PRINTABLE REFERENCE CHART

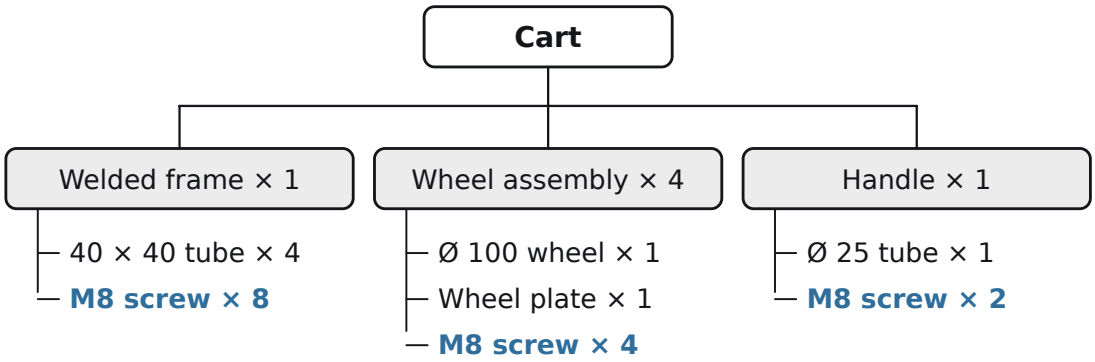
Single-level, multi-level and summarized BOM: a complete example

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1. One structure, four views

A bill of materials is made of **parent → child links, each with a quantity**: "the wheel assembly contains 4 M8 screws". Everything else is a way of reading those links. Systems (CAD, PDM, ERP) store the links and compute the views on demand.

View	What it shows	Quantities	Who uses it
Single-level	The direct components of a single item	Per parent (quantity per 1)	Sub-assembly workstation, ERP data entry
Multi-level (indented)	The whole structure, each line with its level	Per parent, often with extended quantities	Engineering, design reviews, manufacturing engineering
Summarized (flat)	Each item once, with no structure	Totals for the product	Purchasing, requirements planning, material costing
Where-used	The structure read upwards: every parent of a part	Per parent	Impact analysis of a change, replacing a part



2. The worked example: one cart, four readings

Indented multi-level BOM

Level	Item	Qty per parent	Extended qty
0	**Cart**	1	1
.1	Welded frame	1	1
..2	40 × 40 tube	4	4
..2	M8 screw	8	8
.1	Wheel assembly	4	4
..2	Ø 100 wheel	1	4
..2	Wheel plate	1	4
..2	M8 screw	4	16
.1	Handle	1	1
..2	Ø 25 tube	1	1
..2	M8 screw	2	2

Summarized BOM (for 1 cart)

Item	Total quantity	Where it comes from
M8 screw	**26**	8 (frame) + 4 × 4 (wheels) + 2 (handle)
40 × 40 tube	4	frame
Ø 100 wheel	4	4 wheel assemblies × 1
Wheel plate	4	4 wheel assemblies × 1
Ø 25 tube	1	handle

The summarized BOM above keeps purchased items only. You can also keep the manufactured sub-assemblies (frame × 1, wheel assembly × 4, handle × 1): it is a usage choice, to state at the top of the list. The **where-used** of the M8 screw answers "welded frame, wheel assembly, handle": three parents to check if the screw changes.

Reference values taken from the article https://www.baouch.fr/en/blog/nomenclature-multiniveau-indentee/, which explains the assumptions, formulas and edge cases. For critical use, check the current standard or the manufacturer's documentation. Free to print and share with credit to the source.