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CS612 - Lab 7

1) **Classification (Decision tree) Questions:** Draw the full decision tree for the parity function of four Boolean attributes, *A*, *B*, *C*, and *D*. Is it possible to simplify this tree? If yes, simplify it and redraw the simplified tree

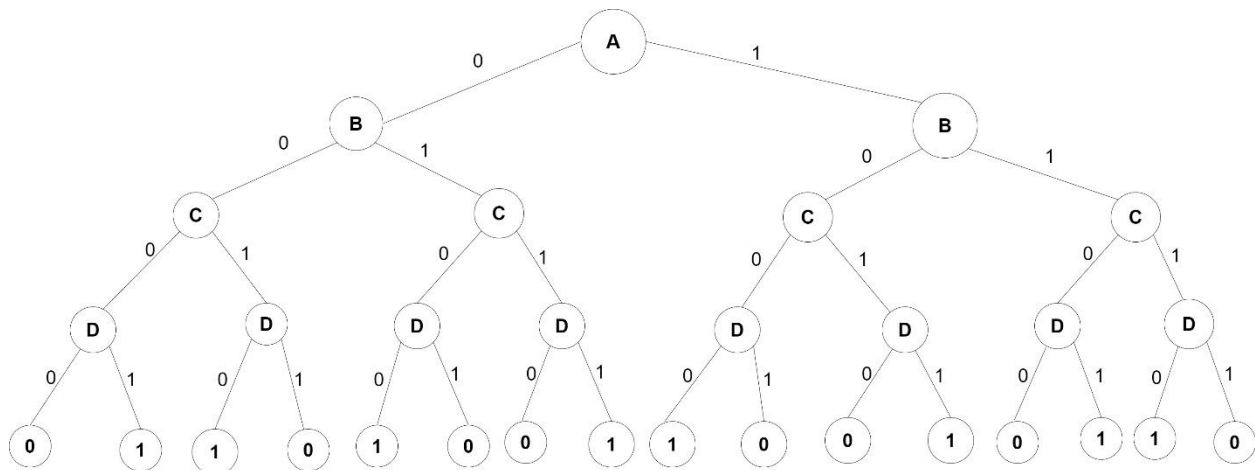| A	B	C	D	Class
0	0	0	0	0
0	0	0	1	1
0	0	1	0	1
0	0	1	1	0
0	1	0	0	1
0	1	0	1	0
0	1	1	0	0
0	1	1	1	1
1	0	0	0	1
1	0	0	1	0
1	0	1	0	0
1	0	1	1	1
1	1	0	0	0
1	1	0	1	1
1	1	1	0	1
1	1	1	1	0

Ans Q1.

Fig. Decision tree for parity function of four Boolean attributes A,B,C,D.

The preceding tree cannot be simplified. It cannot be simplified further.

2) **Classification (Decision tree) Question:** Draw the full decision tree for the parity function of four Boolean attributes, *A*, *B*, *C*, and *D*. Is it possible to simplify this tree? If yes, simplify it and redraw the simplified tree

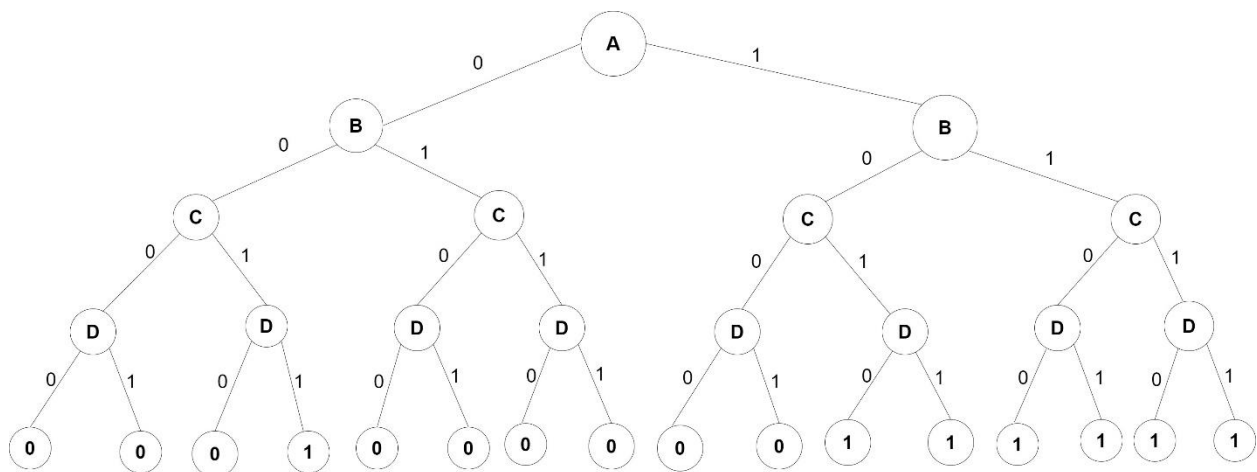| A	B	C	D	Class
0	0	0	0	0
0	0	0	1	0
0	0	1	0	0
0	0	1	1	1
0	1	0	0	0
0	1	0	1	0
0	1	1	0	0
0	1	1	1	0
1	0	0	0	0
1	0	0	1	0
1	0	1	0	1
1	0	1	1	1
1	1	0	0	1
1	1	0	1	1
1	1	1	0	1
1	1	1	1	1

Ans Q2.

Fig. Decision tree for parity function of four Boolean attributes A,B,C,D.
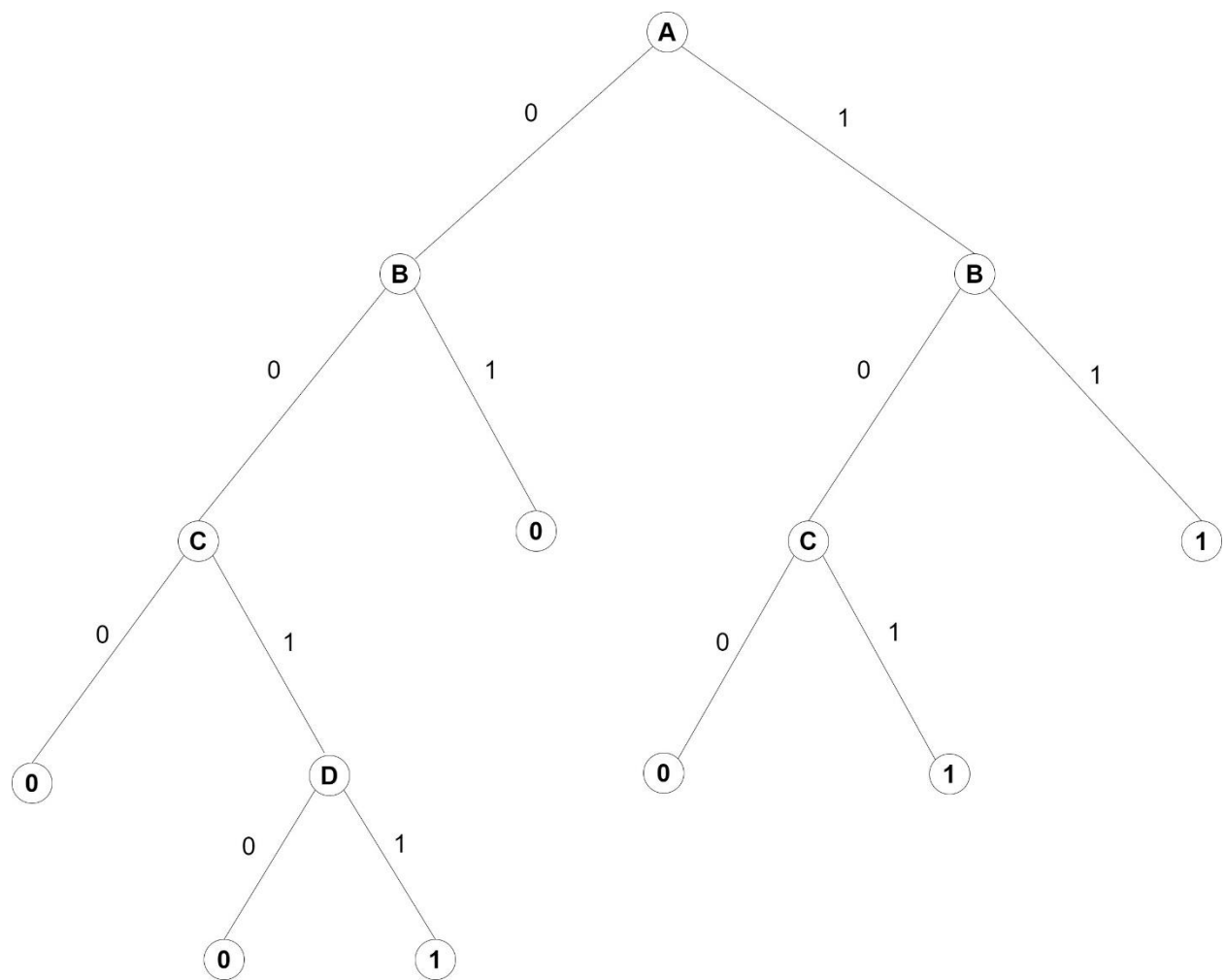
The preceding tree can be simplified. It can be further simplified as below :

Fig. Simplified version of decision tree