E8.84 [OKV]Prerequisites:[OJ1].Let $X = \{1, 2, 3\}$ and let $\mathcal{B} = \{\{1, 2\}, \{2, 3\}\}$; let τ be the smallest topology that contains $\mathcal{B}$, show that $\mathcal{B}$ is not a base for τ.

Solution 1. *[OKW]*

It is therefore interesting to try to understand when a family $\mathcal{B}$ can be the base for a topology.