

EECS3101 (Section E) Summer 2026  
Tutorial 8  
Comparing Graph Implementation Strategies

Chen-Wei Wang

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**No Submission Required: Complete for Learning & Test Prep**

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# 1 Exercise: Edge List vs. Adjacency List vs. Adjacency Matrix

In implementing a graph, compare the **time complexities** of the following operations among the three strategies:

1. `numVertices()`, `numEdges()`
2. `vertices()`, `edges()`
3. `getEdge(u, v)`
4. `outDegree(u)`, `inDegree(u)`, `inEdges(v)`, `outEdges(v)`
5. `insertVertex(x)`
6. `removeVertex(x)`
7. `insertEdge(u, v, x)`, `removeEdge(e)`