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Consider the following relation for published books:

BOOK(Book title, Author name, Book\_type, List\_price, Author\_affil, Publisher)

Author\_affil refers to the affiliation of author. Suppose the following dependencies exist:

Book\_title  $\rightarrow$  Publisher, Book\_type (partial)

Book\_type  $\rightarrow$  List\_price (transitive)

Author\_name  $\rightarrow$  Author\_affil (partial)

- a. What normal form is the relation in? Explain your answer. 1NF, is assumed to have all atomic value but has several partial dependencies as well as one transitive dependency.

Prime attributes: Book\_title, Author\_name

Non-prime attributes: Book\_type, List\_price, Author\_affil, Publisher

- b. Normalize BOOK to 3NF. Specify foreign keys.
1. Title (Book Title, Publisher, Book\_Type)  
Type (Book Type, List\_Price)  
Author\_affil (Author Name, Author\_affil)
  2. Book\_Author (Book Title, Author Name)

Author (Book Title, Author Name)

Affiliation (Author Name, Author\_affil)

Pricing (Book Type, List\_Price)

Reference (Book Title, Publisher, Book\_Type)

