COS 487: Theory of Computation **Fall 1997**

Handout 2: November 12

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Every student in the course is expected to do a mini-project between now and December 8. The goal is to read up on some topic related to the course and present that topic at a marathon evening session that will be held around December 8. You will also have to write a 1-page report on your readings and turn it in by January 10 (or earlier, if you wish).

You can do a mini-project either on your own or in small groups of up to three people. Please let me know your group before Thanksgiving break (i.e., by Wenesday, Nov. 26). Only one person from each group will make the oral presentation (you can choose which person that will be), but every one must turn in a separate written report. *There must be no collaboration while writing the report.*

Some projects that students did in the past years include:

1. Uses of context-free grammars in linguistics.
2. Complexity-theoretic notion of "randomness".
3. Cryptography.
4. Dealing with NP-completeness in practice.
5. Approximation algorithms.
6. Uses of finite automata in systems modeling.
7. Quantum computation.
8. Interactive proofs.
9. Average-case analysis.
10. Modeling computer systems with finite automata.
11. NP-complete problems in VLSI layout.
12. Godel's theorem and implications for AI.