# Description

# ER Diagram

Diagram

Description automatically generated

# Database Schema

Authors: (name: str, yearOfDeath:int)

Publishers: (name: str, stillAround:boolean)

Readers: (username: str, password, favoriteBookTitle:str, favoriteBookAuthor:str, favoriteAuthor:str)

Books: (authorName: str, title:str, link: str)

Rate: (username:str, authorName:str, title: str, rating:float)

Publishes: (authorName:str, title: str, publisherName:str, yearOfPublication:int, location:str)

*Note: Rate was not made into a supporting relationship because it is not a many-to-one relationship as books can be rated by multiple readers and readers and rate multiple books. Publishes is not a supporting relationship because it does not meet the condition of “for every E-entity, there must be exactly one existing F-identity related to it by R” (154 of our textbook)” because it is many-to-many since publishers can (and often do) publish multiple books and books can have multiple publishers – often one in the US and one in the UK.*

# Closure Sets and Functional Dependencies

## Authors

There are only two attributes, so this relation is in BCNF.

## Publishers

Similar to the Authors relation, there are only two attributes in the relation, so this is also in BCNF.

## Readers

The only nontrivial FD is username -> password, favoriteBookTitle, favoriteBookAuthor, favoriteAuthor. Since the left side of this FD (username) is a superkey, this relation is in BCNF.

## Books

The only nontrivial FD is authorName, title -> link. Since the left side of the FD is a superkey, this relation is in BCNF.

## Rate

The only non trivial FD in this relation is title, authorName, title, username -> rating and since authorName, title, username is the key for this relation, this relation is in BCNF.

## Publishes

The only non-trivial FD in this relation is title, authorName, title, publisherName-> location, yearOfPublication, and since authorName, title, publisherName is the key for this relation, it is in BCNF.

# Sample Data Input SQL File

# Source Code

# Screenshots

# URL Link: