

TP1 : Tableaux de Karnaugh

Pour le segment A :

| C D \ A B | | 0 0 | | 0 1 | | 1 1 | | 1 0 | |
|-----------|---|-----|--|-----|--|-----|--|-----|--|
| | | 0 0 | | 0 1 | | 1 1 | | 1 0 | |
| 0 | 0 | 1 | | 0 | | 1 | | 1 | |
| 0 | 1 | 0 | | 1 | | 1 | | 1 | |
| 1 | 1 | X | | X | | X | | X | |
| 1 | 0 | 1 | | 1 | | X | | X | |

$$a = A + C + B.D + \bar{B}.\bar{D}$$

Pour le segment B :

| C D \ A B | | 0 0 | | 0 1 | | 1 1 | | 1 0 | |
|-----------|---|-----|--|-----|--|-----|--|-----|--|
| | | 0 0 | | 0 1 | | 1 1 | | 1 0 | |
| 0 | 0 | 1 | | 1 | | 1 | | 1 | |
| 0 | 1 | 1 | | 0 | | 1 | | 0 | |
| 1 | 1 | X | | X | | X | | X | |
| 1 | 0 | 1 | | 1 | | X | | X | |

$$b = A + \bar{B} + C.D + \bar{C}.\bar{D}$$

Pour le segment C :

| C D A B | | 0 0 | | 0 1 | | 1 1 | | 1 0 | |
|------------|--|-----|--|-----|--|-----|--|-----|--|
| | | 0 0 | | 0 1 | | 1 1 | | 1 0 | |
| 0 0 | | 1 | | 1 | | 1 | | 0 | |
| 0 1 | | 1 | | 1 | | 1 | | 1 | |
| 1 1 | | X | | X | | X | | X | |
| 1 0 | | 1 | | 1 | | X | | X | |

$$c = A + B + \bar{C} + D$$

Pour le segment D :

| C D A B | | 0 0 | | 0 1 | | 1 1 | | 1 0 | |
|------------|--|-----|--|-----|--|-----|--|-----|--|
| | | 0 0 | | 0 1 | | 1 1 | | 1 0 | |
| 0 0 | | 1 | | 0 | | 1 | | 1 | |
| 0 1 | | 0 | | 1 | | 0 | | 1 | |
| 1 1 | | X | | X | | X | | X | |
| 1 0 | | 1 | | 1 | | X | | X | |

$$d = A + \bar{B}.\bar{D} + \bar{B}.C + B.\bar{C}.D + C.\bar{D}$$

Pour le segment E :

| A B \ C D | C D | | | |
|-----------|-----|-----|-----|-----|
| | 0 0 | 0 1 | 1 1 | 1 0 |
| 0 0 | 1 | 0 | 0 | 1 |
| 0 1 | 0 | 0 | 0 | 1 |
| 1 1 | X | X | X | X |
| 1 0 | 1 | 0 | X | X |

$$e = \bar{B}.\bar{D} + C.\bar{D}$$

Pour le segment F :

| A B \ C D | C D | | | |
|-----------|-----|-----|-----|-----|
| | 0 0 | 0 1 | 1 1 | 1 0 |
| 0 0 | 1 | 0 | 0 | 0 |
| 0 1 | 1 | 1 | 0 | 1 |
| 1 1 | X | X | X | X |
| 1 0 | 1 | 1 | X | X |

$$f = A + \bar{C}.\bar{D} + B.\bar{C} + B.\bar{D}$$

Pour le segment G :

| A B \ C D | 0 0 | 0 1 | 1 1 | 1 0 |
|-----------|-----|-----|-----|-----|
| 0 0 | 0 | 0 | 1 | 1 |
| 0 1 | 1 | 1 | 0 | 1 |
| 1 1 | X | X | X | X |
| 1 0 | 1 | 1 | X | X |

$$g = A + B.\bar{C} + C.\bar{D} + \bar{B}.C$$