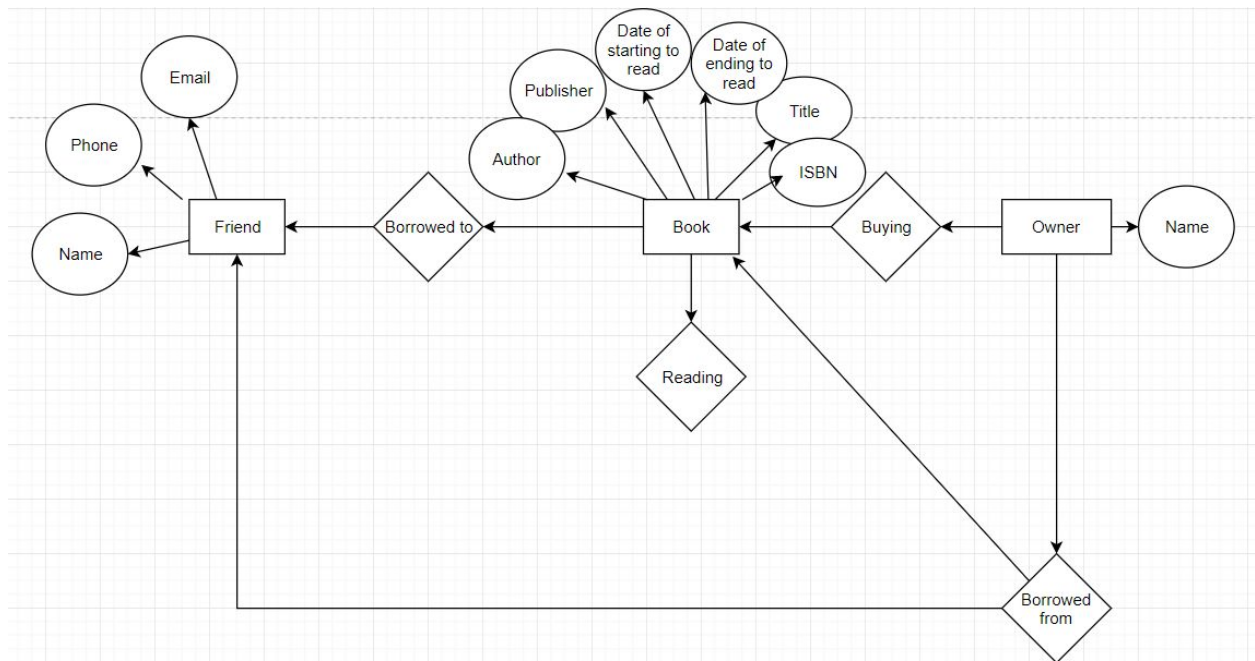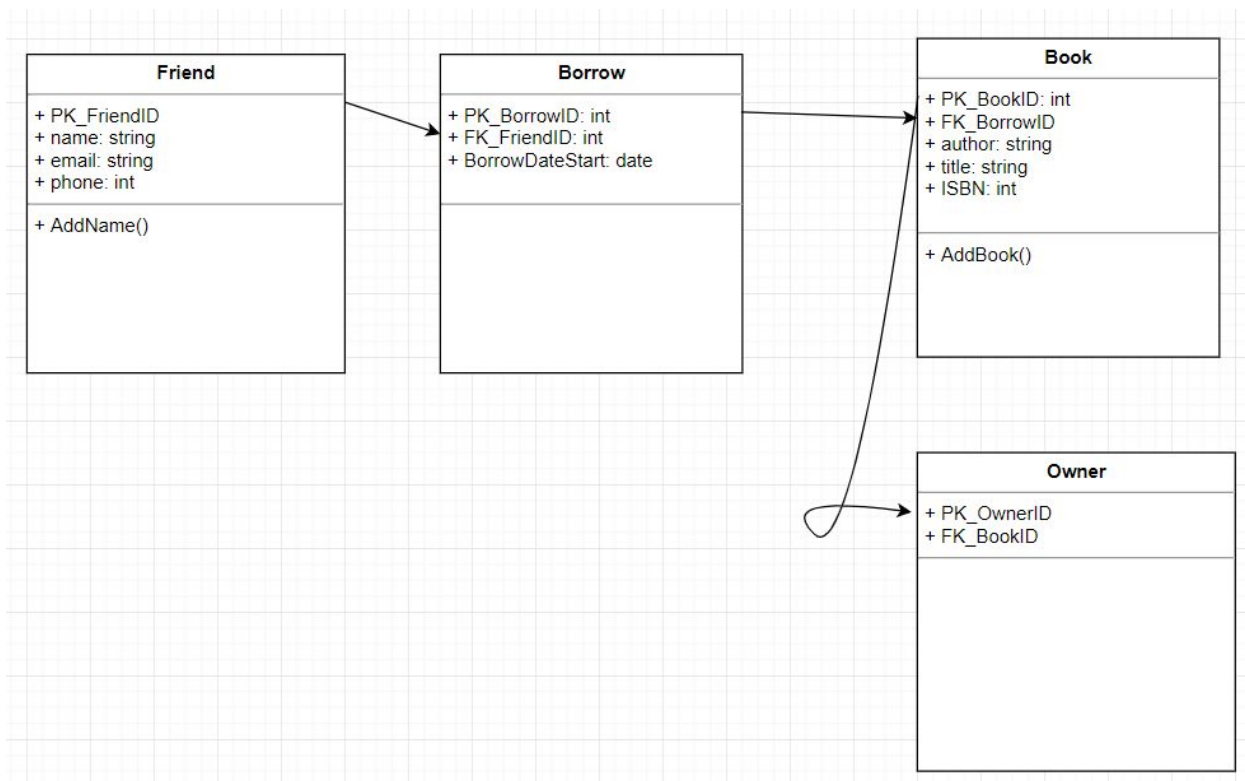# Step 1: Purpose of the Database (Requirement Analysis)

The purpose of the database is to list all the books in my ownership. From hundreds of books to remember to which friend was the book borrowed, or from which friend has I borrowed a book. In the database should be stored information about the books, such as:

- Author,
- Title,
- Name of the borrower,
- Email of the borrower,
- Phone number of the borrower,,
- ISBN.

Step 2: The Entity-Relationship Model

Step 3: The Unified Modeling Language (UML)

Friend

+ PK_FriendID
+ name: string
+ email: string
+ phone: int

+ AddName()

Borrow

+ PK_BorrowID: int
+ FK_FriendID: int
+ BorrowDateStart: date

Book

+ PK_BookID: int
+ FK_BorrowID
+ author: string
+ title: string
+ ISBN: int

+ AddBook()

Owner

+ PK_OwnerID
+ FK_BookID

Step 4: Refine & Normalize the Design

Expanding Book class with Author information about date of birth, citizenship.

Friend

+ PK_FriendID
+ name: string
+ email: string
+ phone: int

+ AddName()

Borrow

+ PK_BorrowID: int
+ FK_FriendID: int
+ BorrowDateStart: date

Book

+ PK_BookID: int
+ FK_BorrowID
+ author: string
+ FK_author: int
+ title: string
+ ISBN: int

+ AddBook()

Author

+ PK_AuthorID: int
+ DateOfBirth: date
+ origin: string

Owner

+ PK_OwnerID
+ FK_BookID