DSAIUebung-003 -- Karnaugh-Veitch Method

- a) *Create Truth Tables*
- b) *Optimize the Boolean expression using the Karnaugh-Veitch method*

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1) [3 Variables]

A

A	B	C	P(A,B,C)
0	0	0	1
0	0	1	0
0	1	0	1
0	1	1	1
1	0	0	0

> ***..hier könnten weitere Zeilen stehen..***

B

	AB	A¬B	¬A¬B	¬AB
C	$\color{gray}{0}$	$\color{gray}{0}$	$\color{gray}{0}$	$\color{royalblue}{1}$
¬C	$\color{gray}{0}$	$\color{gray}{0}$	$\color{yellow}{1}$	$\color{lime}{1}$

> ***Ergebnis*** :
>
> $P_{(A,B,C)}$ ≡ ($\color{yellow}{¬A∧¬C}$) ∨ ($\color{royalblue}{¬A∧B}$)
>
> ***Quot erat demonstrandum.***

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2) [4 Variables]

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A	B	C	D	P(A,B,C,D)
1	0	0	0	1
0	1	1	1	0
1	1	0	1	1
0	1	0	1	1
1	1	0	0	1
1	0	1	0	0
1	0	0	1	1

> ***..hier könnten weitere Zeilen stehen..***

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	¬AB	AB	A¬B	¬A¬B
CD	$\color{gray}{0}$	$\color{gray}{0}$	$\color{gray}{0}$	$\color{gray}{0}$
C¬D	$\color{gray}{0}$	$\color{gray}{0}$	$\color{gray}{0}$	$\color{gray}{0}$
¬C¬D	$\color{gray}{0}$	$\color{royalblue}{1}$	$\color{royalblue}{1}$	$\color{gray}{0}$
¬CD	$\color{yellow}{1}$	$\color{lime}{1}$	$\color{lime}{1}$	$\color{gray}{0}$

> ***Ergebnis*** :
>
> $P_{(A,B,\mathbf{C},\mathbf{D})}$ ≡ ($\color{royalblue}{A∧¬\mathbf{C}}$) ∨ ($\color{yellow}{¬\mathbf{C}∧\mathbf{D}}$)
>
> ***Quot erat demonstrandum.***
