Preface

One of the most important elements of a software development project is requirements management (RM)—a systematic approach to eliciting, organizing, documenting, and tracking a system's requirements. Proper RM helps validate and verify the system, manage change, and analyze the project's status. It's much less expensive to fix a problem during requirements analysis than during design, testing, or production. Regardless of this fact, RM is often neglected in projects, and time spent on it is proportionally too small.

A research study called CHAOS, done by the Standish Group in 1995, indicated that three main factors cause projects to fail to come in on time, adhere to budget, and deliver required functionality:

- Lack of user input
- Incomplete requirements and specifications
- Changing requirements and specifications

Proper RM can improve all three factors.

What This Book Is About

Using an RM tool can organize the process and facilitate the creation and maintenance of requirements. One of the most popular tools is IBM® Rational® RequisitePro®. (For simplicity, it is called RequisitePro throughout the book.) This book provides hands-on instruction in using this tool. At the end of each chapter describing an RM step is a description of how RequisitePro can be used to facilitate this step. This is the first book to combine descriptions of RequisitePro features with their practical applications. Usage of this tool is shown based on a sample project.

Examples include creating the most important documents (Use Cases, Vision, and Supplementary Specification), creating and maintaining actual project requirements, traceability between requirement types, and the most important steps in requirements handling. To promote better understanding, the documents and other artifacts are created in the order that they would appear in an actual project.

The Online Travel Agency is a sample project that illustrates how to apply RequisitePro to maintain requirements and documents. This project is a web application similar to the ones that can be found at www.travel.yahoo.com, www.expedia.com, and www.travelocity.com.

How This Book Is Organized

This book presents an organized approach to RM. Each main step is described in a separate chapter. The chapters correspond to activities related to RM, including creating an RM Plan, eliciting stakeholder needs, creating a Vision document, and creating use cases. These activities are presented in a sequence that is close to chronological order. However, because a software project represents a complicated process with many iterations and complex relationships between activities, the steps described may be performed in a slightly different sequence. The actions performed by different people often overlap, and many actions performed by the same person are repeated during the process. This book also teaches techniques of modern requirements management, such as traceability.

Part I, "Overview," contains a couple of chapters that do just that: provide an overview of requirements and RequisitePro. Chapter 1, "Requirements Management," presents an overview of the RM process. Various types of requirements are introduced. The relationship between these types is shown in the form of a requirements pyramid. Chapter 2, "Overview of RequisitePro," presents an overview of RequisitePro.

The RM process is split into the following steps:

1. Establishing an RM Plan
2. Project setup
3. Requirements elicitation
4. Developing the Vision document
5. Creating use cases
6. Supplementary specification
7. Creating test cases from use cases
8. Creating test cases from supplementary specification
9. System design
10. Creation of other documents

These steps are described in this order in Chapters 3 through 12. Examples included at the end of most of these chapters show how the described RM activities may be implemented in practice using RequisitePro. Steps 3 through 9 are related to creating elements in the requirements pyramid (refer to Chapter 1, Figure 1.1).

In Part II, "Requirements Management Activities," Chapter 3, "Establishing a Requirements Management Plan," and Chapter 4, "Setting up the Project," describe how to structure the whole process.

The rest of the chapters corresponding to the steps in the RM process are as follows:

- Chapter 5, "Requirements Elicitation"
- Chapter 6, "Developing a Vision Document"
- Chapter 7, "Creating Use Cases"
- Chapter 8, "Supplementary Specification"
- Chapter 9, "Creating Test Cases from Use Cases"
- Chapter 10, "Creating Test Cases from Supplementary Requirements"
- Chapter 11, "Object-Oriented Design"
- Chapter 12, "Documentation"

In Part III, "Other Topics," Chapter 13, "Managing Projects," describes some additional RequisitePro features related to project management. Chapter 14, "Requirements Management in the Rational Unified Process," shows relationships between the requirements pyramid and the Rational Unified Process. In the final part, Part IV, "Review," Chapter 15, "Summary," summarizes the approach presented in this book.

Appendix A, "Sample Requirements Management Plan," presents a finished requirement plan for your reference.

The Audience for This Book

The book is primarily for those who are responsible for RM on a project. As evidence that this position is often neglected, this function does not even have a name. This book can help many people involved in software development:

- Business analysts
- Use case designers
- Project managers
- System architects
- Testers
- System designers
- Developers

The book is aimed at current RequisitePro users as well as people new to this tool. There are no prerequisites for being able to read and understand this book. Some knowledge of the software development lifecycle and familiarity with use cases may be helpful but is not necessary.

This book offers the following benefits:

- An overview of the RM process with emphasis on the most important documents
- A quick start to using RequisitePro
- An opportunity to learn RequisitePro before purchasing it
- A reference for the most important tool features
- Examples of applying RequisitePro in a sample project
- Guidelines related to specific steps in RM