The Theory of Computation
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Solution Manual
Chapter 2, Additional Problem 2.3

The key is that every question "does i know j?" eliminates either i (if the answer is "yes") or j (if the answer is "no"). Thus asking $n-1$ questions will eliminate all but one candidate (there cannot be more than one star in any meeting, by definition—the two stars could not both know and not know each other); the choice of question is arbitrary, as long as it does not involve any of the eliminated persons. The following pseudocode does the job:

```
tester = 1; candidate = 2;
for i=1 to n-2 do
    if tester knows candidate
       then tester = candidate (* tester is eliminated *)
       (* else candidate is eliminated--nothing to do *)
    candidate = candidate+1
(* last test: which of the two is the candidate? *)
if candidate knows tester
    then candidate = tester
```

Once we have that one candidate, we need to ascertain that (s)he is a star; since we may not yet have asked any question in which that person appeared, we need to check that everyone else knows that person ($n-1$ questions at most) and also that that person knows no one (another $n-1$ questions at most).