IE 312 Project

Fall 2009

Course Administration Information

- This is a group project. You can form your own group of 2-3 people in each group. If you have problems finding partners let me know as soon as possible and I will pair you up.
- The project is due on December 11th. There are two deliverables, a PowerPoint presentation and a report.
- I expect you to use LINGO to solve this project.
- The grading will be on how well you formulate this problem (60%), how well you code your formulation in LINGO (10%), how well you interpret the output (20%), and the quality of your PowerPoint presentation (10%).
- Note that there is no single correct formulation for the problem – assumptions will have to be made, so make sure all of them are well justified. Also, I will expect you to use sensitivity analysis in interpreting the output.

Problem Description

In this project you will work as an operations research analysis for the Scottish conglomerate McBain International, the world’s leading producer of Haggis, a Scottish delicacy. After conducting extensive market research, McBain has decided to add two new flavors to its product line: Mexican Haggis and Saouzchen Haggis. The new haggis products will be produced at its USA Midwest facility, located in Ames, IA. This facility currently makes only American and Vegetarian Haggis, and it was chosen due to its current low utilization (see attachment for the December production schedule).

Production is scheduled to start in January, 2011. Unfortunately the manufacturing engineering at the USA Midwest recently reported that they will be unable to meet the demand for the new products without adding an overtime shift. This was discovered when they attempted to put together a production schedule for January (see attachment).

Given the current utilization and the expected demand for the new products, your boss is convinced that the facility can handle the production, and she has asked you to help the USA Midwest facility fix the problem. Given the current economic climate, your boss has made it clear that she does not want to pay for any overtime or additional capital investments.

Use your expertise to find the optimal solution to this problem. If you believe that you have insufficient information, you can make assumptions (if they can be justified) or ask for further information. You will need to write a report, which may use optimization jargon (5-7 pages), as well as a PowerPoint presentation to be given to your boss (deliverable in 10 minutes). Your recommendations should be available by December 11th.