

Data Structures Quiz 10 (20 minutes)

Name: _____ NetID: _____

By participating in this quiz, you agree to adhere to the honor code.

Let u and v be two `Vertex<V>` in a `Graph<V,K>` graph that you know are not adjacent. Write a method

```
boolean distanceTwo(Vertex<V> u, Vertex<V> v)
```

that determines if there is a directed path of length two from u to v . Your method should call `getIncoming` or `getOutgoing` at most twice. If n is the number of vertices, m is the number of edges, and d is the maximum degree, what is the complexity of your algorithm in the case of adjacency map implementation?

Bonus (1 point): What is the complexity in the two other implementations (Edge List and Adj. Matrix)?