

Technical Task

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1 Technical task for the Phase 1

The objective of this phase is to utilize the database knowledge for real life problems.

1. Design the relational model and transform them into relations (create ER diagram and translate it into Relations).
2. Design the relations in an existing database management system (DBMS) by creating physical tables and their relationships.

1.1 Creating Scheme

There are many repositories containing research articles with their information.



Figure 1: The same article may be stored in different repositories.

The research articles are usually categorized based on their venues, authors, types and years.

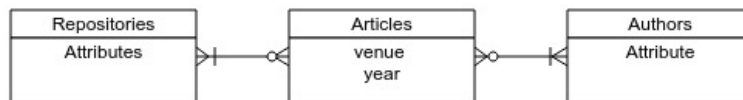


Figure 2: The same article may be written by different authors.

A publication record reference in research articles can have several attributes along with the article name.

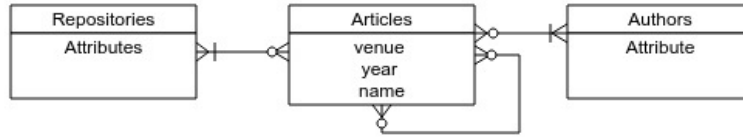


Figure 3: The same article may be referenced in different articles.

Functionality:

- Select, Insert, delete, and update publication records
- Import at least 1 million publications that are crawled from an existing publication repository, e.g. DBLP or Google Scholar, ACM digital library or etc. Realtime crawling is a +.
- Search the publication based on research area, author name, publication year, venue(conference/journal name), title, keyword, type of paper, institution or related articles and obtained ordered results.
- Ability to query related articles, based on your own defined methods, **at least two methods**.
- Ability to sort papers based on your own defined ranking methods, **at least two methods**

1.2 Implementing scheme

According to relations from 1.1, it is needed to implement a database on PostgreSQL