Sparse matrix representations

Basic representations

- The rank zero cells below a cell $x \in S$ are called the vertices of x, that is the least upper bound of its vertices.
- So we can identify each cell with its set of vertices.
- Thus, to define S, we start from the vertex set S_0, and specify the vertex subsets which correspond to the cells, and the rank of each cell.
- The partial order is induced by set inclusion.

Characteristic matrix $M_2 : C_0 \to C_2$

$$M_2 = \begin{pmatrix} 1 & 0 & 1 & 0 & 1 & 0 & 1 \\ 0 & 1 & 0 & 0 & 1 & 1 & 1 \\ 0 & 1 & 0 & 1 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 1 & 1 \end{pmatrix}$$