

# 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.