

# Project Documentation: Windows Forms Application with LINQ, EF Core & Dapper

## Project Overview

This project is a Windows Forms Application for managing products and categories. It includes a user authentication system, CRUD operations for products and categories, a favorites system for users, and an admin panel for data management. It also generates reports by converting Dapper data to Excel files using Closed XML.

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## Environment Setup

### 1. Install Required Tools

- .NET 9.0 SDK
- Visual Studio
- SQL Server Management Studio (SSMS)

### 2. Install NuGet Packages

Open Visual Studio and run the following commands in the **Package Manager Console**:

```
Install-Package ClosedXML -Version 0.104.2
Install-Package Dapper -Version 2.1.66
Install-Package FastMember -Version 1.5.0
Install-Package Google.Apis.Gmail.v1 -Version 1.68.0.3427
Install-Package Microsoft.EntityFrameworkCore.Proxies -Version 9.0.2
Install-Package Microsoft.EntityFrameworkCore.SqlServer -Version 9.0.2
Install-Package Microsoft.EntityFrameworkCore.Tools -Version 9.0.2
Install-Package QRCode -Version 1.6.0
```

### 3. Configure Database Connection

In `LibraryDbContext.cs`, set up the connection string:

```
protected override void OnConfiguring(DbContextOptionsBuilder
optionsBuilder)
{
    optionsBuilder.UseLazyLoadingProxies()
```

```

        .UseSqlServer("Data Source=.;Initial
Catalog=LibraryDB;Integrated Security=True;Encrypt=True;Trust Server
Certificate=True");
}

```

## 4. Run Database Migration

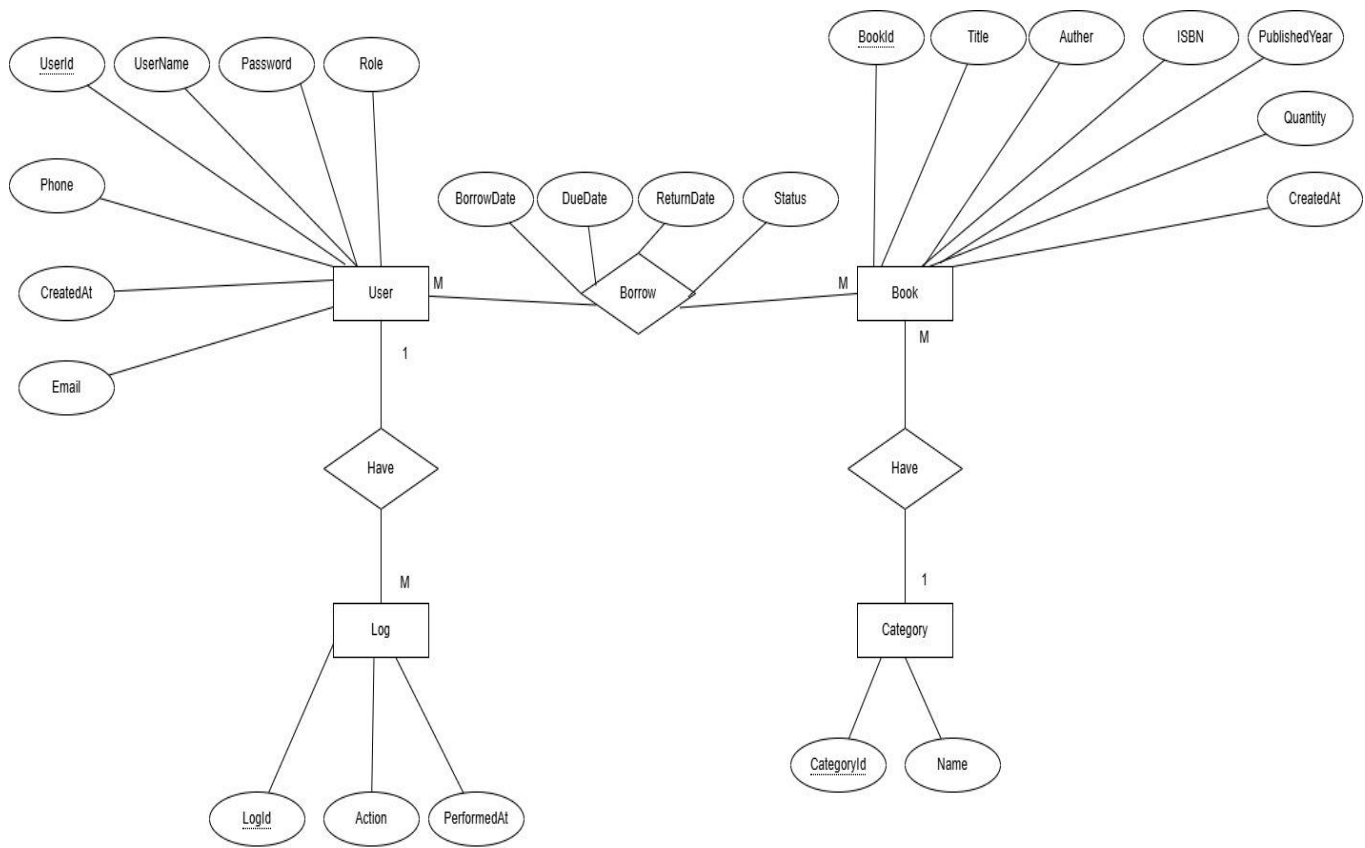
In the **Package Manager Console**, run the migration command to create the database schema:

```
Update-Database
```

## 5. Run the Application

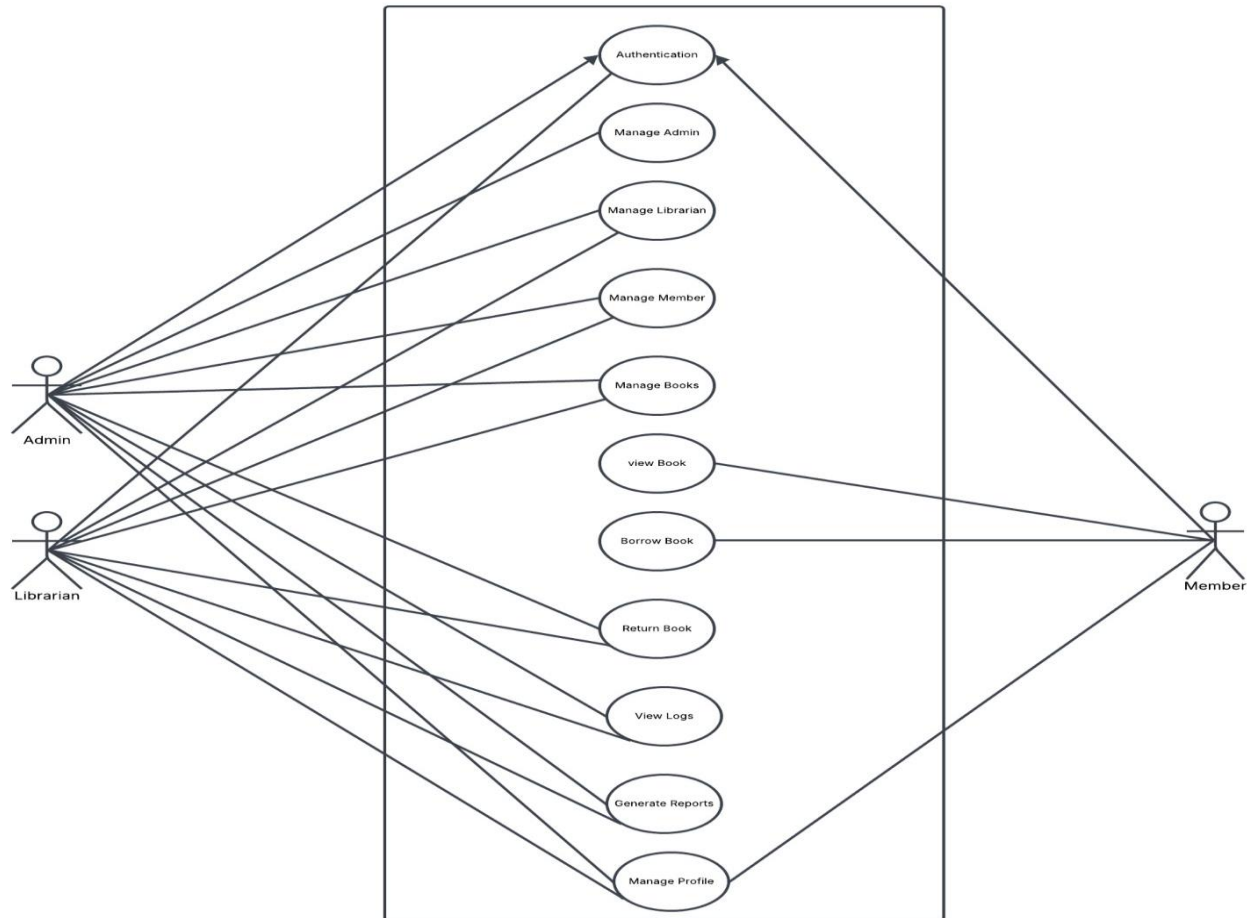
- Open the solution in Visual Studio
- Set the startup project to `WindowsFormsApp`
- Run the project (F5)

## Entity Relationship Diagram (ERD)



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## □ Use Cases



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## 🔧 Technologies Used

- C# Windows Forms
  - LINQ
  - Entity Framework Core (Code First)
  - Dapper
  - ClosedXML
  - FastMember
  - Google Gmail API
  - QRCoder
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## □ Use Cases

[https://lucid.app/lucidchart/8c10e0b1-d5de-4c21-8055-daaf104d5193/edit?viewport\\_loc=-638%2C81%2C2300%2C1001%2C0\\_0&invitationId=inv\\_900c8336-6274-4acd-815f-fda5ec2944cf](https://lucid.app/lucidchart/8c10e0b1-d5de-4c21-8055-daaf104d5193/edit?viewport_loc=-638%2C81%2C2300%2C1001%2C0_0&invitationId=inv_900c8336-6274-4acd-815f-fda5ec2944cf)