**LP5: Matching**

**G97**

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In these project we have implemented the Level 1 of the project maximum cardinality matching in a given bipartite graph.

**Steps:**

* Use BFS to test if the input graph is bipartite: partition the nodes into V = X U Y (outer and inner nodes), by placing nodes in even layers in X, and nodes in odd layers in Y. All edges must connect a node in X to a node in Y. If any edge of the graph connects 2 nodes of X, or 2 nodes of Y, then the graph is not bipartite. If the graph is not bipartite, then output the message "G is not bipartite" and exit.
* If the graph is bipartite, we run the maximum cardinality matching algorithm for the given graph and output the maximum matching.