

CS108 Assignment 1: Phonebook Application, Analysis and Design

Learning Objective

This assignment will introduce students to system analysis and design. You will become familiar with the steps required to analyze the requirements for an application and develop a high-level design.

Problem Statement

The phonebook application on a cell phone stores a collection of names and phone numbers. (If you do not have a cell phone, ask your friends/roommates if you can borrow theirs to study how the phonebook works.) The user interacts with the phonebook application to store phone numbers, look up phone numbers, and delete phone numbers. After looking up a number, it is usually possible to edit the name or number, or else to call that person.

Your task is to model the function (e.g. behavior) of this phone book application. The goal is to produce an analysis and high-level design from which a programmer could develop the application.

- Begin with a UML use-case model to depict the way the user interacts with the application. [see example in D&D 2.9]
- Develop the behavior (a.k.a. algorithm) that must be undertaken by the program for each use case. You should write a brief narrative (e.g. in sentences) to express the behaviors. Hint: think about the verbs: collect, display, save, retrieve, etc.
- Develop the structure of the phone book application. Identify the classes (objects) that will be used to implement the required behaviors. Create a UML class diagram, identifying the classes and the main interactions between them. [see example in D&D 3.10]

Deliverables

You will turn in your UML diagrams, the narrative of each use-case, and an executive summary of no more than 1 page, which will serve to introduce the diagram(s) and narratives (and generally make the design understandable to a business person who has not seen this assignment handout.)