

21 Lecture - CS402

Important Subjective

1. What is a Mealy machine?

Answer: A Mealy machine is a type of Finite State Machine in which the outputs are a function of both the current state and the input symbol.

What is the primary difference between a Mealy machine and a Moore machine?

Answer: The primary difference is that the output in a Mealy machine is produced at the transitions between states, while in a Moore machine, the output is generated only based on the current state.

What is the purpose of the output function in a Mealy machine?

Answer: The output function in a Mealy machine is used to perform some action based on the input, such as generating an output signal.

How many types of Mealy machines are there?

Answer: There is only one type of Mealy machine.

Can the output of a Mealy machine depend on the future input?

Answer: No, the output of a Mealy machine cannot depend on the future input.

What is the state transition function in a Mealy machine used for?

Answer: The state transition function in a Mealy machine is used to determine the next state based on the current state and input symbol.

What is the difference between the input alphabet and the output alphabet in a Mealy machine?

Answer: The input alphabet is the set of input symbols that the machine accepts, while the output alphabet is the set of symbols that the machine can generate as output.

How is a Mealy machine represented?

Answer: A Mealy machine is represented as a directed graph, where the nodes represent the states, and the edges represent the transitions between states.

What is the purpose of the initial state in a Mealy machine?

Answer: The initial state is the starting point of the machine, and it is used to determine the first output.

What is the computational power of a Mealy machine compared to a Turing machine?

Answer: A Mealy machine is less powerful than a Turing machine, as it can only recognize regular languages.