# Tutorial/Lab 10 – Unweighted and Weighted Graphs

Aim

This tutorial/lab aims to explore unweighted graphs and weighted graphs, as well as the associated algorithms such as BFS and Prim's MST.

Exercise 10.1 Testing Bipartite with BFS

- A graph is bipartite (equivalently, 2-colorable) if the vertices of the graph can be divided into two disjoint sets such that no edges exist between vertices in the same set.
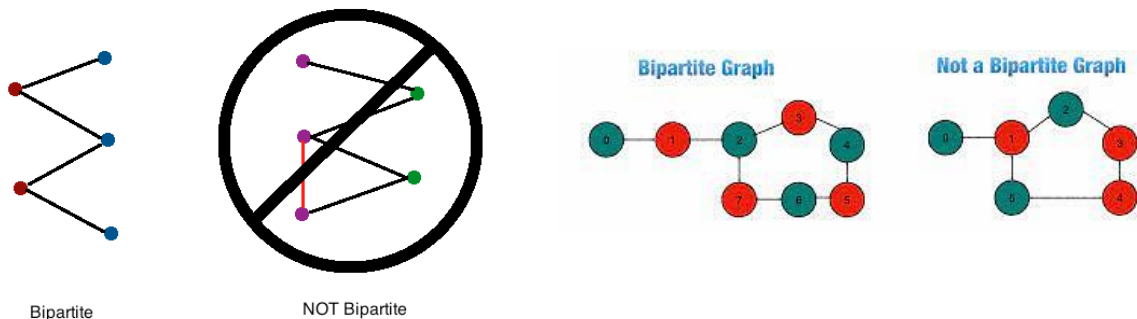
- Write a method to detect whether the graph is bipartite: public boolean isBipartite() using BFS.

Exercise 10.2 Generate Adjancency Matrix

- Create a helper method named getAdjacentMatrix() to generate an adjancency matrix representation of a weighted graph.
- Use a 2D array of doubles: Double[][].

Exercise 10.3 Prim's with Adjacency Matrix

- In the lecture, we implemented Prim's algorithm using an adjacency list.
- Implement the algorithm using an adjacency matrix for weighted graphs, using the helper method from the previous exercise.

This is the end of CPT204-2425 Tutorial/Lab 10 Task Sheet.

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