Project Objectives

By accomplishing this project, the student will be able to

- perform the proper sequence of steps in a rational and effective development life cycle
- construct a decision support system in the VS.NET environment
- interface external databases to a VS.NET applications
- interface Solver optimization to a VS.NET applications
- apply VS.NET and Visual Basic programming to the construction of a decision support system (DSS)

Project Description

This project will develop and test a realistic (perhaps real) application in the VS.NET environment. Students will identify and define the problem domain and the context of the application. See the list of Project Options below.

The application will have the following features:

1. The application will be a DSS that supports a decision for an organization by optimizing a decision model.
2. The application will be designed according to OOP principles and constructs.
3. The application will access all required data from an external database.
4. The application will invoke the Solver package to perform optimization of the decision model.
5. The application will have an attractive, user-friendly and windows interface.
6. The application will be robust by catching faulty inputs, missing data or arithmetic errors.

Each student will work in a team of 4 or 5. The teams will be determined by the end of the second week of the semester. Full and balanced participation by all team members is expected. Team members will evaluate the contributions of each other.

Project Options

Realistic Option: The team will construct a fictitious company or organization. Data will be fabricated or obtained from relevant public records (e.g., stock prices, product prices, sales reports).

Real Option: The team has access to information about a real problem in a real organization and the organization is willing to disclose the nature of the problem.

Some Ideas from previous semesters

- Sales & Operations Planning – Aggregate Planning
- Logistics Planning - Multi-commodity flow planning
- Investment planning (dynamic) – Cash Flow Analysis
- Investment planning (static) – portfolio planning
- Productivity Assessment – Data Envelopment Analysis
- Employee scheduling
- Other

Deliverables

Please see the course schedule for due dates of the deliverables.

Project Deliverable 1: System Requirements

By the end of the fifth week of the semester, each team will have defined a project. The team will prepare a written description of the project and a prototype of the decision model in Excel. Before submitting this deliverable, each team will make an appointment with the Instructor to describe the project and receive feedback on the project specification.

Project Deliverable 2: System Design, OOP conceptual design and some coding

Project Deliverable 3: System Code and Test

Project Deliverable 4: System Deployment, Final Report, Showcase