

So an instance for CLIQUE would be something like $\langle G = \langle V, E \rangle, k \rangle$, and an instance for CNFSAT would be something like $C_1 \wedge C_2 \wedge C_3$, where C_i being a clause that contains literals. First, think of the clique of size k as a k -tuple. For each $u \in V$, for each $i = 1, \dots, k$, let $x_{u,i} = 1$ if and only if the vertex u occupies position i in the k -tuple that's the clique. Now, for the $x_{u,i}$'s, there would exist a vertex v for each position i in the k -tuple, it means there exists at least k vertices that's in the clique. Now, let each $x_{u,i}$ that's equal to 1 be a clause of the instance for CNFSAT, it would satisfy if and only if CLIQUE satisfies. Because for $x_{u,i}$'s, they are only a clause when they equal to 1, hence the instance for CNFSAT would be $1 \wedge 1 \wedge \dots \wedge 1$, which is satisfied. And when there's no $x_{u,i} = 1$ for any i in the k -tuple, the CLIQUE isn't satisfied and CNFSAT isn't satisfied either, as $1 \wedge 1 \wedge 0 \wedge \dots \wedge 1$ is not satisfied, hence $\text{CLIQUE} \leq_k \text{CNFSAT}$.