

CSE 788.14K Fundamentals of Visualization
Take Home Midterm Exam
Due: February 16 , 2007

1. Write a summary (up to 3 pages) for the three books by Tufte. List any rules, principles, strategies, or techniques that you have found useful and wanted to take with you. The rule of thumb to judge whether your summary is good or not is whether you can use this summary in the future as a quick reference when creating charts and graphics. You can include graphics from the books in your summary.
2. Find two poor graphics that violate tufte's principles. One such example can be taken from newspapers, magazines, or any general reading. Another example should come from a paper published in a scientific journal/conference proceedings in your research area. Include the original graphics, explain the goal and the main point to be made, and also your discussions why they are poor. Suggest ways to improve them.
3. Pick one visualization problem from 2005 or 2006 IEEE Information Visualization Symposium or Visualization Conference that you think tufte's principles could help. Describe the problem, how the authors tackled this problem, then how you would solve the problem using Tufte's principles
4. Choose a complicated dataset for exploration. The dataset should contain more than four variables and 100 data points. One possible source of the data sets can be the ASA Sections on Statistical Graphics and Statistical Computing Data Exposition (<http://lib.stat.cmu.edu/data-expo/>). Explore the data set using the principles/strategies that we have learned so far. In your write-up, you should first explain the data and then pose some questions that you want to get answers from the dataset. Then explain your methodologies and show the graphics you generated. Evaluate your graphics and discuss its effectiveness and limitations if any. You can use any tools (including hand sketches) to generate the visualization.