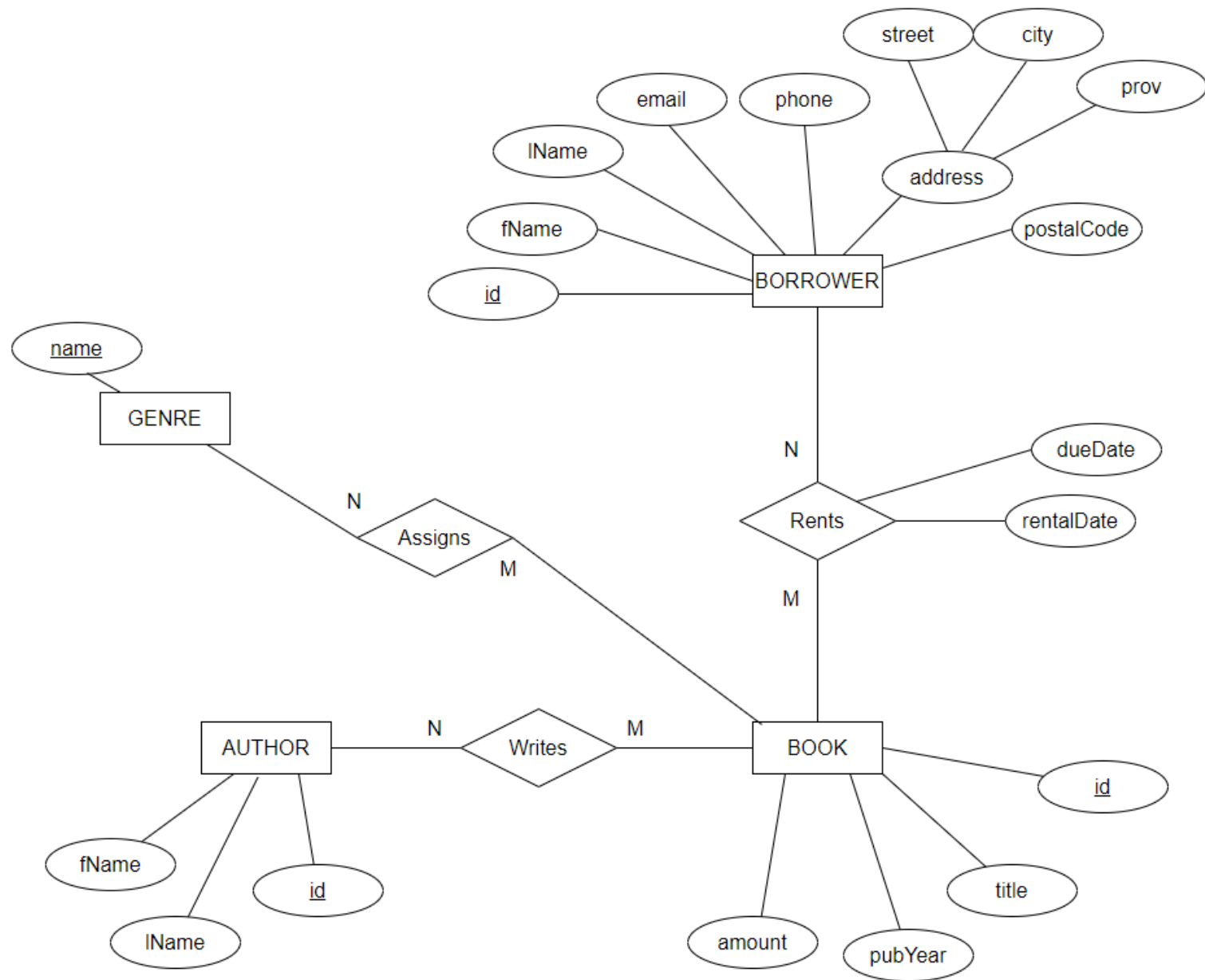


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**Library Management Web Application**

## **ENTITY-RELATIONSHIP MODEL**



## RELATIONAL MODEL

Notes:

- Attributes in green are primary keys.

**AUTHOR** (id, fName, lName)

sample AUTHOR table

id	fName	lName
1	J.K.	Rowling
2	Dan	Brown
3	William	Shakespeare
4	J.R.R.	Tolkien
5	Terry	Pratchett
6	Neil	Gaiman

**BOOK** (id, title, pubYear, amount)

sample BOOK table

id	title	pubYear	amount
1	Harry Potter and the Goblet of Fire	2000	3
2	Harry Potter and the Chamber of Secrets	1998	5
3	Romeo and Juliet	1597	1

4	The Da Vinci Code	2003	6
5	The Lost Symbol	2009	3
6	Inferno	2013	0
7	Lord of the Rings: The Fellowship of the Ring	1954	10
8	Gone Girl	2012	2
9	Good Omens	1990	1

**WRITES** (authorID, bookID)

foreign key authorID references AUTHOR.id

foreign key bookID references BOOK.id

sample AUTHOR\_BOOK table

authorID	bookID
1	1
1	2
2	4
2	5
2	6
4	7
5	9
6	9

**BORROWER** (id, fName, lName, email, phone, street, city, prov, postalCode)

sample BORROWER table

id	fName	lName	email	phone	street	city	prov	postalCode
1	Michael	Scott	michael.scott@dunder.ca	123-4567	123	Lethbridge	AB	A1B2C3
2	Dwight	Schrute	dwight.shrute@dunder.ca	456-4444	Unit 3, 45 St.	Lethbridge	AB	122ABB
3	Jim	Halpert	jim.halpert@dunder.ca	123-9999	444	Coaldale	AB	444GGG

**RENTAL** (bookID, borrowerID, rentalDate, dueDate)  
foreign key bookID references BOOK.id  
foreign key borrowerID references BORROWER.id

Notes:

- The borrower can borrow the same books at different times that is why we added the rentalDate to the composite key.

Borrowing a book:

- *Michael Scott* borrows *Harry Potter and the Goblet of Fire* and *Harry Potter and the Chamber of Secrets* books
- *Dwight Schrute* also borrows *Harry Potter and the Goblet of Fire* book

RENTAL table

bookID	borrowerID	rentalDate	dueDate
1	1	2021-10-08	2021-10-15
2	1	2021-10-08	2021-10-15
1	2	2021-10-08	2021-10-15

BOOK table (updated)

id	title	pubYear	amount
1	Harry Potter and the Goblet of Fire	2000	1
2	Harry Potter and the Chamber of Secrets	1998	4
3	Romeo and Juliet	1597	1
4	The Da Vinci Code	2003	6
5	The Lost Symbol	2009	3
6	Inferno	2013	0
7	Lord of the Rings: The Fellowship of the Ring	1954	10
8	Gone Girl	2012	2
9	Good Omens	1990	1

Returning a book:

- *Dwight Schrute* returns *Harry Potter and the Goblet of Fire* book (his record in the RENTAL table gets deleted)

RENTAL table

bookID	borrowerID	rentalDate	dueDate
1	1	2021-10-08	2021-10-15
2	1	2021-10-08	2021-10-15

BOOK table (updated)

id	title	pubYear	amount
1	Harry Potter and the Goblet of Fire	2000	2
2	Harry Potter and the Chamber of Secrets	1998	4
3	Romeo and Juliet	1597	1
4	The Da Vinci Code	2003	6
5	The Lost Symbol	2009	3
6	Inferno	2013	0
7	Lord of the Rings: The Fellowship of the Ring	1954	10
8	Gone Girl	2012	2
9	Good Omens	1990	1

**GENRE** (name)

name
Fantasy
Crime
Biography
Young Adult
Science Fiction
Romance
Horror
Mystery
Thriller

**ASSIGNS** (genreName, bookID)

foreign key genreName references GENRE.name

foreign key bookID references BOOK.id

genreName	bookID
Fantasy	1
Fantasy	2
Romance	3
Mystery	4
Thriller	4
Mystery	5
Thriller	5
Mystery	6
Thriller	6
Fantasy	7
Crime	8
Horror	9



Fantasy	9
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