

1. Adjacency list. The number of web pages on the internet is too large, and each web page will only link to a tiny portion of the total pages available on the internet. Using a matrix will take too much space, and the vast majority of the matrix will be empty, wasting memory.
2. Adjacency matrix. It is likely that each vertex will have an edge directed to every other vertex in the graph, because, if we start at any airport in the US and allow unlimited number of stops, we can probably go to any other airport. Then, there is no memory advantage for using adjacency list over matrix; and we can take advantage of the constant time lookup in a matrix.
3. Adjacency list. Since the vertices are representing different types of objects (people and movies), we can be certain that edges will only connect vertices of different types (no person-person or movie-movie edges), then a matrix become a bad choice since a significant amount of memory is wasted. Although it can be solved by making the rows of matrix contain only people and columns only contain movies, most people will only watch a small portion of the total movies and becomes a similar situation as (1).