

CSC373 Worksheet 4

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Source: [link](#)

1. **CLRS 22.1-1:** Given an adjacency-list representation of a directed graph, how long does it take to compute the out-degree of every vertex? How long does it take to compute the in-degrees?
2. **CLRS 22.1-3:** The transpose of a directed graph $G = (V, E)$ is the graph $G^T = (V, E^T)$, where $E^T = \{(v, u) \in V \times V : (u, v) \in E\}$. Thus, G^T is G with all its edges reversed. Describe efficient algorithms for computing G^T from G , for both the adjacencylist and adjacency-matrix representations of G . Analyze the running times of your algorithms.