Digital Assignment-1

PART-A

- Construct a **Context-Free Grammar (CFG)** for your name in short form, for example if your name is John Michel Nicholos , you can select one from options like "John," "Michel," or "Nicolos."
- Define production rules to generate the chosen name. Convert the CFG into **Chomsky Normal Form (CNF)** by ensuring that each production follows CNF rules. Further, transform the CNF into Greibach Normal Form (GNF).
- Validate the correctness of the grammar by deriving the chosen name step by step using CFG, CNF, and GNF, demonstrating that all forms generate the same language. Submit a report including the original CFG, its CNF and GNF equivalents, and step-by-step derivations to verify correctness.

Evaluation Criteria

  - Correctness of CFG, CNF, and GNF.
  - Step-by-step transformations.
  - Proper derivations for validation.
  - Clarity and formatting of the report.

PART-B

- Select at least three recently published research papers relevant to DFA, NFA, or RE. Summarize the key contributions, findings, an methodologies presented in each paper. (Literature Review)
- Compare different approaches or advancements discussed in the selected papers. Discuss how these findings impact theoretical or practical applications. (Comparative Analysis)
- Synthesize insights gained from the literature review.Discuss open problems or potential future research directions based on your findings. (Conclusion)
- Properly cite all sources using IEEE, APA, or any standard citation format. (References)

Submission Requirements:

- A well-structured report (1500–2000 words) with clear sections for literature review, analysis, and conclusion.
- Proper citation of all referenced articles.
- A critical discussion of recent trends and research challenges in finite automata and regular expressions.

Note :

Do not copy and paste

Review may conduct at any time.

Zero Plagiarism.

Submission method: Online submission (LMS) on or before 20-03-2025.

Hard Copy submission on or before 23-03-2025.

Your Digital Assignment carries 10 marks. Marks based on zero plagiarism, and the above evaluation criteria.

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