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Database Development Life Cycle

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Biography

Rainer Schoenrank is the senior data warehouse consultant for The Data Organization. He has degrees in physics from the University of Victoria and computer science from the University of Victoria and California State University Hayward. He has built data warehouses for clients such as Pacific Bell, Genentech, GE Leasing, SGI, PPFA, Brobeck, BofA, Clorox, Leapfrog and Intuitive Surgical. He can be reached at rschoenrank@computer.org.
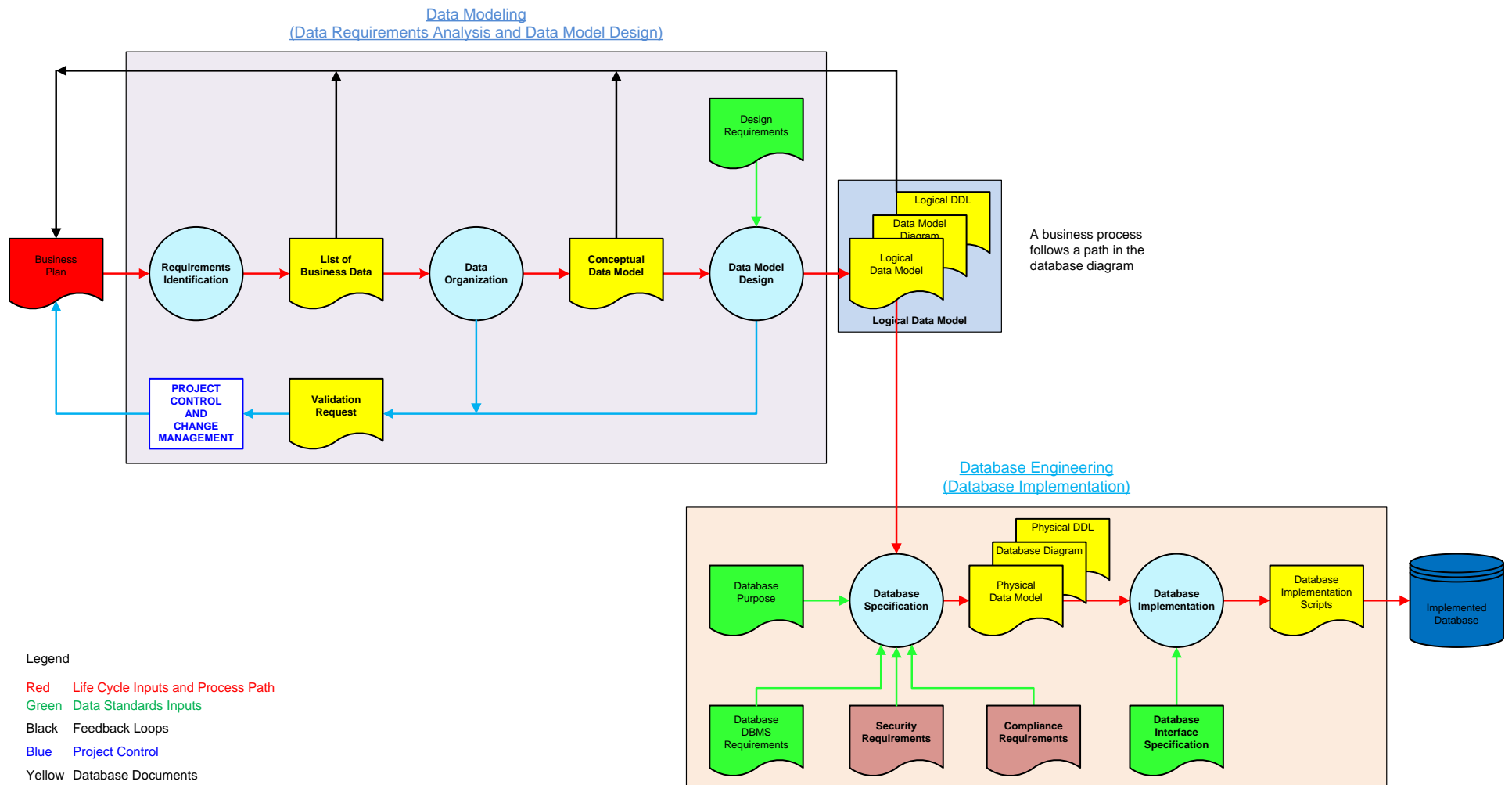
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1. INTRODUCTION

Progressing down through the rows of the [Zachman Framework](#) from top to bottom, in the Data column, one can trace-out the Database Development Life Cycle (DDLC) which is not a standard across the Business Automation Industry. The DDLC has only been hinted at by practicing data modelers since database design and development are considered as subordinate to the development of the business application architecture and the processing specifications.

2. DATABASE DEVELOPMENT LIFE CYCLE

The DDLC moves from a census of named business data structures in the scope level through decomposition and detailed description of the database to the list of deliverables. Each level is a new organization and detailed description of the business data structures until the data definition language description for generating the database. The final deliverables are the database and interfaces for accessing the business object data. The DDLC has no way of determining what is the complete set of business data structures in the first level, all the database goals are dependent on the accuracy and completeness of the list of business data document of the project.

The DDLC is a methodology that specifies what you need to know and the dependencies between the deliverables, not how to how to manage the process to achieve the final deliverables. The project management techniques, not the DDLC, determine the processes, sequence, timing and resources needed to achieve the project goals.

3. DDLC DIAGRAM

Data Modeling
(Data Requirements Analysis and Data Model Design)

Database Engineering
(Database Implementation)

A business process follows a path in the database diagram

Legend

Red — Life Cycle Inputs and Process Path
Green — Data Standards Inputs
Black — Feedback Loops
Blue — Project Control
Yellow — Database Documents

4. LANGUAGE ISSUE

There is an issue with the use of the language used to describe the business data structures and the components of these structures. The business stakeholders use different labels to describe the same concept, so there are synonyms in the Business Vocabulary document. These synonyms need to be identified and related to each other. Also, the business stakeholders need to agree on which label will be used in the database, since a label in the database has only one meaning and a different label with the same meaning as the first label is not allowed in the database.

This also brings up the problem with subtypes. For example, full time employee, part time employee, contractor are all subtypes of a general category of worker. In the conceptual data model, the general categories need to be agreed to by the stakeholders and all of their subtypes need to be identified.

5. REFERENCES

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