

# Using Reengineering as an Integrating Capstone Experience

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## ABSTRACT

This paper presents an example of integrating IT skills using an interesting real life problem. We describe how the reverse- and forward-engineering of the USA National Do Not Call registry was used in our capstone course to illustrate the fusion of different (but interdependent) issues and techniques learned in the IT program. The purpose of the registry is to maintain a list of residential and personal phone numbers whose owners want to keep out of the reach of the telemarketing industry. We believe this experience is rich in educational possibilities; it is very appropriate for a technically oriented Information Technology program and can be conducted in a typical one-semester capstone or senior design project course. The project begins with an exhaustive investigation of the existing artifact leading the student to the discovery of the original model, and its processes, business rules and data structures. The various UML diagrams representing the specifications collected in the discovery phase are used to forward engineer a functionally equivalent database solution using the Microsoft .NET platform. The project touches on ethical issues concerning the legality of reverse-engineering and hints at possibilities on producing similar designs such as a “Do-Not-Email” Registry.

**Keywords:** Capstone project, senior design project, reengineering, National Do Not Call Registry, UML modeling, web programming, Microsoft .NET applications, database systems.