



YOUR Group Details:

Group No:	10
Group Members (<i>Student IDs</i>):	Selina Yeoh Yun Ci (20620222) Tan Wei Sin (20619586) Wong Zi Xin (20603953) Wong Cheuk Kei (20602511)

Truth Table:

KEY:

- A (location)
- B (furniture)
- C (helpers)
- D (menu)

A	B	C	D	F (OUT)
0	0	0	0	0
0	0	0	1	0
0	0	1	0	0
0	0	1	1	0
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	0
1	0	1	1	0
1	1	0	0	1
1	1	0	1	1
1	1	1	0	1
1	1	1	1	1



Simplification:

$$\begin{aligned} & \mathbf{F(A,B,C,D)} \\ &= ABC'D' + ABC'D + ABCD' + ABCD \\ &= ABC'(D'+D) + ABC(D'+D) \\ &= ABC'1 + ABC1 \\ &= ABC' + ABC \\ &= AB(C'+C) \\ &= AB1 \\ &= AB \end{aligned}$$

(Complement Law: $A+A'=1$)
(Identity Law: $A1=A$)

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