Title?

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This project proposes a CNF SAT transformation algorithm employing a unique partitioning technique followed by efficient monomial ordering, polynomial to CNF conversion, and finally, run through a SAT solver engine. Grobner bases as a means to analyze the problem structure. The exercise will follow similar methods of C. Condrat and P. Kalla, "A Grobner Basis Approach to CNF Formulae Preprocessing,".

There are five major milestones for this project.
1) Developing the partitioning algorithm
2) Developing the monomial ordering algorithm
3) Developing the code to convert the results of (1) and (2) into CNF and run through a SAT solver
4) Final integration and debugging
5) Authoring results into a final project paper.

Each team member will be deeply involved with each portion of the project; however, each member will lead or "own" a portion of the project as such:

Matthew Huff - Partitioning
Spencer Clegg - Monomial Ordering
Drew Janibagian - CNF Conversion and SAT solving

Each part will probably be a script that accomplishes each person's part, but this isn't decided yet.

As a general timeline:

Proposal/Abstract Complete - 10/31
Code draft complete - 11/17
Intro and Methods (Paper) draft complete - 11/26
Final code integration and debugging - 12/05
Results compiled and report draft complete - 12/12
Final Paper Submitted - 12/15

inappropriate use of the word unique [I'll tell you why]

Why not just use a partitioning tool (hmetis)

& Main contribution.

That's ambitious.

It is a good ambitious project, but I want to "water" it down" a little-bit for you. We need to talk.

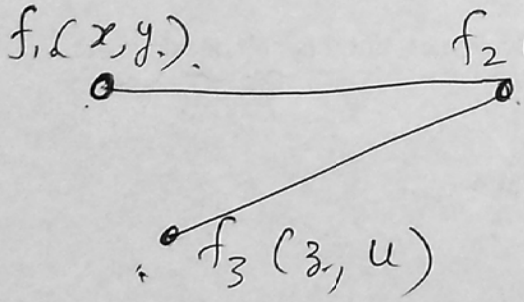
Also, the writing can be improved!!.

hmetis
hypergraph format
] use it

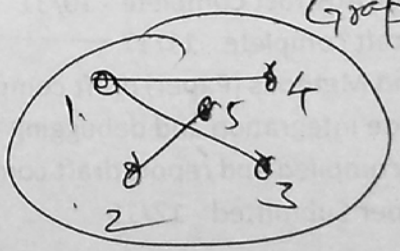
$F = \{f_1 \dots f_5\}$ $F_0 = \{x^2 - x\}$

$G = GB(F + F_0) = \{1\}$

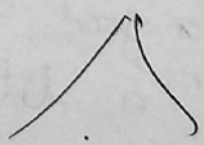
$F = F_0 \cup F_1 \cup \dots \cup F_n$ [Disjoint partition]



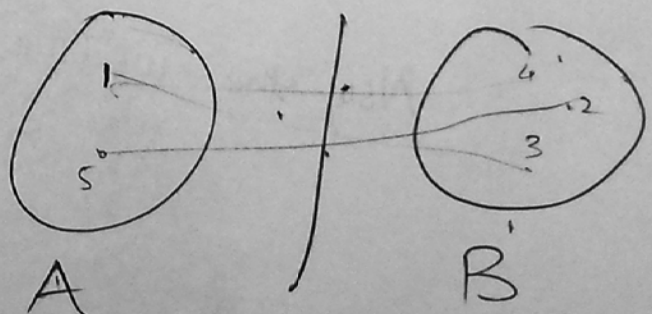
set n = # fix.
Call hmetis



min-cut bi-partition
↳ k-way partition.



ICCAD 2004
V. Durairaj + Kalla



Cut-set
Minimize