



GEETHANJALI INSTITUTE OF SCIENCE & TECHNOLOGY :: NELLORE
Department of Computer Science and Engineering

Name of the Subject	Formal Languages and Automata Theory	Class	II Year II Sem
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Muddiest Point in the FLAT lectures

Introduction:

Muddiest Point is probably the simplest classroom assessment technique available. It is a **quick monitoring technique** in which students are asked to take a few minutes to write down the most difficult or confusing part of a lesson, lecture, or reading.

Topics: Unit-I

- Mealy machine of 2's complement of a given number.
- Minimization of finite automata using Myhill Nerode theorem.

Objective of the activity:

- Improve student learning and the teaching style
- Provides information on what students are not clear or most confusing
- It helps the faculty to know which topics are most difficult to understand.

Execution Plan:

- Determine the feedback on the class sessions.
- Reserved few sessions for clarification of the topics.
- Allotted enough time to students for asking the question before day.
- Students know beforehand to ask the questions on the previous covered topics.
- Passed slips of paper for students to write on.
- Collected the responses for finding the muddiest point on the topics covered from all the students.
- Responded to the students' feedback during the next class meeting.

Topics identified as muddiest points are:

- Minimization of finite automata.
- Mealy machine

Expected Outcomes:

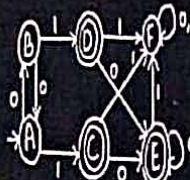
The Muddiest Point technique provides information on what students find least clear or most confusing about a particular lesson or topic. Instructors use that feedback to discover which

points are most difficult for students to learn and to guide their teaching decisions about which topics to emphasize and how much time to spend on each.

Enclosures:


- PPT on mealy and minimization using myhill nerode theorem.

Minimization of DFA - Table Filling Method
(Myhill-Nerode Theorem)



Steps:

- 1) Draw a table for all pairs of states (P,Q)
- 2) Mark all pairs where P≠F and Q≠F
- 3) If there are any Unmarked pairs (P,Q) such that $\delta(P,x), \delta(Q,x)$ is marked, then mark (P,Q) where 'x' is an input symbol
REPEAT THIS UNTIL NO MORE MARKINGS CAN BE MADE
- 4) Combine all the Unmarked Pairs and make them a single state in the minimized DFA



	A	B	C	D	E	F
A						
B						
C		✓	✓			
D		✓	✓			
E		✓	✓			
F				✓	✓	✓

such that $\delta(P,x), \delta(Q,x)$ is marked, then mark (P,Q) where 'x' is an input symbol
REPEAT THIS UNTIL NO MORE MARKINGS CAN BE MADE
4) Combine all the Unmarked Pairs and make them a single state in the minimized DFA

Myhill Nerode Theorem for minimization of FA

Example-1:

1. Lets take 001 and we know that its 2's complement is $(110+1=111)$.
2. So scan from right to left.
3. On state A '1' came first to go to stage B and in output write 1.
4. On state B replace '0' with '1' and vice-versa.
5. So finally we got 111 as output.
6. Be aware that the output is also printed in right to left order.

Example-2:

1. Lets take 01 and we know that its 2's complement is $(10+1=11)$.
2. So scan from right to left.
3. On state A '1' came first to go to stage B and in output write 1.
4. On state B replace '0' with '1' and vice-versa.
5. So finally we got 11 as output.
6. Be aware that the output is also printed in right to left order.

2's Complement of Binary Number

Observations:

- Becoming angry or disappointed when students identify something that is not clear. To deal with this teaching methodology we should be positive enough.
- Spending so much time responding to “muddy points” from past sessions that had risk losing the momentum of my course.
- It may give students the impression that all confusions and questions can be cleared up in a few minutes – or even in a few days.

Faculty Signature 