## **Discussion Notes**

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If X is an  $F_{\sigma}$  set, then

$$X = \bigcup_{i=1}^{\infty} F_i$$
 with each  $F_i$  closed.

If X is a  $G_{\delta}$  set, then

$$X = \bigcap_{i=1}^{\infty} G_i$$
 with each  $G_i$  open.