

CREATING THE CONCEPTUAL AND LOGICAL MODEL OF A JOURNAL DATABASE

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ABSTRACT

This article describes the process of creating the conceptual and logical model of a journal database. Since 2006, 482 publications from Hungarian and foreign authors have been published in the Journal of Contemporary Social and Economic Processes. To efficiently extract the information from the articles published so far, the idea of creating a database has emerged. To create a database, it is highly recommended to design a high-level conceptual model and convert that into a logical data model. The benefit of the thoughtful design is that it shows the structure of the database in an easily comprehensible form. It also facilitates the dialogue between the user and the programmer, and it may give new ideas concerning the database as well. This design serves as a plan or description that does not need to be changed depending on the selected database management system. The entity-relationship model is a fast and efficient way to create the conceptual model and it can be easily converted to a relational database model, which is a logical model. Both have entities, attributes, and relationships to describe a database. The entity-relationship model uses diagrams containing shapes (rectangles, ovals, diamonds, etc.) Its downside is that there is no computer database system capable of understanding this type of description. The relational model uses tables (and describes their structures and relations), and because of its simplicity and robustness, most database management systems use this model. The first (initial) version of the entity-relationship model of the journal database had one entity type and 25 attributes, no relationship. This was modified based on the information to be obtained from the stored data, and the final version contained three entity types, 39 attributes, and three relationships. This final conceptual model was converted to a logical model, the relational model, based on conversion rules. The result was ten tables to store entity data with 22 different fields (columns) and another three tables to ensure the relationships between the entity sets. The developed model can be created in a relational database manager and is suitable for serving information needs related to the journal.

Keywords: database planning, entity-relationship model, relational model