Assignment1

a) Edge list
   [[A,B],[A,C],[B,F],[C,B],[C,D],[C,E],[E,D],[E,F]]
b) Adjacency lists
   A -> [B,C]
   B -> [F]
   C -> [B,D,E]
   D -> []
   E -> [D,F]
   F -> []
c) Adjacency matrix

   0 1 1 0 0 0
   0 0 0 0 0 1
   0 1 0 1 1 0
   0 0 0 0 0 0
   0 0 0 1 0 1
   0 0 0 0 0 0

Assignment 2:
For this problem, I would pick an adjacency list, because the insertion and deletion of the nodes is frequent, so the complexity will be for inserting O(1) and deleting O(deg(v)), which is much better compared to both edge list or adjacency matrix. However, the number of edges is always close to N*N in this case. This means that space complexity is worse compared to adjacency matrix. Despite this I would choose adjacency list, because nowadays memory in nowadays computers is not a problem, and saving performance and program complexity is important.

Assignment 3:
i)
A,B,F,G,H,E,D,C

ii)
C,D,F,E,G,H