The Assembly Graph Module

Main purpose:
To construct, manipulate, and store assembly graphs.

Contained classes:

- *GraphNodeType* class: This is the type that defines assembly graph node. Each node contains an unbranched sequence in the assembly. The sequence it contained is a BioSequence type.

- *GraphEdgeType* class: This is the type that defines assembly graph edge. Each edge contains the overlap between the two corresponding nodes.

- *GraphEssential* class: This is the class for essential functions of graph. Such as adding/removing nodes/edges, checking whether an edge exist between two nodes, getting the number of nodes/edges, and the degree of a node etc. This class includes the GraphNodeType and GraphEdgeType classes.

- *GraphPrune* class: This is the class that defines operations for altering the topology of the graph. For example, merging unbranched paths, deleting tips, removing bubbles etc. This class inherits the GraphEssential class.

- *GraphTraversal* class: This is the class that defines traversals of the graph. For example, depth-first search, breath-first search, finding Eulerian path etc. This class inherits the GraphEssential class.

- *GraphAnalysis* class: This is the class analyzes different properties of the graph. For example, the connectivity, the completeness, the degree distribution (how branchy it is) of the graph. The class needs to access to external reference databases. This class also includes the sequence alignment module.

- *AssemblyGraph* class: This is the wrapper class for the Assembly Graph Module. It includes the GraphEssential, GraphPrune, GraphTraversal, and GraphAnalysis classes.