Department of Computer Science and Engineering
Academic Year 2022 – 2023 (Even Semester)

Degree, Semester & Branch: IV Semester B.E. CSE
Course Code & Title: CS3452 Theory of Computation
Name of the Faculty member (s): Mrs.S.Manjula

Innovative Practice Description

Unit / Topic: Unit III / Equivalence of pushdown automata and CFG-CFG to PDA

Course Outcome: CO 3

Topic Learning Outcome: TLO 9

Activity Chosen: Reflection

Justification:

- The reflection activity follows the discussion of a particular subject and allows students to evaluate their own understanding of the concept. Students cannot solve PDA to CFG and vice versa without a good understanding of the fundamentals of Pushdown Automata, such as when to push and pop the symbols into the stack. Using this activity, the instructor is able to evaluate student understanding levels. Additionally, it offers a chance to assess their understanding of the particular subject, and the activity aids in clearing up any confusion.
- **Time Allotted for the Activity:** 15 minutes

Details of the Implementation:

- Instructor explained the particular concepts/topic in classroom within 35 minutes.
- Students were required to honestly describe the concepts they didn't fully understand in order to clear up any confusion and determine their level of understanding.
- The students were asked to write what they have understood from the topic and also insisted to write if they have any queries about the topic.
- The instructor evaluates each student's written work to determine their level of understanding of the subject.

  On the next day in class, the teacher responds to the students' comments.

- **CO – PO / PSO mapping:**

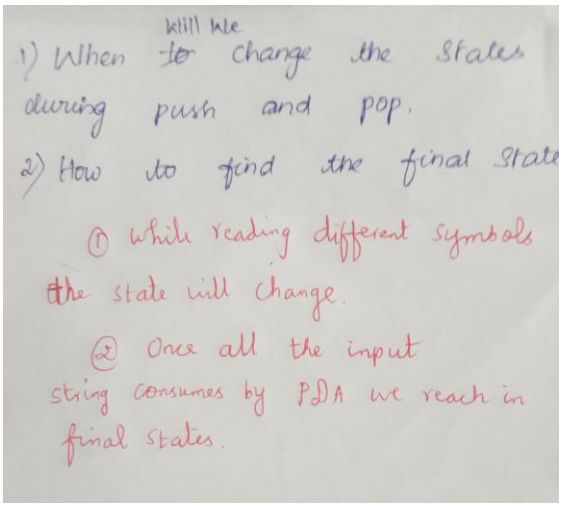
CO	PO1	PO2	PO3	PO4	PO9	PO10	PSO1
CO 3p	2	2	2	1	1	1	1

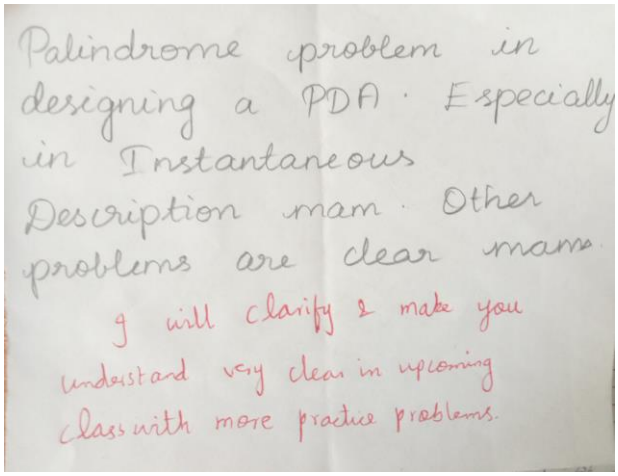
(1 – Low 2 – Moderate 3 – High)

PO / PSO mapped:

Innovative practice	PO1	PO2	PO3	PO4	PO9	PO10	PSO1
	2	2	2	1	1	1	1
Justification for correlation	Apply understanding of context-free grammar to the creation of PDAs.	Using a PDA to analyse challenging engineering problems	Students could verify and validate the functionality of a system using the knowledge of Context free grammar and push down automata.	To design the appropriate PDA for given CFG	To work as an individual	To Communicate effectively on complex engineering activities	Students will be able to design software components such as syntax analyzer of compiler using the context free grammar and push down automata

- **Images / Screenshot of the practice:**





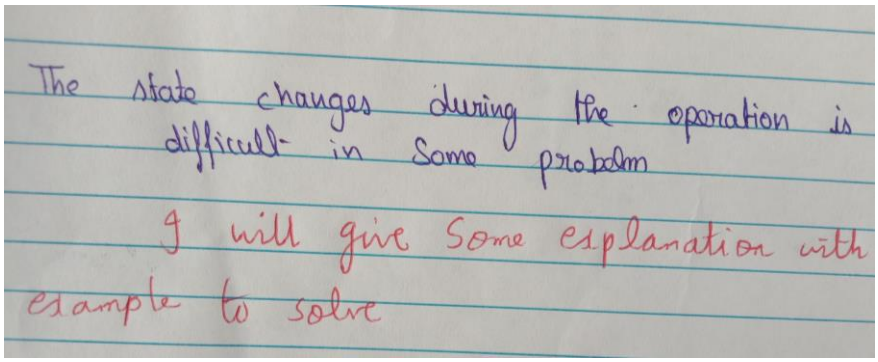


Fig 1: Sample reflection activity

- **Reflective Critique:**
  - ❖ ***Feedback of practice from students and other stakeholders:***
    - The students said that the activity helped them evaluate how well they understood the idea.
    - Students told the teacher that the activity encourages them to pay attention in class and raise their hands when they have questions.
  - ❖ ***Benefit of the practice:***
    - The activity assisted the teacher in assessing, improving, and analysing their own learning.
    - A reflection activity allowed the teacher to evaluate the students' level of understanding and to plan the next session accordingly.
  - ❖ ***Challenges faced in implementation:***
    - The majority of the students actively participated, with a few exceptions. Motivated the students who are not actively participating in the activity by highlighting the benefits of reflection and creative thinking.

References:

1. https://www.clemson.edu/otei/documents/Reflection%20Activities%20r.pdf
2. https://www.ritrjpm.ac.in/images/computer-science/Reflection-HCI-MSS.pdf
3. https://www.ritrjpm.ac.in/images/computer-science/SM-UII-AI-CS8691.pdf
4. https://teaching.utk.edu/wp-content/uploads/sites/78/2018/04/ReflectionActivities.pdf
5. https://sites.google.com/site/reflection4learning/why-reflect