

22 Lecture - CS402

Important Subjective

1. **What is the concept of equivalent machines?**

Answer: Equivalent machines are two or more machines that recognize the same language.

How can we show that two machines are equivalent?

Answer: We can show that two machines are equivalent using the Myhill-Nerode theorem.

What is the importance of equivalent machines in automata theory?

Answer: Equivalent machines allow us to simplify and optimize machines without changing their language recognition capabilities.

Can two machines that recognize different languages be equivalent?

Answer: No, two machines that recognize different languages cannot be equivalent.

Can two machines that have different number of states be equivalent?

Answer: Yes, two machines that have different number of states can be equivalent.

What is the algorithm used to check the equivalence of two machines?

Answer: Hopcroft's algorithm is used to check the equivalence of two machines.

Can non-deterministic machines be converted to equivalent deterministic machines?

Answer: Yes, non-deterministic machines can be converted to equivalent deterministic machines.

Is the language recognized by equivalent machines always regular?

Answer: Yes, the language recognized by equivalent machines is always regular.

Can equivalent machines be simplified without changing their language recognition capabilities?

Answer: Yes, equivalent machines can be simplified without changing their language recognition capabilities.

How can we minimize the number of states in equivalent machines?

Answer: We can minimize the number of states in equivalent machines using algorithms like Hopcroft's algorithm or Brzozowski's algorithm.