

# Confidential-Do Not Copy

## Social Network Question

You are designing a new social networking component for Amazon Instant Video. The focus of this component is to create networks of customers and movies so we can create a more personalized customer viewing experience.

With that in mind, we will use the following basic concepts to build out the service:

1. Movie – A movie represents a piece of content and has the following trait:
  - a. A list of similar movies (symmetric)
2. Customer – A Customer is a user of our service and has the following traits:
  - a. A friends list (symmetric).
  - b. A list of “liked” movies.
  - c. A list of “watched” movies.

By keeping track of this information we can create high-value, relevant initiatives that benefit Amazon’s number one focus: the Customer.

Your task is to implement an interface we have defined, in any of the following languages: C++, Java, or C#. Your solutions must conform to these **MANDATORY** items:

1. **DO YOUR OWN WORK.** If it appears not to be your own work, it will be disqualified. In addition, limit your solution to the standard libraries available in your language. Do not use any databases, external libraries, or third party solutions.
2. **CODE MUST COMPILE.** Solutions must compile and function at a minimum for consideration however additional credit will be given for elegant and robust code.
3. **DOCUMENT ALL ASSUMPTIONS.** Explain why you made that assumption. You may make the wrong assumption, but if it’s well-documented, you’ll help us see your thought process. Undocumented assumptions can’t help us help you.
4. **DESCRIBE THE RUNTIME AND SPATIAL COMPLEXITY OF YOUR SOLUTIONS.** This must be stated somewhere in your solution for each of the questions, preferably in the comments above each solution. Runtime and spatial analyses are core elements of software engineering. Because of this, solutions without runtime and spatial analyses will not be considered.
5. **PROVIDE THE MOST EFFICIENT SOLUTION POSSIBLE.** We will be evaluating the quality of your algorithm.
6. **HAVE FUN.** This will likely be challenging, but take this opportunity to exercise your creativity.

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