# Assignment 8

# Due at the end of your lab

1. Implement the basic Breadth-First Search (BFS) algorithm. Adapt it to develop code for the following additional problems:

* Write a routine to classify edges as tree edges, vertical cross-edges and horizontal cross-edges for BFS of an undirected graph.
* Finding out whether an undirected graph is connected or not.
* Counting the number of components of an undirected graph
* Deciding whether a graph is bipartite or not
* Finding a shortest cycle in an undirected graph
* Find the eccentricity of each vertex of a graph; Find the radius, diameter and centre of a graph
* Find a largest matching in a bipartite graph, by using modified BFS to look for augmenting paths