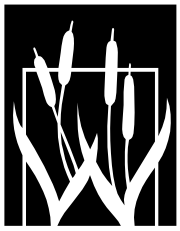

Whitemarsh
Information Systems Corporation

Iterations of Database Design

Whitemarsh Information Systems Corporation
2008 Althea Lane
Bowie, Maryland 20716
Tele: 301-249-1142
Email: mmgorman@wiscorp.com
Web: www.wiscorp.com

Table of Contents

1. INTRODUCTION

This paper presents a high-level strategy for developing database designs. The strategy begins with a definition of database, describes the preliminary steps for arriving at a design and enumerates and briefly describes the other initial database design iteration cycles. There are three major cycles of database design, and within each, minor cycles. The major cycles are: specified, implemented, and operational. The specified cycle causes a database design to be created that accurately reflects the in-place business policy of the enterprise. The implemented database design starts with the specified design and then incorporates the requirements of the particular DBMS through which the DBMS operates. The final cycle, operational begins with the implemented database and folds-in the requirements of the operational environment. These environments range from monolithic mainframe through client/server to single user PC.

During the entire database design process the database design from each cycle is maintained in a repository. Done properly, each major cycle transformation (that is, specified to implemented to operational) is expressible through SQL syntax changes. This way the re-transformation can always be accomplished.

The iterations of ***specified database design*** are:

- Business Policy
- Historical
- Audit
- Security
- Database administrator data versus business data
- Generalized versus specialized structures

The iterations of the ***implemented database design*** are:

- 1st cut performance
- DBMS DDL effects
- Business Keys versus DBkeys
- DBMS physical database effects
- Interrogation analysis effects

The iterations of the ***operational database design*** are:

- System control effects
- Client/server effects