PROPOSED SOLUTION
OBLIG-II

I a)

- What are the potential initial events of **sd** interview. Explain your answer. (Hint: there is more than one)

- Answer: There are two:
  - !open application
  - !question

I b)

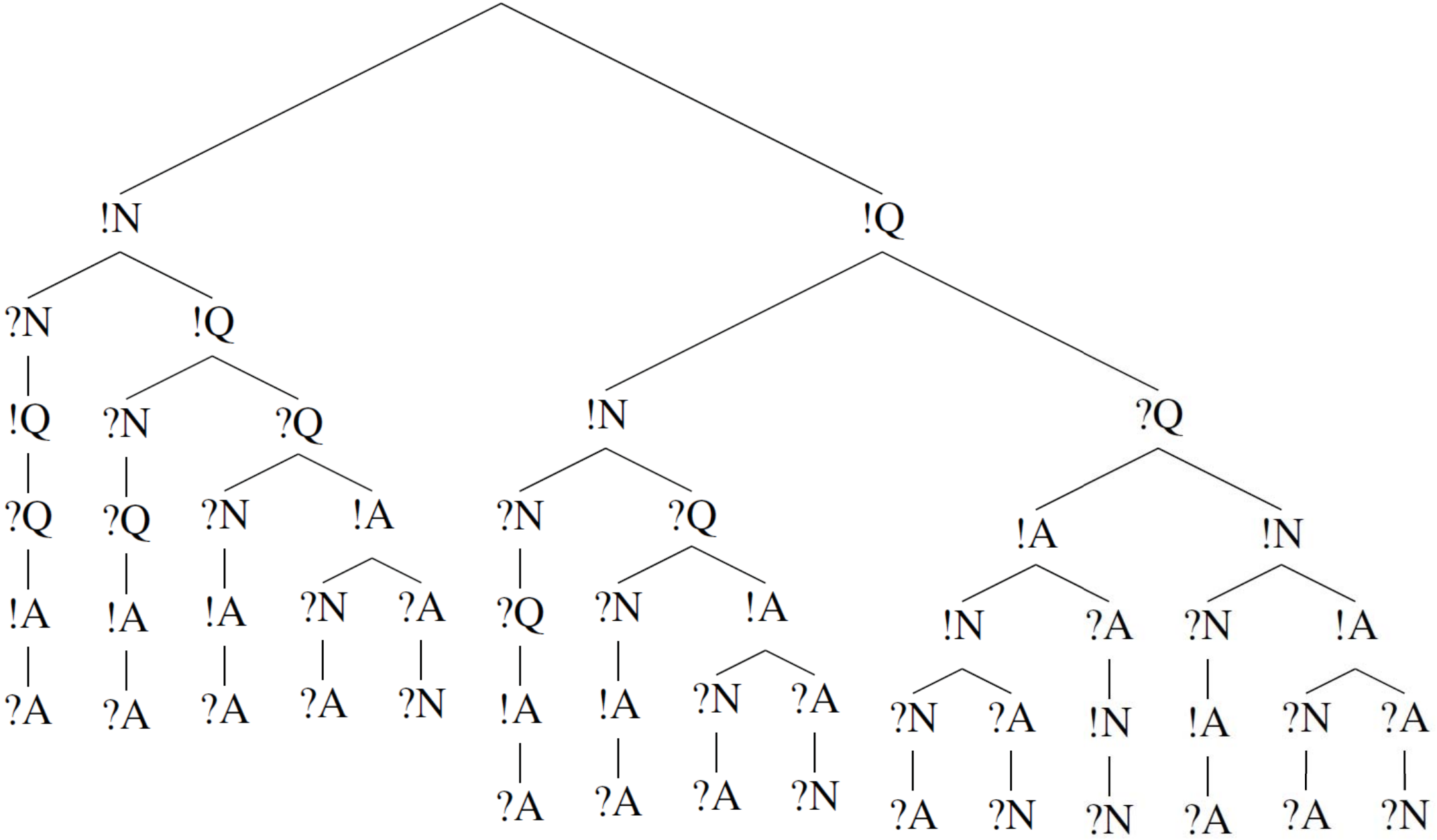
- What are the potential last events of **sd** interview. Explain your answer. (Hint: there is more than one)

- Answer: There are two:
  - ?close
  - ?answer

I c)

- Consider the first operand of the **alt** construct. Make a tree describing all possible traces of this operand.

- Answer: See next page
  - N is shorthand for note
  - Q is shorthand for question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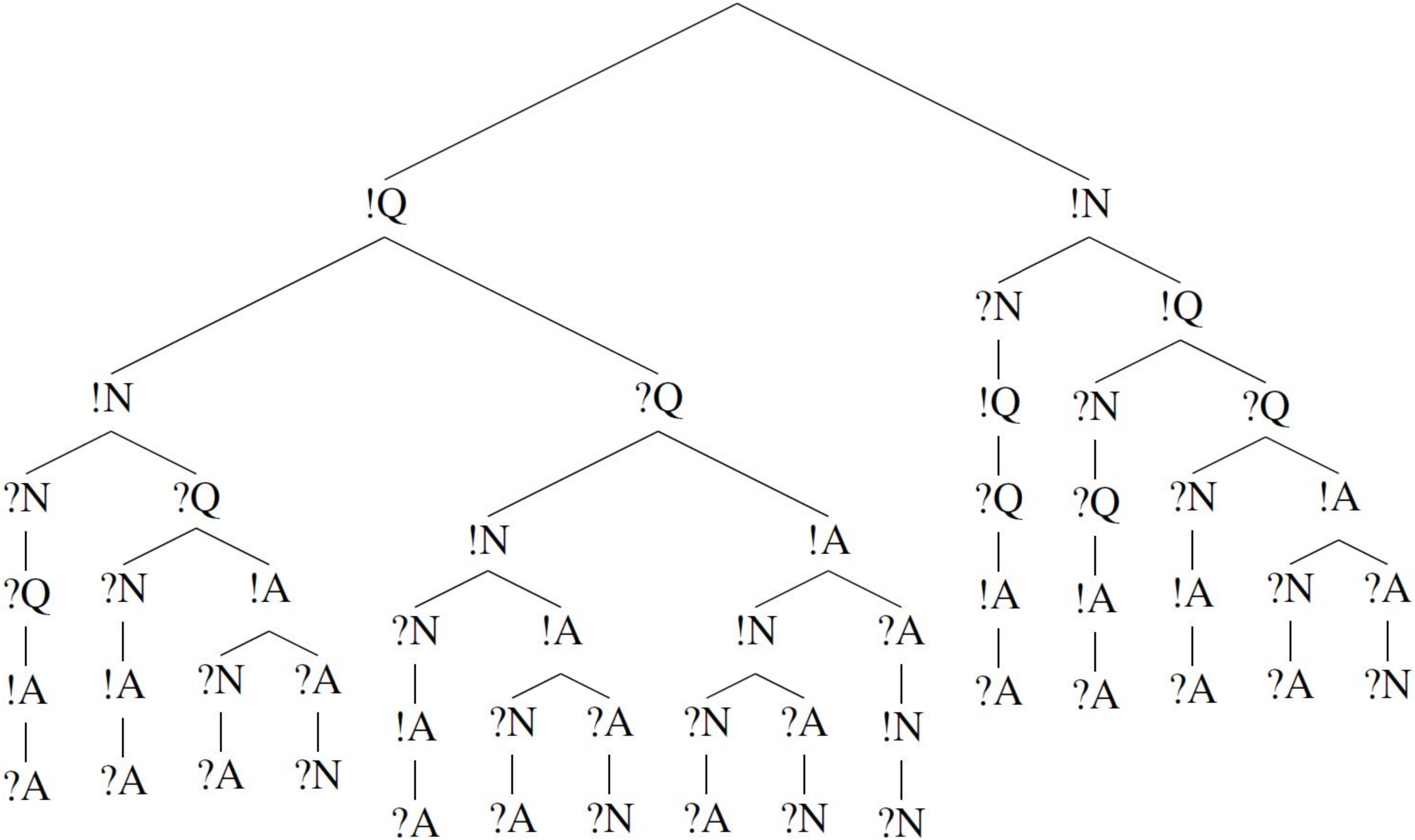
I c)

- Consider the second operand of the **alt** construct. Make a tree describing all possible traces of this operand.

- Answer: See next page
  - N is shorthand for note
  - Q is shorthand for question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II a)

- Is **sd** interview' a narrowing of **sd** interview? Explain your answer.

- Answer: **sd** interview' contains negative traces that are inconclusive in **sd** interview. Since narrowing by definition leaves the set of inconclusive traces unchanged it is not a narrowing.

II b)

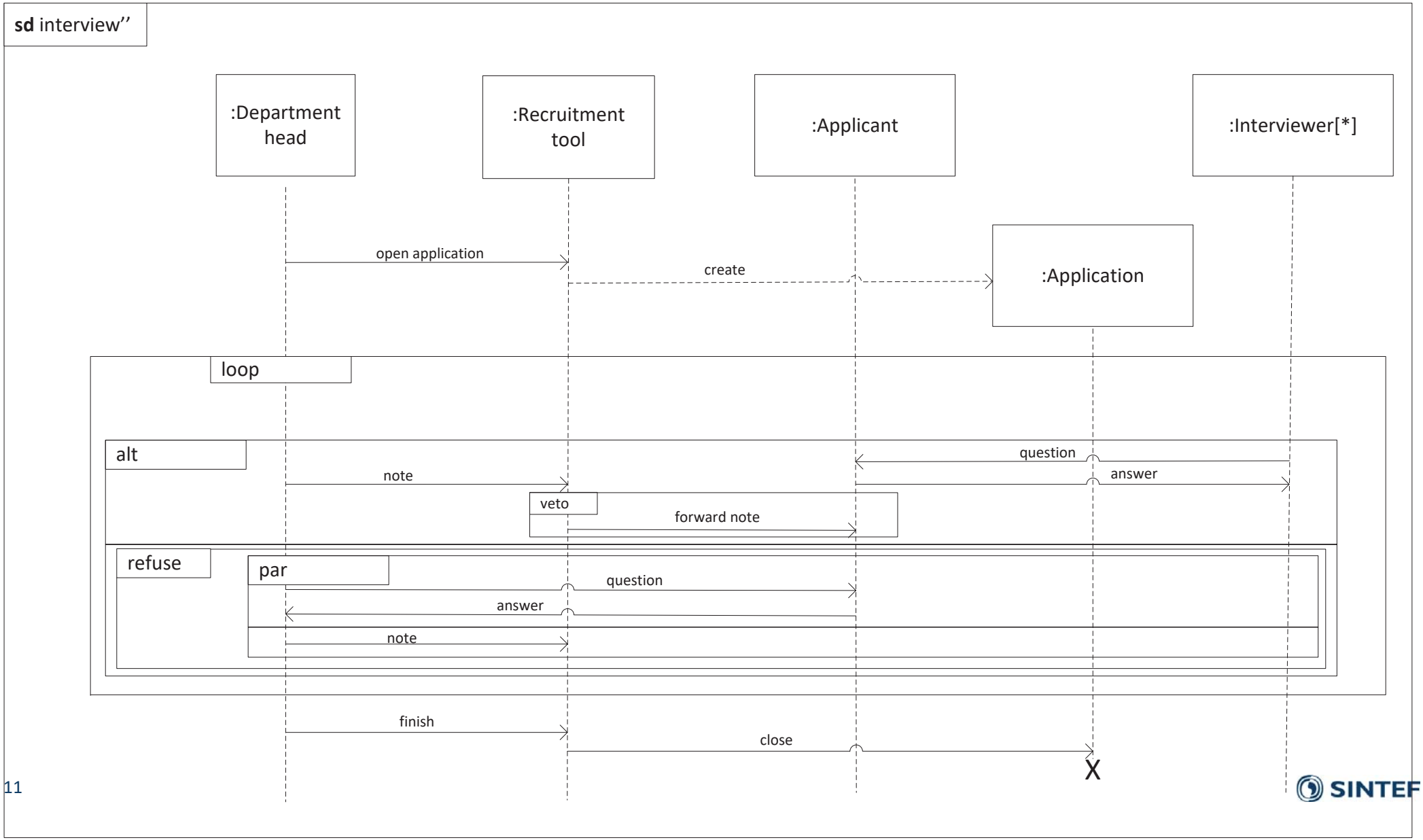
- Is **sd** interview' a supplementing of **sd** interview? Explain your answer.

- Answer: The positive traces of **sd** interview' are exactly the same as for **sd** interview. **sd** interview is without negative traces while **sd** interview' describes a set of negative traces that are inconclusive in **sd** interview. By definition, this means we have a supplementing.

II c)

- Make a diagram **sd** interview'' that is a narrowing of **sd** interview'. Explain your answer.

- Answer: By surrounding the par-construct in the second operand of the alt-construct with a refuse (see next page), we make the traces corresponding to the second operand of the alt-construct negative. The traces corresponding to the first operand of alt remains positive and the inconclusive traces are unchanged. Hence, the result is a narrowing.


sd interview''
:Department head
:Recruitment tool
:Applicant
:Interviewer[*]
open application
create
:Application
loop
alt
question
note
answer
veto
forward note
refuse
par
question
answer
note
finish
close
X

SINTEF

II d)

- Let **sd** interview''' be the sequence diagram obtained from **sd** interview' by replacing **alt** with **xalt**. How many interaction obligations is there in [[**sd** interview''']] (in the semantics of **sd** interview''')?

- Answer: We get 2*N where N is the number of iterations. The loop may iterate any finite or infinite number. Hence, the answer is infinitely many.