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Given a finite field F and an undirected graph G on n vertices, let $S(F, G)$ be the set of all symmetric $n \times n$ matrices over F whose nonzero off-diagonal entries occur in exactly the positions corresponding to the edges of G . Let $\text{mr}(F, G)$ be the minimum rank of all matrices in $S(F, G)$. The characterization of graphs G having $\text{mr}(F, G) \leq k$ has an interesting connection with incidence graphs of projective geometries. For example, complements of Erdős-Rényi graphs can be used to characterize the set $\{G \mid \text{mr}(F, G) \leq 3\}$. I will describe the connection to projective geometries and give a progress report of results in the minimal rank problem. (Received August 26, 2005)