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COMP3005

Conceptual Design

The entities I decided to create in this database were: books, authors, and publishers. A book must have a single publisher, so they have full participation with “published\_by” to a publisher entity. They also have only one in this database by my assumption as it doesn’t make sense to have more than one publisher. Books also have at least one author, so they will have full participation due to every book needing to be written by someone and a many cardinality. Publishers on the other hand can have many books under them so they have a many cardinality with partial participation as I assume that the publisher may exist without listing any books yet. Finally, authors have full participation with books in my database as I’m making the assumption that if they want to be authors, they must publish at least one book. Due to this, they have a many cardinality relationship with book entities.

As for the attributes, books will have: name, ISBN, price, number of pages, and genre. ISBN is the primary key as they are a unique identifier to books whereas name could be repeated on similar books. Authors will have: ID, and name. ID will be the primary key as people may have the same name, making the need for a separate unique identifier. Publisher will have: email address, address (as a single string not separated into sections), name, phone number, and banking account. I’m making the name be the primary key as I make the assumption that the name will be patented by the publisher, thus making it unique.

Other assumptions that I’m making in my database: customer cart will not be persistent across logout and logins. If a cart is filled but the program is closed, that data will be lost. Instead store whatever items a customer wants outside the dbms in the frontend, hence I do not need to model in the ER diagram/schemas.