

First Assignment

Assume the following relations:

BOOKS(DocId, Title, Publisher, Year)

STUDENTS(StId, StName, Major, Age)

AUTHORS(AName, Address)

Borrows(DocId, StId, Date)

has-written(DocId, AName)

describes(DocId, Keyword)

Write the following queries in relational algebra:

1. List all books published by McGraw-Hill before 1990.
2. List the name of students who are older than 30 and who are not studying CS.
3. List the names of all students who have borrowed a book and who are CS majors.
4. List the title of books written by the author 'Silberchatz'.
5. List the title of books written by the author 'Silberchatz', but not books that have the keyword 'database'.
6. Find the title of the oldest book.

Consider the following schemas:

Suppliers(sid: integer, sname: string, address: string)

Parts(pid: integer, pname: string, color: string)

Catalog(sid: integer, pid: integer, cost: real)

Write the following queries in relational algebra:

1. Find the *sids* of supplier who supply some red or green part.
2. Find the *pids* of part supplied by at least two different suppliers.