IE 480W Project Assignment Algorithm

Overview
The learning factory originally used a set of forms that included student's basic information, schedule preferences, and project preferences to place students into their assigned capstone design projects. This described method was tedious, time consuming, and inefficient. The team successfully created an updated system using a web based form and algorithm that places each student into a project that best suits their desires in a faster, more effective manner.

Objectives
The team’s main goal was to successfully create a system involving an algorithm and web based form that places students into projects with the most optimal outcome in under 30 seconds.

Approach
• Researched different programs that can be used for creating algorithms.
• Decided to write the web form using an HTML format and to store the information using a Microsoft Access database.
• Decided to write the program using a Max-Flow Cost Benefit algorithm through MATLAB.
• Decided to use VBA to send the information from the database to MATLAB and then from MATLAB back to the final Excel spread sheet.
• Created an initial algorithm using the method described above.
• Tested the algorithm using dummy information.
• Fixed bugs found when testing the algorithm.
• Created a final spread sheet to display projects that the algorithm assigned.
• Final algorithm system was then finished and assigned students projects in less than 30 seconds.
• Performed a statistical analysis of the algorithm. The outcome being that 81% of students would be equally satisfied or more satisfied with the projects assigned to them using the algorithm.
• Algorithm assigned 5% of students random projects compared to the previous 24%.

Outcomes
• Using this algorithm the IE department will save hours assigning projects.
• Students can now choose their project preferences over any device that can connect to the internet.
• Assigns projects more efficiently and creates a more optimal outcome for both professors and students.