**Solution**

To solve this problem, first we want to show that Hitting Set is in NP. We do this by showing that there is some way to verify a proposed solution to this problem in polynomial time. Given a subset H, we can quickly check if it's the right size and if each element in $B_i$ is in $H$. So Hitting Set is in NP.

Next, Hitting Set looks like a covering problem so we will use Vertex Cover and show that $VertexCover <_p HittingSet$. To do this, we will transform an instance of Vertex Cover $(G, k)$ into a version of Hitting Set $((A, B_1, ..., B_n), k)$. So graph $G$ is some vertex set and some edge set. To translate this to hitting set, we can imagine the vertices of $G$ as our set $A$, and each edge as representing a subset $B_i$ such that each two vertices connected by an edge is a subset $B_i$ of $A$. With this construction, we can see that a subset of A that hits every subset $B_i$ is exactly a subset of vertices that touches every edge. Therefore, we have a hitting set of size $k$ precisely when we have a vertex cover of size $k$. Additionally, if we do not have a vertex cover of size $k$ then we do not have a hitting set of size $k$.