Use the graph data structure to implement a basic social networking service (for e.g. LinkedIn kind of application). Your service should allow following operations

1. Addition of a new user and entry of his/her relevant data (for e.g. educational institute

and duration at each place, hobby).

2. Find current and past (school/college)mates on the network

3. To get connected with a friend (no need for approval)

4. To know if given person A is connected to another person B on the network, the

degree of separation and paths via which they are connected to each other (displaying

names of intermediate persons)

5. To show contact-list and complete network for a given person

6. Maximum degree of separation currently present on the network (for connected

people)

7. Listing of potential groups based on similar hobbies

8. Listing of latest connections for everyone in the contact-list of a particular person

9. Show mutuals between two users.

10. Determine whether a cycle exists in the user connections.

11. Deletion of a userid