# Programming Assignment 7: Network Flow - Ford-Fulkerson Algorithm

## Objective

Implement the Ford-Fulkerson algorithm to compute the maximum flow in a flow network. You will be given a directed graph where each edge has a capacity, and you must determine the maximum amount of flow that can be sent from a source node $s$ to a sink node $t$.

## Assignment Details

1. **Input:**
   - The input graph is represented as an adjacency matrix or adjacency list, where:
     - Each edge has a non-negative integer capacity.
     - Vertices are labeled as integers from 0 to $n-1$.
     - The source node is node 0 and the sink node is node $n-1$.
2. **Output:**
   - The program should output the maximum flow value from the source to the sink.
3. **Constraints:**
   - Assume that all capacities are integers.
   - The graph has no negative capacities.
   - You may assume that a path always exists from the source to the sink.
4. **Algorithm:**
   - Implement the **Ford-Fulkerson algorithm** using the **BFS-based approach** for finding augmenting paths.