**03. Max Sum Longest Path in DAG**

**Condition:**

Given an acyclic directed graph with edge values, your goal is to find the longest path from a given starting vertex to one of the edges of the graph, such that the sum of the edge values along this path is maximized.

**Input:**

The input consists of the number of vertices in the graph **N**, followed by a description of the vertices and their edges. For each vertex, a list of vertices to which an edge exists and their values are provide.

**Limitations:**

* The number of vertices does not exceed 1000.
* The edge values are integers in the interval [-1000, 1000].

**Output:**

Derive the longest path from the starting vertex to any of the graph's edges and the sum of the edge values along this path.

**Examples:**

|  |  |
| --- | --- |
| **Input** | **Input** |
| 5  1 2 3 4  2 3 4  3 4  4 | 1 -> 3 -> 4 -> 5  Total: 9 |