Class Journal

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December 10, 2010

1 Introduction

This document will help us all find class related materials announcements and other class related activities.

Assignments will be posted Friday afternoon.
This will help me coordinate the questions with the material covered in class.

1.1 Latest updates

10 Dec.
- A guide for the final exam.
- Placed files related to Number Theory Applications in a folder called Number Theory.
- There are 4 files: Number Theory Application, Factoring, Minh's introduction to RSA using SAGE and an old quetionaire.

1. 02 Dec.
   - Date for final has been set: Wednesday 22, dec. A 2 hours final exam.
   - Class will meet tomorrow in LAB C.
   - New files: Recurrence Relations in the counting folder.
   - Three new folders with questions and answers on relations, recurrence relations and counting. Placed in Drills folder.
   - recurrence relations and generating functions practice problem (for you to answer).
2. 29 Nov.
3. We shall go over recurrence relations, cryptology and time permitting some more discrete optimization problems.
4. Updated the discrete optimization file.

5. posted the last two assignments.

6. 14 Nov. Plan for this week.

7.
   - We shall finish the fake coin discussion. File: KingLe.pdf
   - Combinations, Binomial Coefficients. File: combinations.pdf
   - Stirling's Formula, a very brief discussion. File: Striling.pdf
   - Discrete Optimization. File: DiscreteOptimization.pdf
   - On Wednesday during the practice hour we will go over the problems in countingPractice.pdf

8. All files are in the folder counting.

9. 12 Nov. Assignment # 7 has been modified (repeated question from Assignment 6 has been replaced).

10. 10 Nov. New files in the counting folder.

11. 1 Nov. The regular class will meet on Wednesday at 2:00. Following the class we shall have a tutorial from 3:00 - 3:50.

12. 31 Oct. Assignments number 6 & 7 have been posted.

13. 31 Oct. A folder counting has been added. It contains the following 3 files: 1. LetsCount, 2. counting 3. basic-counting. We shall cover them in this order.

14. Oct. 26 Plan for this week: Wednesday we shall go over the midterm. Time permitting we shall cover sequences. The file has been updated. Friday we shall finish discussing sequences and start discussing counting. Please go over the questions posted.

15. Oct. 22 The midterm is posted.

16. Oct. 22: A pdf file named LetsCount.pdf is posted. Try to solve as many of the counting problems as you can. There is no need to submit solutions, cooperation is greatly encouraged and recommended.

17. **IMPORTANT: We shall have our midterm on Friday, 22 OCT**
    It will be a two hours test. The exact material covered will be discussed in class next Friday.

18. Here again is the list of topics to be covered in our midterm:

    - Logic
      - Propositional variables (boolean variables)
      - Unary and binary operations (not, or, and, ...)
      - Boolean functions

  - Truth tables
  - Equivalence
  - Tautology
  - CNF, DNF ("Conjuction of Disjunctions, Disjunction of Conjunctions").
- Sets
  - Basic descritpions and operations ($\cup, \cap, A \setminus B, \overline{A}, \ldots$).
  - Cartesian product
  - power set
  - cardinality
  - Countable and non-countable sets.
  - Relations
  - Functions (onto, 1-1, bijections)
- Set systems
  - constrained intersections
  - finite fields
  - linear independence
  - Vector spaces over finite fields
  - Finite projective planes.
- Permutations
- Mathematical induction.

19. 16 Oct Assign5Ans answers to selected questions. Assignments directroy.
20. 12 Oct numtheory-crypot (A sage tutorial in the SAGE directory)
21. 12 Oct. marbles.pdf a solution to the marbles question. Assignment directory.
22. 12 Oct. sequences, a short survey for our next class topic.
23. 09 Oct. A set of 10 review questions-answers is posted. The file is in the drills folder.
24. 08 Oct. Assignment 5 updated, final version.
25. 08 Oct. assignment 5 posted.
26. 08 Oct. my power point presentation on Saturday, 02 Oct. posted.
27. 07 Oct. journal.pdf Progress report and current information. Will be updatde weekly.
28. finiteSets.pdf Final sets presentation. In sets folder.

29. 1.2 Current list of Documents

Web site address: http://www. faculty.washington.edu/moishe/hanoi-2010

Current folders:

1. Drills
2. Hanoi Assignments
3. Power Point Presentations
4. Sage

Folders content:

1. Drills
    - Drill-1.doc
2. Hanoi Assignments
    - assign1.pdf - assign4.pdf
    - Dri_1.doc (logic practice)
    - Drill1-Sage.doc a Sage sample.
    - prep.pdf (pre-set class preparation).
    - pythagoras.pdf A mini-research problem.
3. Folder Permutation Review Questions: questions-answers about permutations.
4. Folder Relations Review Questions: questions-answers about relations.
5. Folder Selected answers: Selected answers to assignments.

Current files:

1. LectureNotes.pdf Last update 25/09
2. in-class practice.pdf Last update 02/10 (self evaluation practice).
3. number theory questionaire.pdf hskip 20pt Last update 05/10.