Machine Learning
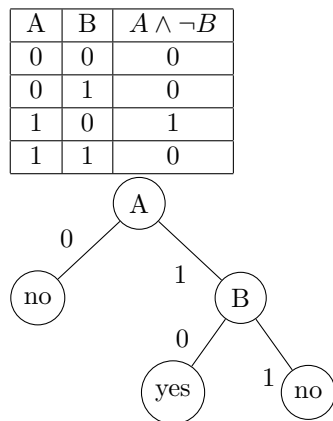# Exercise sheet 3

Gruppe 9:
Hauke Wree and Fridtjof Schulte Steinberg
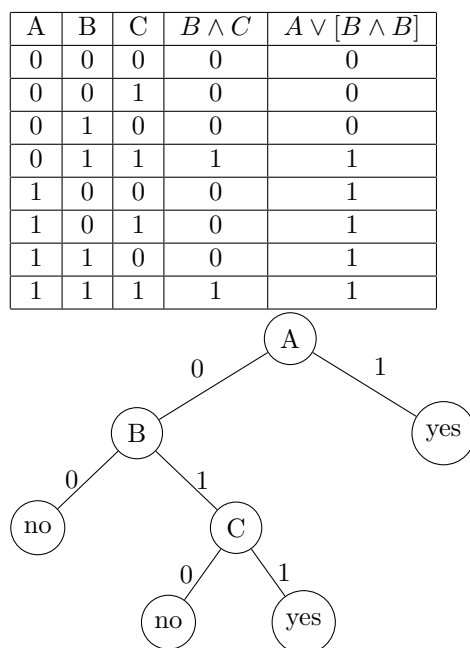
1. Juni 2015

Exercise 1 (Decision trees for Boolean functions):
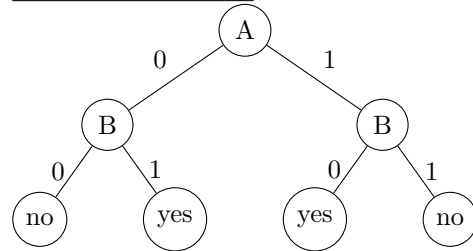
a)

A	B	$A \wedge \neg B$
0	0	0
0	1	0
1	0	1
1	1	0

b)

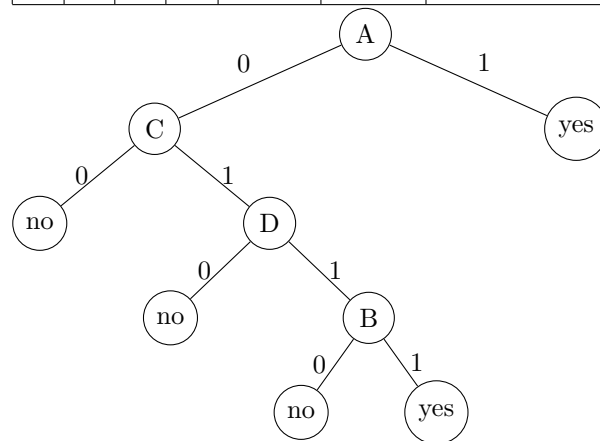| A	B	C	$B \wedge C$	$A \vee [B \wedge B]$
0	0	0	0	0
0	0	1	0	0
0	1	0	0	0
0	1	1	1	1
1	0	0	0	1
1	0	1	0	1
1	1	0	0	1
1	1	1	1	1

c)

A	B	$A\,XOR\,B$
0	0	0
0	1	1
1	0	1
1	1	0

d)

A	B	C	D	$A \wedge B$	$C \wedge D$	$[A \wedge B] \vee [C \wedge D]$
0	0	0	0	0	0	0
0	0	0	1	0	0	0
0	0	1	0	0	0	0
0	0	1	1	0	1	1
0	1	0	0	0	0	0
0	1	0	1	0	0	0
0	1	1	0	0	0	0
0	1	1	1	0	1	1
1	0	0	0	0	0	0
1	0	0	1	0	0	0
1	0	1	0	0	0	0
1	0	1	1	0	1	1
1	1	0	0	1	0	1
1	1	0	1	1	0	1
1	1	1	0	1	0	1
1	1	1	1	1	1	1

Exercise 2 (Decision tree learning)

a)

i   deadline

Urgent   Near   None

party ?

tri   YP   trullala   trullala

Y

tra