

```

1 {
2   "nodes": [
3     {"name": "a", "depth": 0}, {"name": "b", "depth": 1},
4     {"name": "c", "depth": 1}, {"name": "d", "depth": 2},
5     {"name": "e", "depth": 2}, {"name": "f", "depth": 2}
6   ],
7   "links": [
8     {"source": 0, "target": 1},
9     {"source": 0, "target": 2},
10    {"source": 1, "target": 3},
11    {"source": 2, "target": 4},
12    {"source": 2, "target": 5}
13  ],
14  "constraintDefinitions": [
15    {
16      "name": "layer",
17      "sets": {"partition": "depth"},
18      "forEach": [{ "constraint": "align", "axis": "x" }]
19    },
20    {
21      "name": "sort",
22      "sets": ["layer"],
23      "forEach": [{ "constraint": "order", "axis": "y", "by": "depth" }]
24    }
25  ]
26 }

```

a

3 sets: [a], [b,c], [d,e,f]

3 constraints

1 set: "layer"

8 constraints

```

1 {
2   "nodes": [
3     {"name": "a", "_id": 0, "depth": 0}, {"name": "b", "_id": 1, "depth": 1},
4     {"name": "c", "_id": 2, "depth": 1}, {"name": "d", "_id": 3, "depth": 2},
5     {"name": "e", "_id": 4, "depth": 2}, {"name": "f", "_id": 5, "depth": 2},
6     {
7       "name": "boundary0", "_id": 6, "cid": "set0_order", "temp": true,
8       "width": 1, "height": 1, "padding": 0, "fixed": true,
9       "boundary": "y", "y": 0, "x": 0
10    },
11    {
12      "name": "boundary1", "_id": 7, "cid": "set0_order", "temp": true,
13      "width": 1, "height": 1, "padding": 0, "fixed": true,
14      "boundary": "y", "y": 30, "x": 10
15    }
16  ],
17  "links": [...],
18  "constraints": [
19    {
20      "_type": "layer_align", "type": "alignment", "axis": "y",
21      "offsets": [{"node": 0, "offset": 0}]
22    },
23    {
24      "_type": "layer_align", "type": "alignment", "axis": "y",
25      "offsets": [{"node": 1, "offset": 0}, {"node": 2, "offset": 0}]
26    },
27    {
28      "_type": "layer_align", "type": "alignment", "axis": "y",
29      "offsets": [{"node": 3, "offset": 0}, {"node": 4, "offset": 0}, {"node": 5, "offset": 0}]
30    },
31    {"_type": "set0_order", "axis": "y", "gap": 0, "left": 0, "right": 6},
32    {"_type": "set0_order", "axis": "y", "gap": 0, "left": 6, "right": 1},
33    {"_type": "set0_order", "axis": "y", "gap": 0, "left": 1, "right": 7},
34    {"_type": "set0_order", "axis": "y", "gap": 0, "left": 6, "right": 2},
35    {"_type": "set0_order", "axis": "y", "gap": 0, "left": 2, "right": 7},
36    {"_type": "set0_order", "axis": "y", "gap": 0, "left": 7, "right": 3},
37    {"_type": "set0_order", "axis": "y", "gap": 0, "left": 7, "right": 4},
38    {"_type": "set0_order", "axis": "y", "gap": 0, "left": 7, "right": 5}
39  ]
40 }

```

c

Two temporary nodes are added to the graph to act as boundaries for the order constraint.

We generate three WebCoLa alignment constraints: one for each set produced by the SetCoLa "layer" constraint definition.

We generate eight WebCoLa position constraints to order the three layers based on the SetCoLa "sort" constraint definition.