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sequenceDiagram
    participant Member
    participant Employee
    participant System
    participant DataBase

    Employee->>System: Log In Request
    System->>DataBase: Validate
    DataBase-->>System: Correct Id and Password
    System-->>Employee: Successful Log In

    Member->>Employee: Request book borrow
    Employee->>System: Enter borrow details
    Employee->>System: Enter Member details
    System->>DataBase: Validate details
    DataBase-->>System: Update
    System-->>Employee: Issue Book
    Employee-->>Member: Hand In Book
```

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graph LR
    Employee((Employee))
    Admin((Admin))
    Member((Member))
    Reader((Reader))
    Vendor((Vendor))

    Employee --- UC1[Make return transaction]
    Employee --- UC2[Make Borrow transaction]
    Employee --- UC3[Manage readers]
    Employee --- UC4[Sign in]
    Employee --- UC5[Manage Books]

    Admin --- UC6[Add/Remove Employee.]
    Admin --- UC7[Manage Genres (Add, Remove).]
    Admin --- UC8[View Borrow Records.]
    Admin --- UC9[View Subscribed Members]
    Admin --- UC10[manage Vendors]

    Member --- UC11[book return]
    Member --- UC12[Book Borrow]
    Member --- UC13[extend membership]
    Member --- UC4

    Reader --- UC14[apply for membership]
    Reader --- UC4

    Vendor --- UC15[vend a book]

    UC11 -.-> UC1[Make return transaction]
    UC12 -.-> UC2[Make Borrow transaction]
    UC13 -.-> UC3[Manage readers]
    UC14 -.-> UC4[Sign in]
    UC15 -.-> UC10[manage Vendors]

    UC4 -.-> UC5[Manage Books]
    UC4 -.-> UC6[Add/Remove Employee.]
    UC4 -.-> UC7[Manage Genres (Add, Remove).]
    UC4 -.-> UC8[View Borrow Records.]
    UC4 -.-> UC9[View Subscribed Members]
    UC4 -.-> UC10[manage Vendors]
```

The diagram is an Entity-Relationship (ER) model for a library database. It includes the following entities and attributes:

- Guest**: VisitRate
- member**: Address, ID (primary key)
- membership**: date, renewal date (dashed oval)
- Reader**: Name, PPhoneNUMBER (double oval)
- Vendor**: Name, VendorID, PPhoneNUMBER
- Book**: BookID, Name, Publisher, Author (double oval), Quantity, Bookcode, genre (double oval)
- Borrow**: due date (dashed oval), BorrowedDate, RefNumber
- Employee**: EmployeeID (primary key), Name, PPhoneNUMBER (double oval), Address

Relationships and Cardinalities:

- Guest and Reader**: Disjoint union relationship labeled 'd'.
- member and membership**: 1:1 relationship with double vertical bars on the member side.
- member and Borrow**: 1:M relationship with double vertical bars on the member side and a vertical bar on the Borrow side.
- Vendor and Book**: 1:M relationship with a vertical bar on the Vendor side and a vertical bar on the Book side.
- Book and Borrow**: 1:M relationship with a vertical bar on the Book side and a vertical bar on the Borrow side.
- Employee and Borrow**: 1:M relationship with a vertical bar on the Employee side and a vertical bar on the Borrow side.
- Employee and Book**: 1:M relationship with a vertical bar on the Employee side and a vertical bar on the Book side.
- manage**: A relationship between **Employee** and **Book** with a vertical bar on the Employee side and a vertical bar on the Book side.