

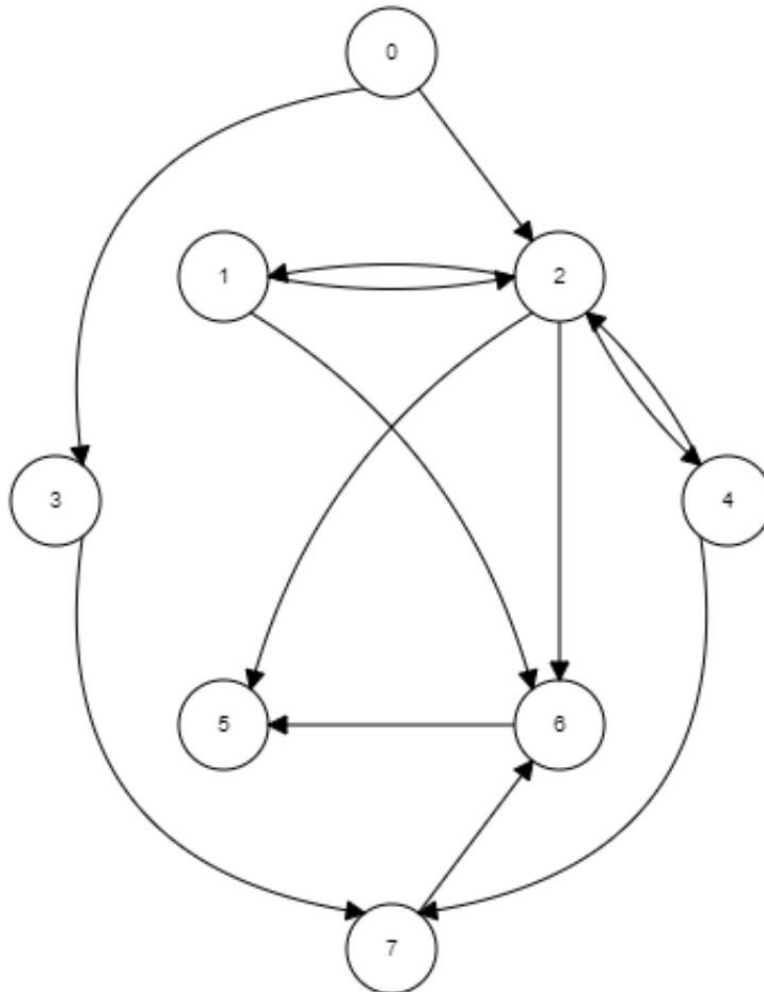
COSC 3304 – Algorithms Design and Analysis

Assignment 10

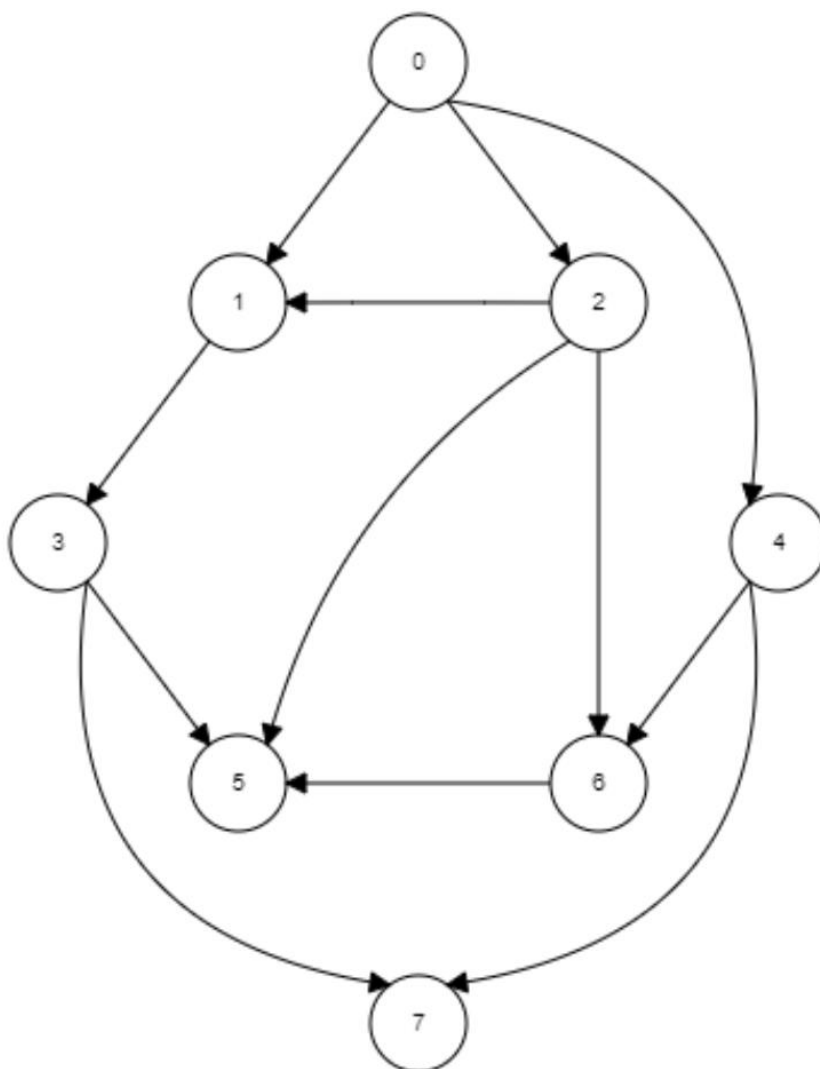
Due: 23:59:00pm, 04/20/2024

1. Please show the Huffman tree to find Huffman codes for letters 'a', 'b', 'c', 'd', and 'e' in the character string 'addcebeadbadaeddbacadceabaeddade' and decode the binary string '0111110000100011' (25 points)

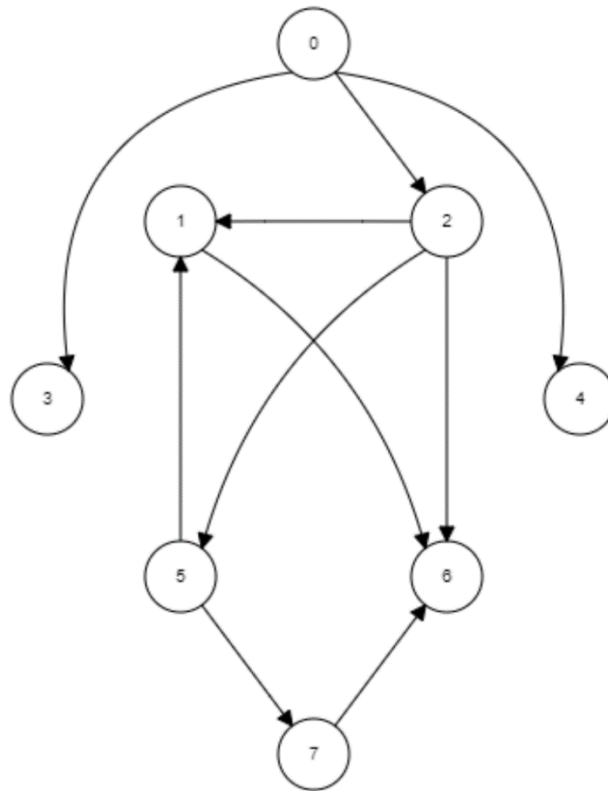
2. Please show the *adjacency list* and *adjacency matrix* of the graph below. (20 points)



3. Please use **BFS** to search the graph below and show every updated queue. The **vertex 0** is the start vertex and all adjacent vertices are enqueued in **increasing order** (25 points)



4. Please use **DFS** to search the graph below and show the type of each edge in the graph. Assume the first selected vertex is **vertex 0** following the **increasing order** for searching.



DFS (20 points)

| | | | | | | | | |
|--------------------------|---|---|---|---|---|---|---|---|
| Vertex | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Timestamp (d: start) | | | | | | | | |
| Timestamp (f: finish) | | | | | | | | |

Edge Type (10 points)

[illegible]