**Abstract**

 A k‐plex is a clique relaxation brought in social network analysis to version cohesive social subgroups that allow for a confined wide variety of nonadjacent vertices inside the cohesive subgroup. Numerous algorithms and heuristic processes to discover a most‐size k‐plex inside the graph had been developed these days for this np‐hard problem. This work introduces and researches the maximum k-plex trouble, that's a mission in social community analysis, and graph-based records mining. The most clique trouble presents a classic framework for detecting cohesive sub graphs. A clique model is one of the maximum important strategies on the cohesive sub graph detection; but, its programs are instead restrained because of restrictive conditions of the model. Subsequently lots studies resorts to k-plex - a graph wherein any vertex is adjoining to all however at most k vertices - which are a rest model of the clique. This work proposes to compute most k-plexes via exploiting the structural houses of the network. Additionally, it focuses on the maximal k-plex algorithm for deriving sub-agencies from a sports person’s network and uses sub graph measures such as in-degree k-plex and out-degree k-plex for comparing the sub-communities.