

Practicals\Q7\Q7.py

```
1 # Write a Program to check if a given graph is a complete graph. Represent the graph using
2 # the Adjacency List representation.
3
4 def is_complete_graph(adjacency_list):
5     num_vertices = len(adjacency_list)
6
7     # Check if each pair of vertices is connected
8     for i in range(1, num_vertices + 1):
9         for j in range(1, num_vertices + 1):
10             if i != j and j not in adjacency_list[i]:
11                 return False
12
13     return True
14
15 # Example usage
16 graph = {
17     1: [2, 3, 4], # Vertex 1 is connected to vertices 2, 3, and 4
18     2: [1, 3, 4], # Vertex 2 is connected to vertices 1, 3, and 4
19     3: [1, 2, 4], # Vertex 3 is connected to vertices 1, 2, and 4
20     4: [1, 2]    # Vertex 4 is connected to vertices 1, 2, and 3
21 }
22
23 result = is_complete_graph(graph)
24 if result:
25     print("The graph is a complete graph.")
26 else:
27     print("The graph is not a complete graph.")
28
```