

①

Buys Computer	
YES	NO
12	8

$$E = E(12,8) = \underline{\underline{0,97}}$$

		Buys Computer	
		Yes	No
Age	$\leq 30$	2	6
	31...40	6	0
	$> 40$	4	2

$$\underline{\underline{gain = 0,5709}}$$

Income	High	3	2
	Medium	5	3
	Low	4	3

$$\underline{\underline{gain = 0,0016}}$$

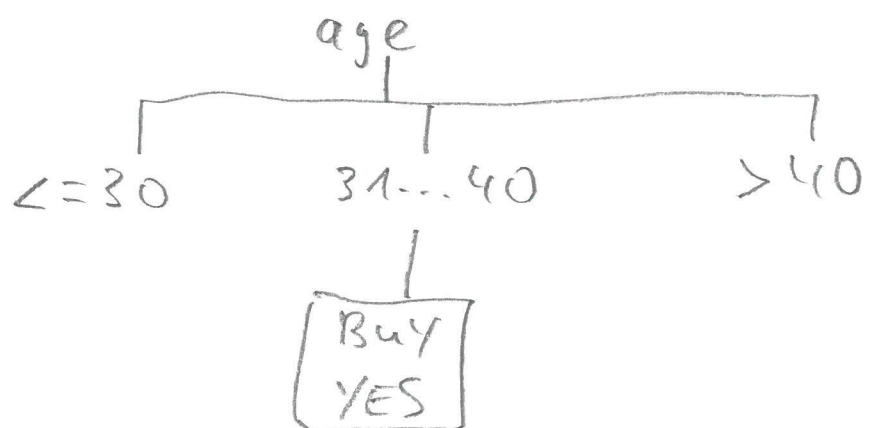
Student	NO	4	7
	YES	8	1

$$\underline{\underline{gain = 0,224}}$$

Credit	Fair	7	3
	Excellent	5	5

$$\underline{\underline{gain = 0,030}}$$

resultierender Teilbaum:





$L=30$

Age	Income	Student	Credit	Buys
$L=30$	High	No	Fair	No
$L=30$	High	No	Excellent	No
$L=30$	Medium	No	Fair	No
$L=30$	Low	Yes	Fair	Yes
$L=30$	Medium	Yes	Excellent	Yes
$L=30$	Medium	No	Excellent	No
$L=30$	Low	No	Fair	No
$L=30$	Low	No	Excellent	No

Entropy:  $E = E(2,6)$

$= 0.811278$

Age	Income	Buys
$L=30$	High	No
$L=30$	High	No
$L=30$	Medium	No
$L=30$	Low	YES
$L=30$	Medium	YES
$L=30$	Medium	No
$L=30$	Low	No
$L=30$	Low	No

Income	P	N	E
High	0	2	0
Medium	1	2	
Low	1	2	

gain = 0.122556

Student	P	N	E
YES	2	0	0
NO	0	6	0

gain = 0.811278

Credit	P	N	E
Fair	1	3	
Excellent	1	3	

gain = 0



Age	Income	Student	Credit	Buys
> 40	Medium	No	Fair	Yes
> 40	Low	YES	Fair	YES
> 40	LOW	YES	Excellent	No
> 40	Medium	YES	Fair	Yes
> 40	Medium	No	Excellent	No
> 40	Medium	Yes	Excellent	Yes

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$$Entropy = E(4,2) = \underline{\underline{0,9182}}$$

Income	P	N	E
Medium	3	1	
Low	1	1	

$$gain = \underline{\underline{0,04411}}$$

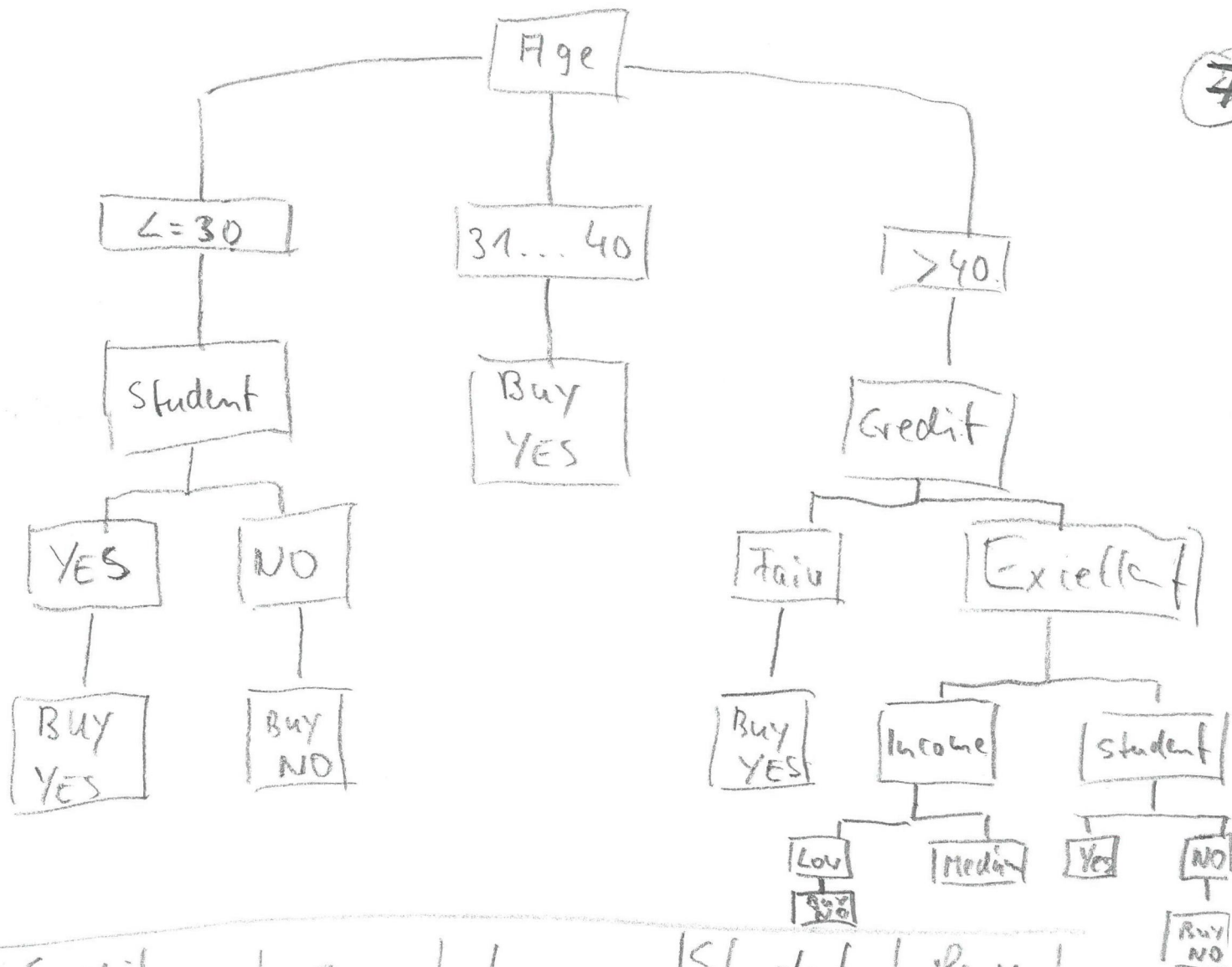
Student	P	N	E
YES	3	1	
NO	1	1	

$$gain = \underline{\underline{0,04411}}$$

Credit	P	N	E
Fair	3	0	0
Excellent	1	2	

$$gain = \underline{\underline{0,4591}}$$





Credit	Age	Income	Student	Buy
Excellent	>40	Low	YES	NO
Excellent	>40	Medium	NO	NO
Excellent	>40	Medium	YES	YES

$$\text{Entropy} = E(1,2) = \underline{\underline{0,91829}}$$

Age	P	N	E
>40	1	2	

$$\underline{\underline{\text{gain} = 0}}$$

Income	P	N	E
Low	0	1	0
Medium	1	1	

$$\underline{\underline{\text{gain} = 0,25162}}$$



Student	P	N	E
YES	1	1	
NO	0	1	0

gain = 0,2516

Income	Age	Student	Credit	Buys
Medium	>40	NO	Excellent	NO
Medium	>40	YES	Excellent	YES

$E = E(1,1) = 1$

Age	P	N	E
>40	1	1	1

gain = 0

Student	P	N	E
NO	0	1	0
YES	1	0	0

gain = 1

Credit	P	N	E
Excellent	1	1	

gain = 0

Student	Age	Income	Credit	Buys
YES	>40	Low	Excellent	NO
YES	>40	Medium	Excellent	YES

$E = E(1,1) = 1$

Age	P	N	E
>40	1	1	1

gain = 0

Income	P	N	E
Low	0	1	0
Medium	1	0	0

gain = 1

Credit	P	N	E
Excellent	1	1	1

gain = 0



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