

We propose an algorithm for connecting nodes from multiple disconnected graphs based on a given tuple set representing shared knowledge. The set of tuples is used to create bridgeedges for combining two graphs. The path from a node in a graph to a node in the other graph passes through a bridgeedge. This method of combining two graphs will enable more comprehensive understanding and exploring of the relatedness of the knowledge entities (the nodes) in two graphs based on a given domain knowledge represented in the set of tuples. This approach has useful applications in various domains and in particular in bioinformatics. In bioinformatics, for example, we can explore the functional relationship between two gene products given their Gene Ontology annotation terms from the molecular function MF and biological process BP graphs of GO. Moreover, the proposed algorithm can be applied to WordNet to enable exploring the relative degree of relatedness of words from multiple lexical hierarchies, like nouns and verbs, within the WordNet.