

Screaming Beckers: Daniel Stanev, Harry Tran

Dr. Eric Becker

CS 4347.501

16 Sep 2023

Proposal: Library Database

Cohort Name: Screaming Beckers

Members: Daniel Stanev, Harry Tran

Cohort:

Our cohort consists of only two people, Daniel Stanev and Harry Tran. We have decided to call our cohort **Screaming Beckers**. We came up with this name after Daniel suggested “Screaming Eagles”, and then Harry suggested “What about Screaming Beckers, like Dr. Becker” (We are not actually saying Dr. Becker screams, we just needed a name). Our main methods of communication will be through Discord and face-to-face meetings, and our project will be hosted in a private Github repository.

Project Description:

Our project is to build a database that stores information pertinent to a library (physical public library). Libraries manage all sorts of media (movies, books, even music disks), and people (employees, volunteers, customers). The main relationship between entities is obviously people borrowing media (purpose of a library), but other important things that the database will track include; the salary of employees, the remaining stock of media available to be borrowed, information about media (author, publisher, ISBN, etc.), information about people (name, address, bank account, etc.), and relationships between employees (supervisor).

Assumptions:

People:

- The database tracks how many pieces of media a person has borrowed.
- People may have bank accounts associated with them (bank accounts are a weak entity in this case). This is because customers pay a membership and employees get paid a salary.
- If a person does not have a bank account associated with them, their payments are in cash.
- Every person (total participation) can be an employee or a customer or both (overlapping subclasses).
- Employees may be (partial participation) 1 of the following: supervisor, clerk or volunteer (disjoint subclasses).
- Every supervisor (total participation) supervises any amount of employees, and every employee (total participation) has exactly 1 supervisor (1 : *).
- Clerks have a specific register they always work at.
- Volunteers may be court mandated; library would care about this because presumably they may have to validate volunteer hours.

Schedule:

- A work schedule is a weak entity because it cannot exist without an employee working that schedule.
- Every employee has works exactly 1 schedule (total participation, 1 : 1).
- There are 14 possible shifts (7 days a week, 2 shifts every day), and each schedule tracks which shifts an employee works and their wage per shift.

Media:

- Every piece of media is only one of the following: a book, movie, or music (total participation, disjoint classes).
- All media have stock (total and available), title, genre, and a unique id.
- If a media is available as a movie and book (like Harry Potter) then the movies and books are distinct pieces of media with distinct identifiers.
- Each media has exactly 1 publisher (total participation, 1 : 1)

Borrowing:

- Any amount of customers may borrow any amount of media (partial participation, * : *)