STRUCTURAL PROPERTIES OF ENTITIES AND THEIR RELATIONSHIPS

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ABSTRACT

ENTITY-RELATIONSHIP DIAGRAMS (ERDS) ARE A GRAPHICAL LANGUAGE, THE COMPONENTS OF WHICH INCLUDE ENTITIES, ATTRIBUTES AND RELATIONSHIPS. THEY ARE USED TO REPRESENT BUSINESS DATA FOR SUBSEQUENT DATABASE DESIGN. MEANWHILE THEY ARE A COMMUNICATION TOOL AMONG BUSINESS PEOPLE, ANALYSTS, AND DESIGNERS. IN INFORMATION MANAGEMENT AREA, ERDS ARE THE MOST IMPORTANT AND USED MODELING TOOL. ERDS HAVE BASIC SYNTACTIC CONVENTIONS AND THE ASSOCIATED SEMANTIC INFORMATION. IN THIS RESEARCH STUDY, WE INVESTIGATED THE PHYSICAL LAYOUT OF ERDS RELATIONSHIP AND THE MAPPING RELATIONSHIPS AMONG ENTITY INSTANCES. THE QUANTITATIVE STUDY AND QUALITATIVE STUDY OF CONTENT ANALYSIS WERE USED IN THIS RESEARCH. DURING OUR GATHERING SAMPLES, WE HAVE FOUND MUCH RELEVANT LITERATURE BUT A FEW EXAMPLES FITTING OUR RESEARCH PURPOSE. WE HAVE INTENDED TO COLLECT AND ANALYZE THOSE COMPLETE ERDS ACCOMPANIED BY THEIR PROBLEM DOMAIN CONTEXTS. THE MAIN FINDING OF THIS RESEARCH IS THAT WE CAN FIND A DIRECTIONAL STRUCTURAL PROPERTY IN ERDS WHEN WE REPOSITION ENTITIES AND CHANGE MAPPING RELATIONSHIPS AMONG THEM. THE IDEA OF THESE POSITIONAL CONVENTIONS COMES FROM THE DATA MODEL PATTERNS[21] AND RM/T[14]. IT WOULD BE HELPFUL IN COMMUNICATION AND IN DATABASE DESIGN WHEN WE USE THIS STRUCTURAL PROPERTY TO DRAW ERDS.

Keywords : DATA MODELS, DATA MODEL PATTERNS, E-R, RM/T

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