

Box and Cutlery Fit Report

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"D:\Python practice\pycharm\pycharm\pythonProject1\.venv\Scripts\python.exe" "D:\Python practice\pycharmmt  
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
```