Projects of AMSC 698D/CMSC 858R/MATH 608
Ramsey Theory and its "Applications"
`http://www/cs.umd.edu/~gasarch/858/S13/S13.html`

The projects can be done in teams of 2,3, or in rare cases 4. You need to MEET WITH professor Gasarch to discuss what your project will be. Each team will do a different one. Here are types of projects:

DEADLINE: We need to MEET by Feb 7. The projects are DUE by April 23, though the same rule applies here as for the HW- I will take them on April 25 with no penalty.

ALSO: Depending on how many people are in the class and on timing I may ask all, some, or none of you to PRESENT your project to the class.

1. Take one of the papers on Dr. Gasarch APPLICATIONS OF RAMSEY THEORY website and write a paper that describes it. The paper should be well enough written that I can give it to the class to read the next time the class is taught. You will be asked to give a presentation of the project, either to the class or just to Dr. Gasarch.

2. Take some other paper in the area of Ramsey Theory, not necc. a paper that applies Ramsey, and summarize it. Same rules as the above.

3. Original research: We can discuss some problems that are open and appropriate to at least start on for a project.

4. Programming Project: Some of the lower bounds in the course are probabilistic. They could be coded up using Random Number Generators. Other programming projects are possible also.

5. If you have an idea that does not fit into the above category, I am eager to listen and we can work something out. It must be in Ramsey Theory; however, I interpret the term **Ramsey Theory** fairly broadly (as I do the term **Application**.

Here are some possible projects:

1. For Ramsey Numbers do empirical work to find lower bounds using prob method, LLL, and possibly the constructive methods known. PROGRAMMING NEEDED.

2. For Ramsey Games develop strategies that do pretty well for small values. PROGRAMMING NEEDED.

3. For VDW Numbers do empirical work to find lower bounds using prob method and LLL and possibly the constructive methods known. PROGRAMMING NEEDED.

4. For VDW Games develop strategies that do pretty well for small values. PROGRAMMING NEEDED.

5. Survey section- Roberts paper (just the first half)

6. Logic section- Kolatis and Vaanen paper (need to know logic).

7. Write up Jockush's paper on Recursive Ramsey.