

# Box and Cutlery Fit Report

"D:\Python practice\pycharmtut\pythonProject1\.venv\Scripts\python.exe" "D:\Python practice\pycharmtut\pythonProject1\Box\_and\_Cutlery\_Fit\_Report.py"

Box Data:

	Box ID	Dimensions (in inches)
0	BX1	7 x 7 x 7
1	BX2	10 x 10 x 10
2	BX3	12 x 12 x 12
3	BX4	16 x 12 x 10
4	BX5	16 x 16 x 12

Cutlery Data:

	CASE	SKU	QUANTITY	LENGTH	BREADTH	HEIGHT
0	1	PLATE10	1	10.0	10.0	4
1	1	MINIBOWL	4	3.5	3.5	4
2	1	BOWL5	4	5.0	5.0	4
3	2	TRAY22	1	22.0	12.0	2
4	2	TRAY14x10	2	14.0	10.0	4

Index(['Box ID', 'Dimensions (in inches)'], dtype='object')

Index(['CASE', 'SKU', 'QUANTITY', 'LENGTH', 'BREADTH', 'HEIGHT'], dtype='object')

	Box ID	Dimensions (in inches)	LENGTH	...	AREA_LB	AREA_BH	AREA_HL
0	BX1	7 x 7 x 7	7.0	...	49.0	49.0	49.0
1	BX2	10 x 10 x 10	10.0	...	100.0	100.0	100.0
2	BX3	12 x 12 x 12	12.0	...	144.0	144.0	144.0
3	BX4	16 x 12 x 10	16.0	...	192.0	120.0	160.0
4	BX5	16 x 16 x 12	16.0	...	256.0	192.0	192.0

[5 rows x 8 columns]

	CASE	SKU	QUANTITY	LENGTH	BREADTH	HEIGHT	AREA
0	1	PLATE10	1	10.0	10.0	4	100.00
1	1	MINIBOWL	4	3.5	3.5	4	12.25
2	1	BOWL5	4	5.0	5.0	4	25.00
3	2	TRAY22	1	22.0	12.0	2	264.00
4	2	TRAY14x10	2	14.0	10.0	4	140.00

	CASE	SKUs	...	Largest_Area	Total_Height
0	1	PLATE10, MINIBOWL, BOWL5	...	100.0	12
1	2	TRAY22, TRAY14x10, PLATE-R9, PLATE7	...	264.0	14
2	3	TRAY15, HEART6, ROUND13	...	169.0	8
3	4	MINIBOWL, BOWL6, ROUND-3P, HEART6, TRAY14	...	168.0	18

[4 rows x 5 columns]

All possible matches (before filtering by height):

	CASE	Box_ID	Matched_Face	Face_Area	Remaining_Dimension	Case_Height
0	1	BX2	LB	100.0	10.0	12
1	1	BX2	BH	100.0	10.0	12
2	1	BX2	HL	100.0	10.0	12
3	1	BX3	LB	144.0	12.0	12
4	1	BX3	BH	144.0	12.0	12
5	1	BX3	HL	144.0	12.0	12
...						
36	4	BX7	HL	288.0	12.0	18

Final Box Selections per Case (with fallback logic):

CASE	SKUs	Largest_SKU	Largest_Area	Total_Height	Box_ID	Matched
1	PLATE10, MINIBOWL, BOWL5	PLATE10	100.0	12	BX3	
2	TRAY22, TRAY14x10, PLATE-R9, PLATE7	TRAY22	264.0	14	BX7	
3	TRAY15, HEART6, ROUND13	ROUND13	169.0	8	BX4	
4	MINIBOWL, BOWL6, ROUND-3P, HEART6, TRAY14	TRAY14	168.0	18	BX5	

Process finished with exit code 0