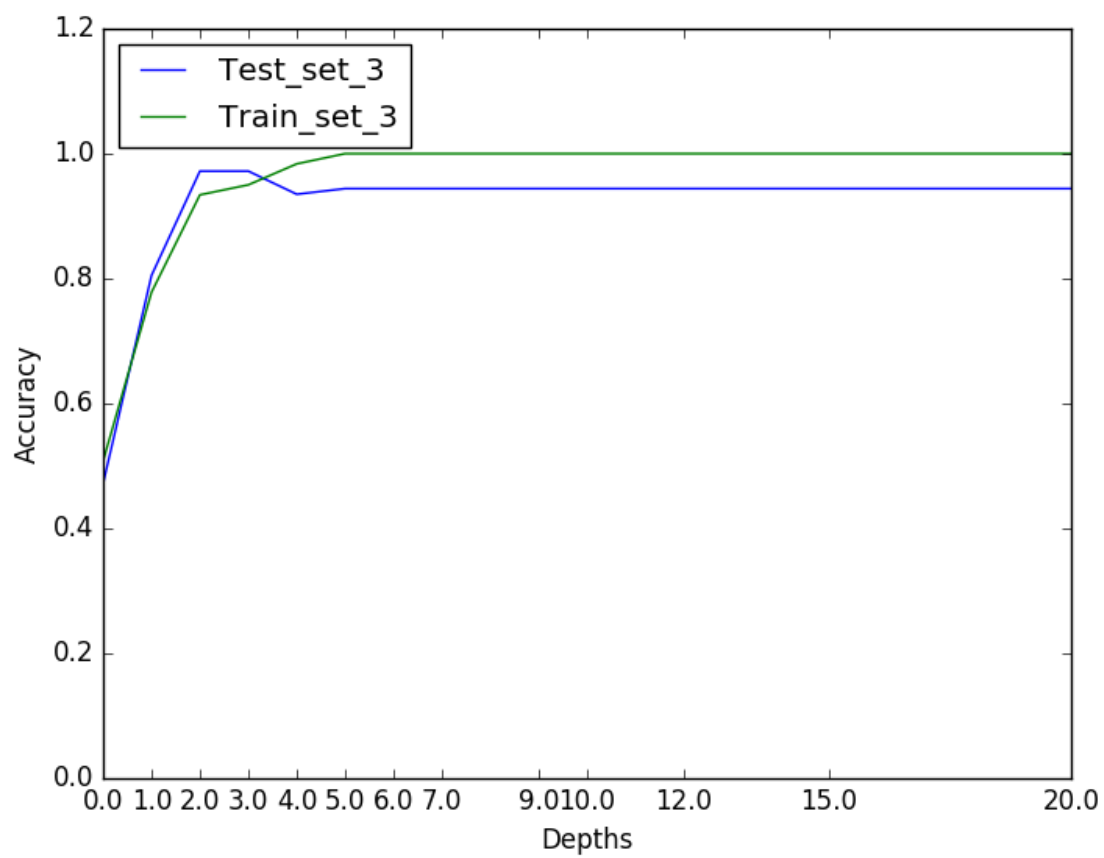
## Test set: 3



## Confusion Matrix:

Test set : 3				
	Depth 1		Depth 2	
Predicted	0	1	0	1
Actual				
0	132	72	204	0
1	12	216	12	216

Learning curve for Accuracy:



### Misclassifications at each Depth (ERROR):

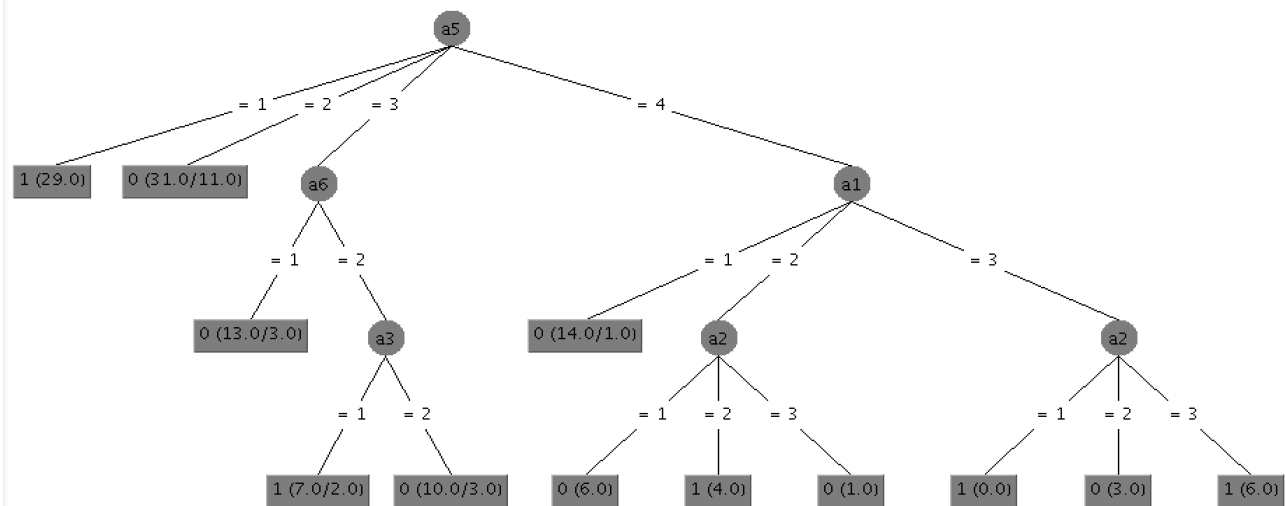
Depths	0	1	2	3	4	5	6	7
Test_set_1	216	108	120	107	98	87	85	85
Test_set_2	142	142	170	159	156	144	135	133
Test_set_3	228	84	12	12	28	24	24	24
Average	195	111	100	92	94	85	81	80

### Results for MONK Dataset on WEKA using J48:

Weka Confusion Matrix for **Train set: 1** and **Test set: 1**

```
      a    b    <-- classified as
186  30 |    a = 0
 75 141 |    b = 1
```

Tree:

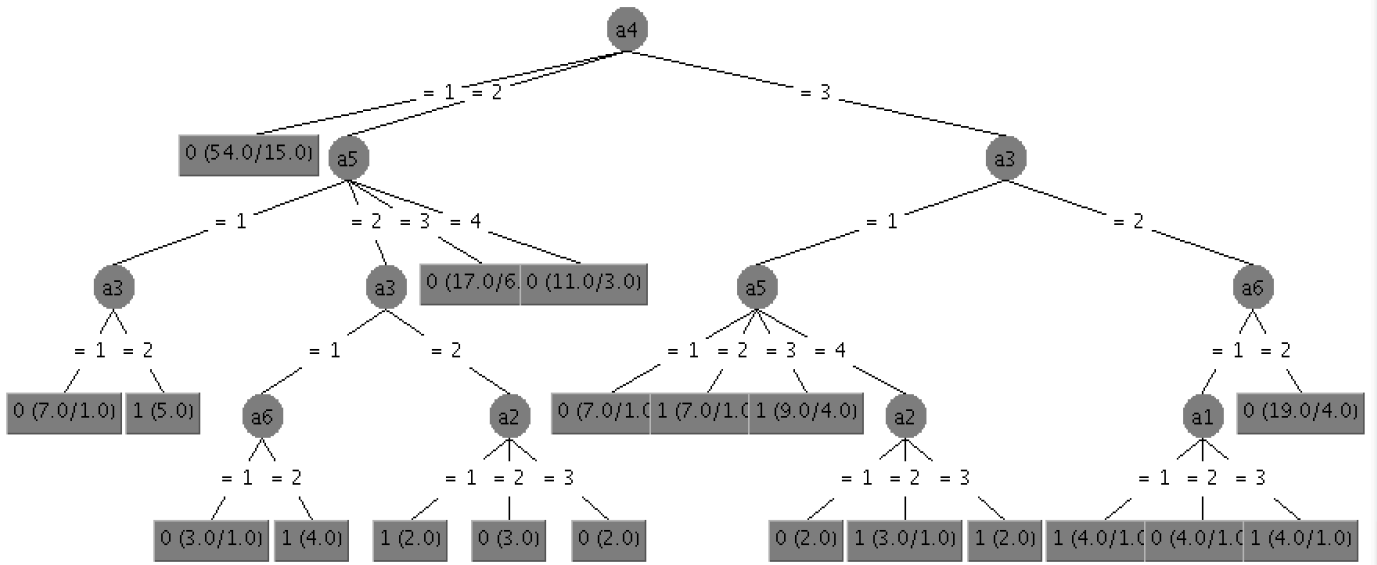


Weka Confusion Matrix for **Train set: 2** and **Test set: 2**

a	b	<-- classified as
233	57	a = 0
94	48	b = 1

Tree:

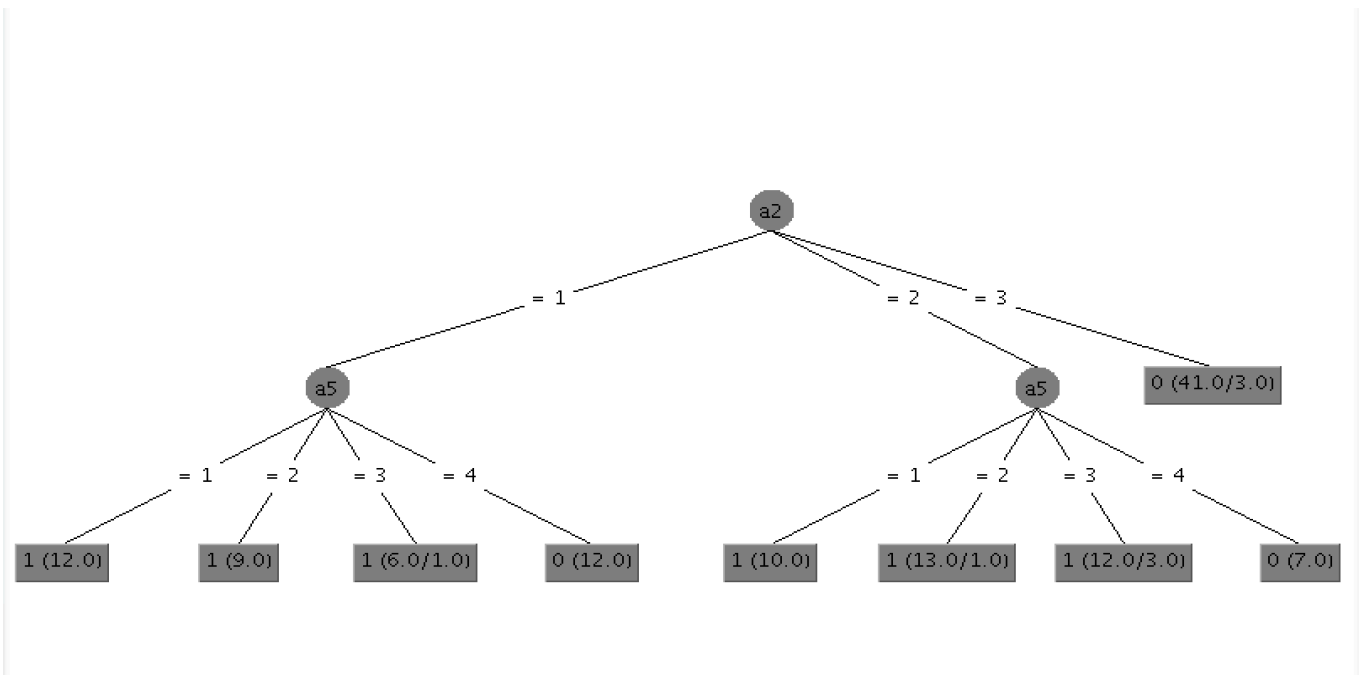




### Weka Confusion Matrix for **Train set: 3** and **Test set: 3**

a	b	<-- classified as
204	0	a = 0
12	216	b = 1

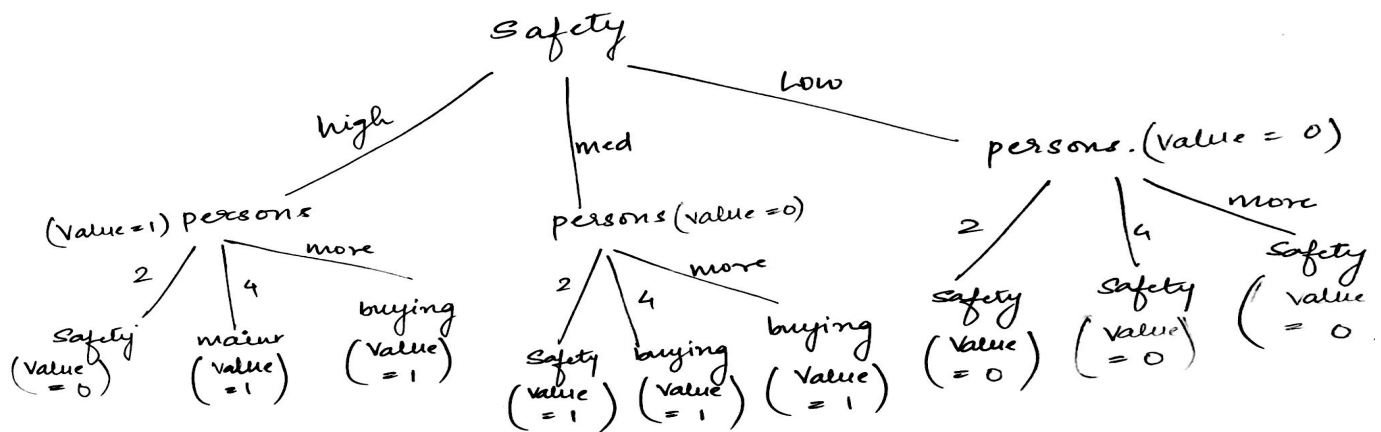
Tree:



## CAR EVALUATION DATASET:

I chose the “Car Evaluation Dataset” which has 7 attributes in total. The attributes are: Buying (very\_high, high, medium, low), Maintenance (very\_high, high, medium, low), doors (1,2,3,4,5more), persons (Capacity of the persons to carry: 2, 4, more), lug\_boot (size of the luggage boot: small, med, big), safety (low, medium, high), class (if the car is un acceptable [0] or in a good condition [1]).

## DECISION TREE:



## Confusion matrix using Decision Tree:

Car Evaluation set				
	Depth 1		Depth 2	
Predicted	0	1	0	1
Actual				
0	258	83	267	74

1	66	93	0	159
---	----	----	---	-----

**Confusion matrix on Car Evaluation Dataset using WEKA:**

```

  a   b   <-- classified as
137  22 |   a = 1
 13 328 |   b = 0

```

**Decision Tree using Weka:**

