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Compiler design
Chapter-2: Introduction to syntax analysis

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Non Context Free language Constructs

There are some language constructions in the programming languages which are not context-free.
This means that, we cannot write a context-free grammar for these constructions.

- L1 = { ωcω | ω is in (a|b)*} is not context-free Grammer declaring an identifier and checking whether it is declared or not later.

We cannot do this with a context-free language. We need semantic analyzer (which is not context-free).

- L2 = {anb mc nd m | n≥1 and m≥1 } is not context-free ☐   declaring two functions (one with n parameters, the other one with m parameters), and then calling them with actual parameters.

PPT Content Resources Reference Sample:

1. **Book Reference**

   Aho, A. V., Lam, M. S., Sethi, R., & Ullman, J. D. (2006). *Compilers: Principles, Techniques, and Tools* (2nd ed.). Pearson Education.

2. **Journal Article**

   Muchnick, S. S., & Hecht, M. S. (2018). Advances in compiler optimization: Modern approaches for language processing. *Journal of Computer Science and Engineering*, 12(4), 233–245

3. **Website Reference**

   GeeksforGeeks. (2024). *Structure of a compiler*. Retrieved November 7, 2025, from https://www.geeksforgeeks.org/structure-of-compiler/ .

   1. **Conference Presentation**

      Sharma, R., & Patel, D. (2022). *Applications of compiler technology in modern software development*. Paper presented at the International Conference on Advanced Computing and Communication Systems (ICACCS), Chennai, India.

4. **Report**

   IEEE Computer Society. (2021). *Trends in programming language translation and compiler design*.

5. **Sources**

   TutorialsPoint. (2024). *Lexical Analysis in Compiler Design.*

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