Project Poster Presentation:

Teams of no more than five students will be graded on a project of their choice involving an application of optimization of their choice, but which must be approved by the instructor. In the project, the team is expected to find an application, determine an optimization framework for that appli-cation, analyze the properties of that optimization problem, determine an algorithm for numerical optimization, and then report the results and behavior of numerical optimization carried out on data from the application do-main. Students are then responsible for producing a poster on A0 paper that will be presented on the last day of class. Students must also submit the source for their poster and any code used for their project to receive credit.

Each team may nominate at most one MVP of the group who shall receive +5 points on their project grade, but the nomination must be unanimous. If the team does not nominate an MVP, no students will receive this bonus.

- **Potential Project Poster Topics:**
  - Comparison of methods on public datasets https://github.com/awesomedata/awesome-public-datasets
  - Methods include PCA, regression, k-means clustering, SVM, kernel-based methods, density estimation, regularized methods
- Deep dive on a challenging dataset or cutting-edge technique
  - Challenging datasets include dynamic behavior on large networks, high dimensional data, or big data
  - Cutting edge techniques include word2vec, semide_nite programming, deep neural networks

- **Project Poster Formatting:**
  1. The poster must be size A0
  2. Font style may be any sans serif style, and font sizes should adhere to the following guidelines:
     - _ Main title: 78 pt (bold, upper case)
     - _ Author: 72 pt (bold, title case)
     - _ A_liation: 48 pt (normal, title case)
     - _ Email address: 36 pt (bold)
     - _ Subheading: 36 pt (bold upper case)
     - _ Body of text: 24 pt (normal)
  3. Each poster must include at least two, but no more than four plots, visualizations, or tables
     - _ The visualization could illustrate convergence behavior, comparison of different procedures, etc.
     - _ Font style for labels must be consistent with the font of the body text
     - _ Color and contrast must be used to make the visualizations legible
  4. While proper use of white space is important for aesthetic appeal, projects may be penalized for "dead space" and over-padding.

5. At least 5 references to peer-reviewed articles, books, or professional websites must be included and cited in the poster. The team must use CSE citation format.
6. No more than a fifth of the area of the poster should be covered by visualizations and references.

- **Project Poster Presentation Grading:**
  - Each student will earn a score out of 100 points: 90 points for the team's evaluation and 10 more points for evaluation of the individual student.
  - **The poster will count for 50 points:**
    1. 10 points - Aesthetics (correct font style/size, use of contrast and color, etc)
    2. 10 points - Summary of goals, methods, and conclusions
       - The project/problem, relevance of the project/problem, your plan for resolving the project/problem, and the main takeaways of your project must be clearly stated
    3. 10 points - Explanation of dataset/problem
       - _ A clear explanation of the dataset(s), optimization models, and related work must be presented
       - _ What is the dataset? Where does it come from? What are the features, what is the size of the data?
       - _ What optimization pro
       - _ If there are related programs or competing techniques, these should be acknowledged and briey discussed
    4. 10 points - Technical description of optimization problem and numerical techniques
       - _ A deep dive into the properties of your optimization model and your numerical methods must be presented
       - _ It should be stated if the program is convex or non-convex
       - _ If you use a python/R package to solve the program, you must explain the algorithm that package is implementing in detail
    5. 10 points - Plots and references (Are the plots included and relevant? Are there sufficient relevant references in the proper format? are the references addressed in the body of the poster as well?)
- **The student presentation will count for 40 points:**
    1. 10 points - Did each of the team members have a clear focus that contributed to the project? For example, in a team of five people, one person could focus on the dataset and preprocessing, one could focus on the properties optimization program, one could focus on the numerical procedure, one could focus on the actual code, and one could focus on the visualizations. This is just a suggested separation of responsibilities, but the focus of each individual should be clear during the presentation of the poster.
    2. 10 points - Did the team members defer to other members to ask questions outside of their focus?
    3. 10 points - Did the team members tell a consistent story?
    4. 10 points - Were the team members honest about their knowledge and the limitations of their project?

- **Each team member will also be judged on their individual responses during the poster session for 10 more points:**
    1. 5 points - Was the team member able to get across the relevant aspects of their focus in one or two minutes of talking?
    2. 5 points - Did the team member clearly and concisely answer questions, defend against criticisms, or admit blindspots in their area of focus?