## 16 Lecture - CS402

## Important Subjective

1. What is an NFA with null transitions?

Answer: An NFA with null transitions is an extension of the basic NFA that allows transitions to be made without consuming any input symbols.

What is the difference between an NFA and an NFA with null transitions?
Answer: The main difference is that an NFA with null transitions can make transitions without consuming any input symbols, whereas a basic NFA cannot.

How can an NFA with null transitions be converted to an NFA without null transitions? Answer: An NFA with null transitions can be converted to an NFA without null transitions by adding new states and transitions that simulate the null transitions.

## What is the purpose of null transitions in an NFA?

Answer: The purpose of null transitions is to allow an NFA to recognize languages that contain null strings.

What is the role of epsilon in an NFA with null transitions?
Answer: Epsilon is used to represent the null string transition in an NFA with null transitions.
How can you determine if a string is accepted by an NFA with null transitions?
Answer: To determine if a string is accepted by an NFA with null transitions, you can simulate the NFA on the input string and see if it ends in an accepting state.

What is the advantage of using an NFA with null transitions over a DFA?
Answer: An NFA with null transitions can recognize more languages than a DFA can.
Can an NFA with null transitions recognize all regular languages?
Answer: Yes, an NFA with null transitions can recognize all regular languages.
What is the relationship between NFA with null transitions and regular expressions? Answer: NFA with null transitions can be used to construct regular expressions for languages that can be recognized by an NFA with null transitions.

How can you determine if an NFA with null transitions is equivalent to a DFA?
Answer: To determine if an NFA with null transitions is equivalent to a DFA, you can construct the DFA that recognizes the same language as the NFA with null transitions and then compare the two machines.

