

# Final Project - Information Sheet

## Details for the Report:

1. Due: Monday, December 12 by 2:30 PM
2. Typed (no minimum length, but should be complete)
3. Include code listings
4. In appropriate technical format (reference any journal paper in your area)
5. Must include an abstract (less than 1 page, includes statement of problem and a conclusion)
6. Include a short description of any optimization method that you use
7. Use at least one reference (standard format)

## Options for the Project:

1. Comparison of Methods: Pick at least 2 different methods and apply to at least 3 different test problems. The methods should be from different families, like one from line search and one from trust region, or a conjugate gradient method and a quasi-Newton method. The test problems should be of different types and should allow you to scale the size of the problem.  

Establish a criterion or set of of criterion for judging a method, program the methods and the test problems you selected, then make several runs. The main result of this project will be a table comparing the various methods on the various problems and a conclusion as to which method is best overall.
2. Case Study: From a specific situation, develop one or more objective functions and corresponding optimization problems and then pick an appropriate method(s) to find the solution. For several test cases, use the method to find a solution. Discuss the quality of the solution compared to the original situation.
3. Analysis of an Algorithm: Analyze an algorithm that we did not study in class. This includes: developing the algorithm from the theory, discussing convergence, discussing practical issues, programming the algorithm, and testing the algorithm on 3 or more test problems of your choice. Compare and contrast this algorithm with algorithms that we have studied.