Part 1
Methodology

Part 1 consists of three chapters that cover the methodology aspect of database performance tuning and optimization. The goal of Part 1 is to establish a sound conceptual framework for identifying tuning issues and taking a well-planned approach to address them. As such, it is primarily theoretical in nature and avoids, as far as practicable, references to any particular RDBMS. The methods and principles discussed in this part can be applied to any RDBMS with which the reader works.

Chapter 1, Database Application Development, contains a detailed discussion of the five phases of building a database application starting with the information requirements analysis, continuing through logical and physical database designs, and ending in database implementation. This is provided as a basis for the subsequent discussions involving performance tuning.

Chapter 2, Performance Tuning Methodology, describes the three levels of a database and emphasizes that a database must be well tuned at all three levels in order to run optimally. The chapter describes two metrics that are used for measuring database performance.

Chapter 3, Tuning the Conceptual Level of a Database, explores a variety of issues underlying the tuning process of the conceptual level. Since this level is built during the logical database design, it is essentially independent of any RDBMS. Consequently, I have included this chapter in Part 1.

I have used Oracle 8i as the RDBMS in giving specific implementation bound examples, if needed. A case in point is a tuning example appearing in Section 2.3.1.