Comprehensive Documentation for Library Management System

# 1. Introduction

The Library Management System is a web-based application that provides a platform to manage books and authors. It allows users to perform CRUD (Create, Read, Update, Delete) operations while maintaining relationships between authors and their books.

# 2. Technologies Used

- ASP.NET Core 8.0 MVC: Backend and application logic.  
- PostgreSQL: Database management.  
- Bootstrap 5: UI and responsive design.  
- Entity Framework Core: ORM for database interactions.

# 3. Setup and Configuration

1. Clone Repository:  
```bash  
git clone https://github.com/your-repo/library-management.git  
cd library-management  
```   
2. Configure PostgreSQL:  
Update appsettings.json:  
```json  
"ConnectionStrings": {  
 "LibraryDb": "Host=localhost;Database=LibraryDB;Username=postgres;Password=yourpassword"  
}  
```   
3. Run Migrations:  
```bash  
dotnet ef database update  
```   
4. Run Application:  
```bash  
dotnet run  
```   
Navigate to http://localhost:5000 to access the application.

# 4. Usage Scenarios

## Adding Authors

Navigate to the Authors > Add Author page and fill out the form:  
- First Name: Ahmet  
- Last Name: Ümit  
- Date of Birth: 1966-11-28  
Click Save. The new author will appear in the Author List.  
  
Sample Output:  
| Full Name | Date of Birth | Books Written | Actions |  
|-------------------|---------------|---------------|------------|  
| Ahmet Ümit | 28.11.1966 | 2 | Details/Edit/Delete |  
| Ahmet Hamdi TANPINAR | 22.06.1901 | 0 | Details/Edit/Delete |

## Adding Books

Navigate to the Books > Add Book page and fill out the form:  
- Title: Beyoglu Rapsodisi  
- Genre: Genre Fiction  
- Author: Ahmet Ümit (select from dropdown)  
- Publish Date: 2003-10-05  
- ISBN: 123-4567891234  
- Copies Available: 7  
Click Save. The new book will appear in the Books List.  
  
Sample Output:  
| Title | Genre | Author | Publish Date | Copies Available | Actions |  
|--------------------|--------------------|--------------|--------------|------------------|-----------------|  
| Beyoglu Rapsodisi | Genre Fiction | Ahmet Ümit | 5.10.2003 | 7 | Details/Edit/Delete |  
| The Puppet (Kukla) | Fantasy Fiction | Ahmet Ümit | 7.07.2002 | 69 | Details/Edit/Delete |

## Viewing Author Details

Navigate to the Authors > Details page for Ahmet Ümit:  
- Full Name: Ahmet Ümit  
- Date of Birth: 28.11.1966  
- Books Written:  
 - Beyoglu Rapsodisi  
 - The Puppet (Kukla)  
  
Sample Output:  
Full Name: Ahmet Ümit  
Date of Birth: 28.11.1966  
Books Written:  
1. Beyoglu Rapsodisi  
2. The Puppet (Kukla)

## Viewing Book Details

Navigate to the Books > Details page for Beyoglu Rapsodisi:  
- Title: Beyoglu Rapsodisi  
- Genre: Genre Fiction  
- Author: Ahmet Ümit  
- Publish Date: 5.10.2003  
- Copies Available: 7  
  
Sample Output:  
Title: Beyoglu Rapsodisi  
Genre: Genre Fiction  
Author: Ahmet Ümit  
Publish Date: 5.10.2003  
Copies Available: 7

## Updating Authors and Books

Navigate to the respective Edit pages, modify the fields, and click Save. Changes will be reflected in the corresponding lists.

Sample Output After Update (Author):  
Author Updated Successfully:  
Full Name: Ahmet Hamdi Tanpınar  
Date of Birth: 22.06.1901  
Books Written: 0  
  
Sample Output After Update (Book):  
Book Updated Successfully:  
Title: The Puppet (Updated)  
Genre: Mystery Fiction  
Author: Ahmet Ümit  
Publish Date: 7.07.2002  
Copies Available: 50

## Deleting Authors and Books

Click the Delete button in the Author or Book List. A confirmation prompt will appear. Upon confirmation:  
- Authors: All books associated with the author will also be deleted.  
- Books: Only the selected book will be removed.  
  
Sample Output After Deletion:  
Author Deleted: Ahmet Ümit  
Associated Books Deleted:  
- Beyoglu Rapsodisi  
- The Puppet (Kukla)  
Book Deleted: Beyoglu Rapsodisi

# 5. Sample Outputs

## Example Author Management

Add Author Form Image Placeholder  
Author List Image Placeholder

## Example Book Management

Add Book Form Image Placeholder  
Book List Image Placeholder

# 6. Conclusion

The Library Management System is a feature-rich web application for managing authors and books efficiently. It demonstrates the use of modern development practices, including MVC architecture and relational database management. The application is scalable, user-friendly, and provides a solid foundation for further enhancements, such as user authentication or advanced reporting features.