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Mini Project Report: BiblioGest



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S4 - 2024/2025

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1 Introduction

This report presents the development of **BiblioGest**, a library management system created using **Windows Presentation Foundation (WPF)** and **Entity Framework Core**. The application provides librarians with a complete interface to manage books, members, borrowings, and returns.

2 Technology Stack

- **.NET (C#)** — for business logic and backend development.
- **WPF (Windows Presentation Foundation)** — for UI/UX using XAML.
- **Entity Framework Core** — as the Object-Relational Mapper (ORM).
- **MySQL** — as our relational database server .

3 Application Features

- **Book Management:** Add, edit, delete books with complete metadata.
- **Member Management:** Register and manage library members.
- **Borrowing System:** Handle book loans and returns with due dates.
- **Advanced Search:** Filter catalog using multiple criteria.
- **Dashboard:** Real-time statistics (active loans, overdue books, etc.).

4 Database Model

4.1 Main Entities

- **Book:** ISBN, Title, Author, Publisher, Year, Copies, Category
- **Member:** ID, Name, Address, Email, Phone, Registration Date
- **Loan:** Book ID, Member ID, Loan Date, Due Date, Return Date
- **Category:** ID, Name, Description

4.2 Database Architecture

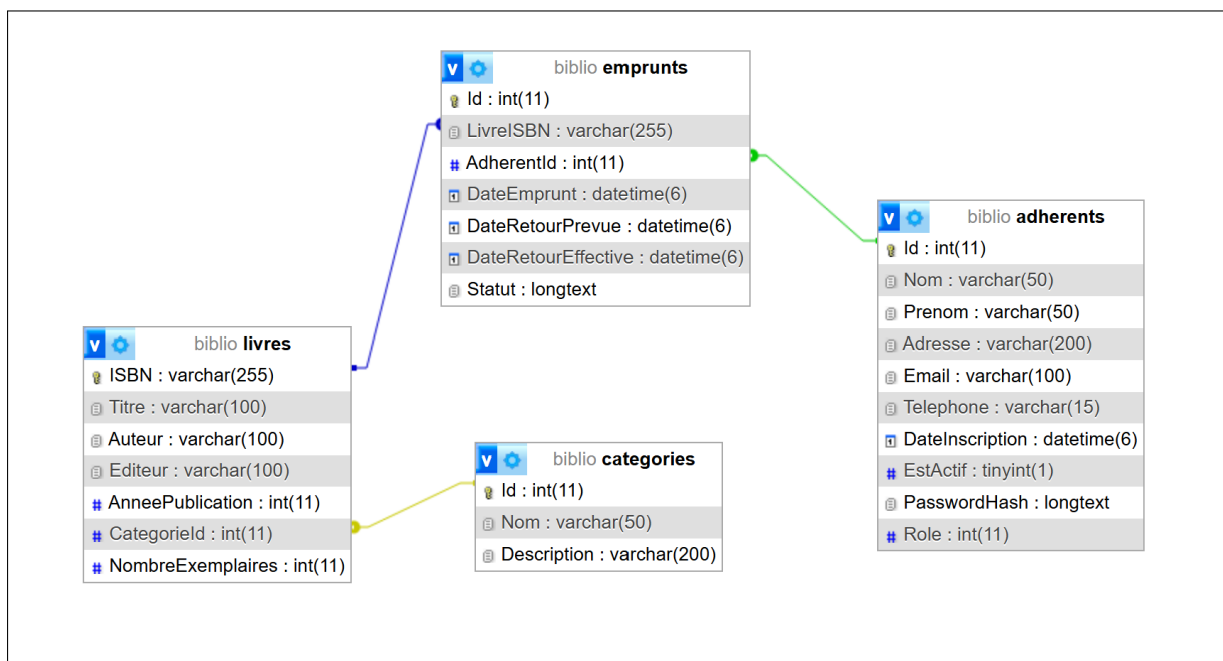


Figure 2: DB Architecture

5 User Interfaces

5.1 Authentification

The screenshot shows the login interface of the BiblioGest application. The window title is "BiblioGest - Gestion de Bibliothèque". On the left, there is a dark blue sidebar with the text "BiblioGest". The main area is light gray and contains a white login form titled "Connexion à BiblioGest". The form has two input fields: "Email :" with the value "salah8jab@gmail.com" and "Mot de passe :" with masked characters ".....". Below the fields is a blue button labeled "Se connecter".

Figure 3: Login Form

5.2 Admin / Staff Interfaces

a. Book management :

The screenshot shows the BiblioGest - Gestion de Bibliothèque interface. On the left is a dark sidebar with the logo 'BiblioGest', a welcome message 'Bienvenue, azarkan', the role 'Admin', and four menu items: 'Livres', 'Adhérents', 'Emprunts', and 'Categories'. The main area has a search bar with a 'Rechercher' button. Below it is a table with columns: ISBN, Titre, Auteur, Éditeur, Année, Catégorie, and Exemplaires. The table contains two rows of data. At the bottom right are buttons for 'Ajouter', 'Modifier', 'Supprimer', and 'Enregistrer'.

ISBN	Titre	Auteur	Éditeur	Année	Catégorie	Exemplaires
9782070368228	L'Étranger	Albert Camus	Gallimard	1942	Roman	5
9782266252584	Fondation	Isaac Asimov	Pocket	1951	Science-Fiction	3

Figure 4: Book management page

The 'Ajouter un Livre' form contains input fields for ISBN, Titre, Auteur, Éditeur, Année (with a value of 0), Catégorie (a dropdown menu showing 'Roman'), and Exemplaires (with a value of 0). At the bottom are 'Annuler' and 'Valider' buttons.

(a) Add Book

The 'Modifier le Livre' form contains input fields for ISBN (9782266252584), Titre (Fondation), Auteur (Isaac Asimov), Éditeur (Pocket), Année (1951), Catégorie (a dropdown menu showing 'Science-Fiction'), and Exemplaires (3). At the bottom are 'Annuler' and 'Valider' buttons.

(b) Modify Book

b. Adherent management :

BiblioGest - Gestion de Bibliothèque

BiblioGest

Bienvenue, azarkan

Role: Admin

Livres

Adhérents

Emprunts

Categories

Rechercher

ID	Nom	Prénom	Email	Téléphone	Date d'inscription	Statut	Emprunts
1	salah	Eljably	salah8hahajab@gmail.com	0706746127	11/05/2025	Actif	1
3	Mohammed	Amine	med2003@gmail.com	08078642521	11/05/2025	Actif	1
4	azarkan	zakariae	zakaria8jab@gmail.com	0706746127	11/05/2025	Actif	2
5	elhemdaoui	achraf	achraf@gmail.com	098765543456	12/05/2025	Actif	0

Ajouter

Modifier

Supprimer

Enregistrer

Figure 6: Adherent management page

Ajouter un Adhérent

Nom:

Prénom:

Adresse:

Email:

Téléphone:

Date d'inscription:

06/06/2025

15

Statut:

☒ Actif

Mot de passe:

Annuler

Valider

(a) Add Adherent

Modifier l'Adhérent

Nom:

elhemdaoui

Prénom:

achraf

Adresse:

hahaibkbchjkjbijulibn

Email:

achraf@gmail.com

Téléphone:

098765543456

Date d'inscription:

12/05/2025

15

Statut:

☒ Actif

Mot de passe:

Annuler

Valider

(b) Modify Adherent

c. Categorie management :

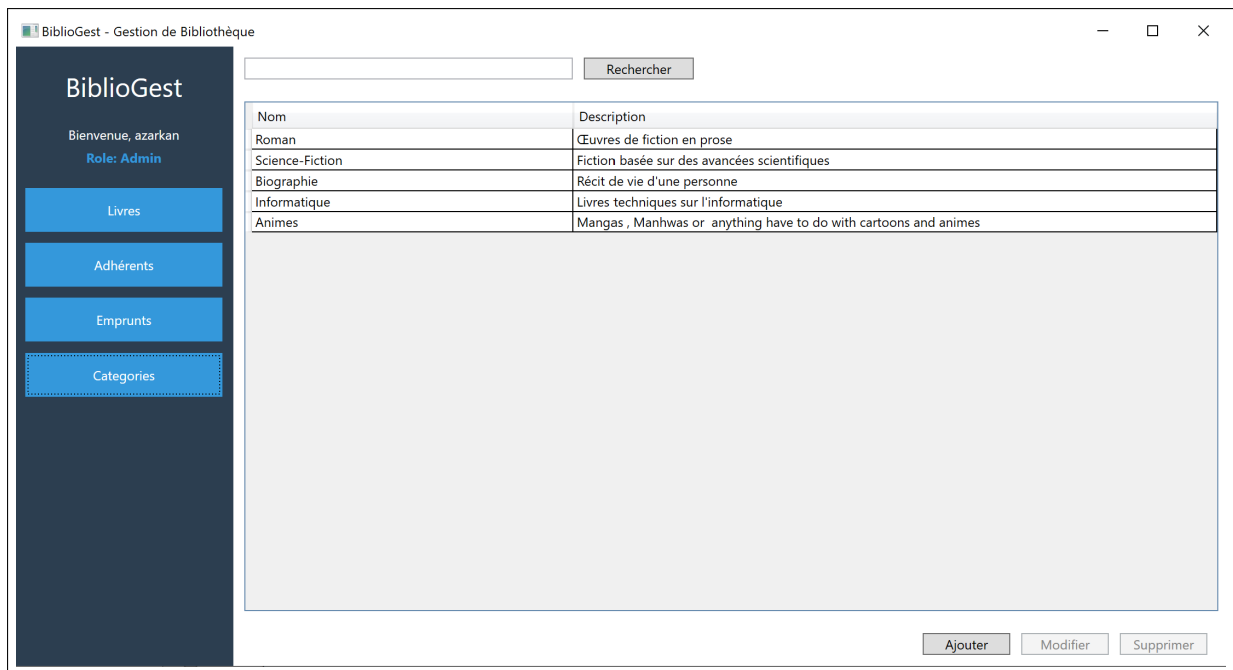


Figure 8: Categorie management page

d. Emprunt management :

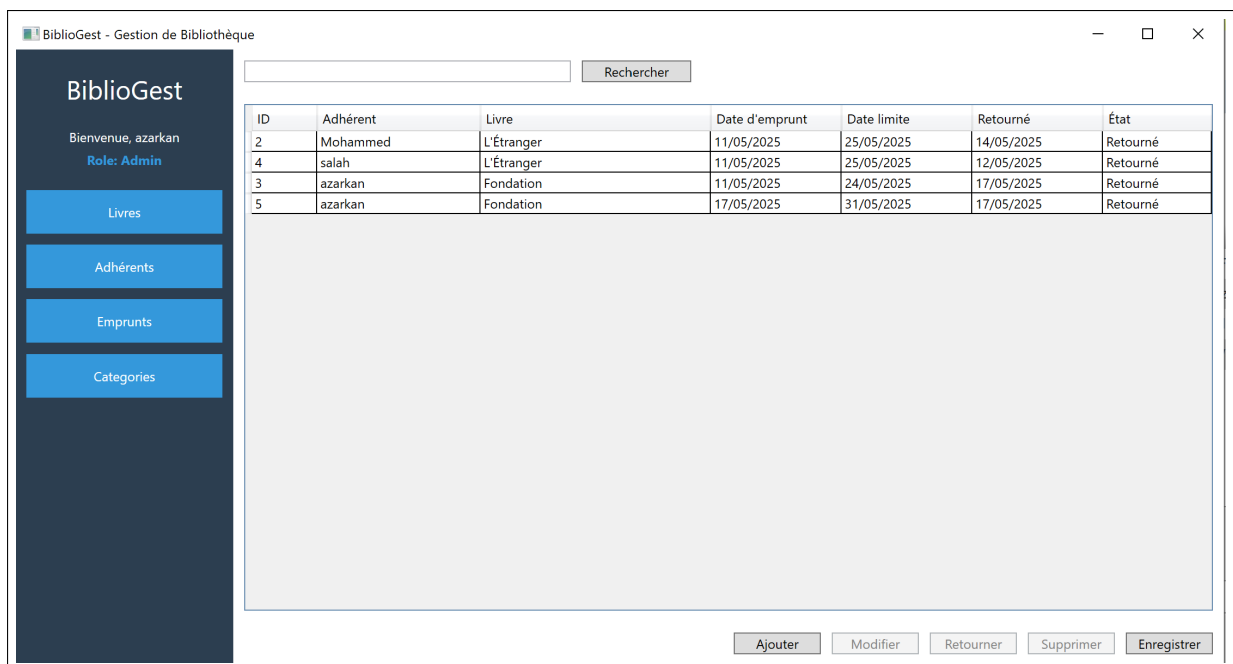


Figure 9: Emprunt management page

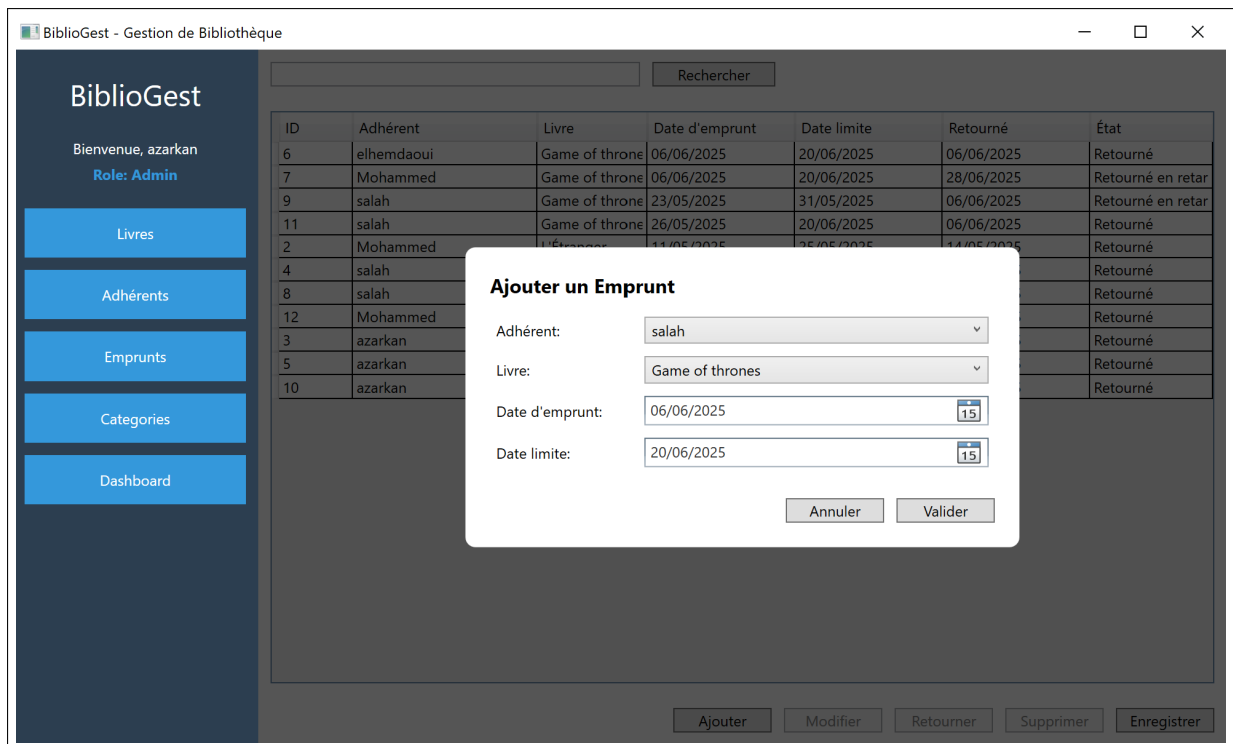


Figure 10: Add Emprunt (specifying the name of the user and the book)

e. Dashboard with statistics :

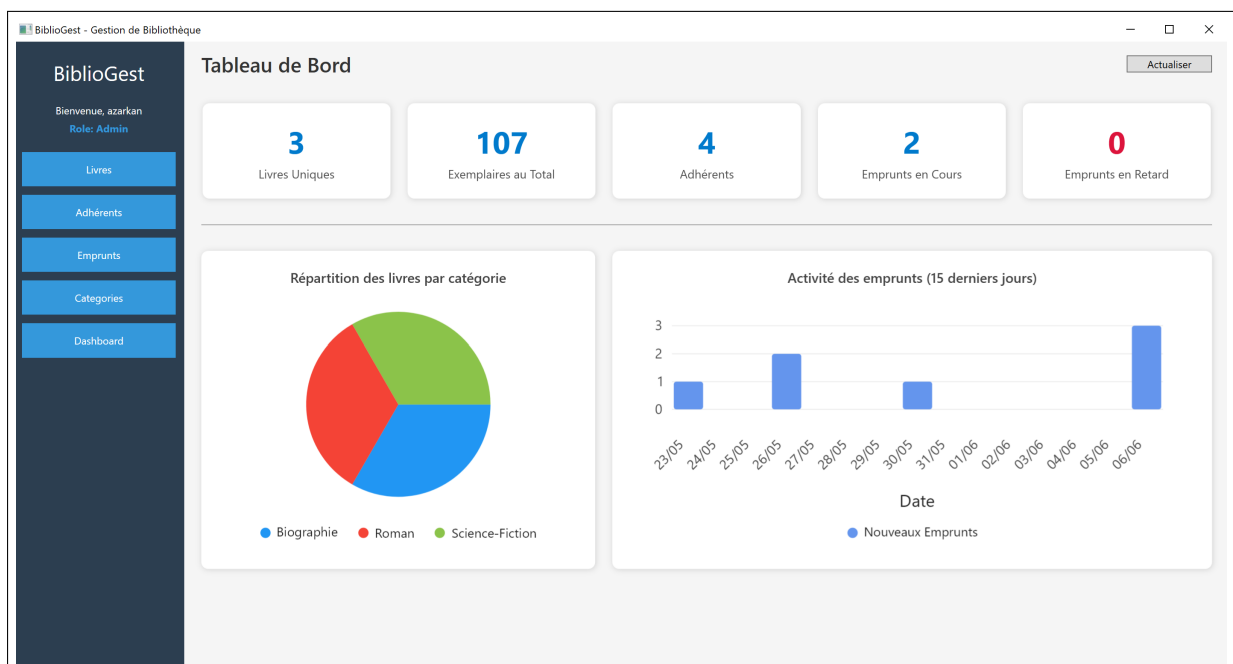


Figure 11: Dashboard with stats)

5.3 Client Interfaces

we also have a Simple interface for clients to see all the books that we have available and search for something specific

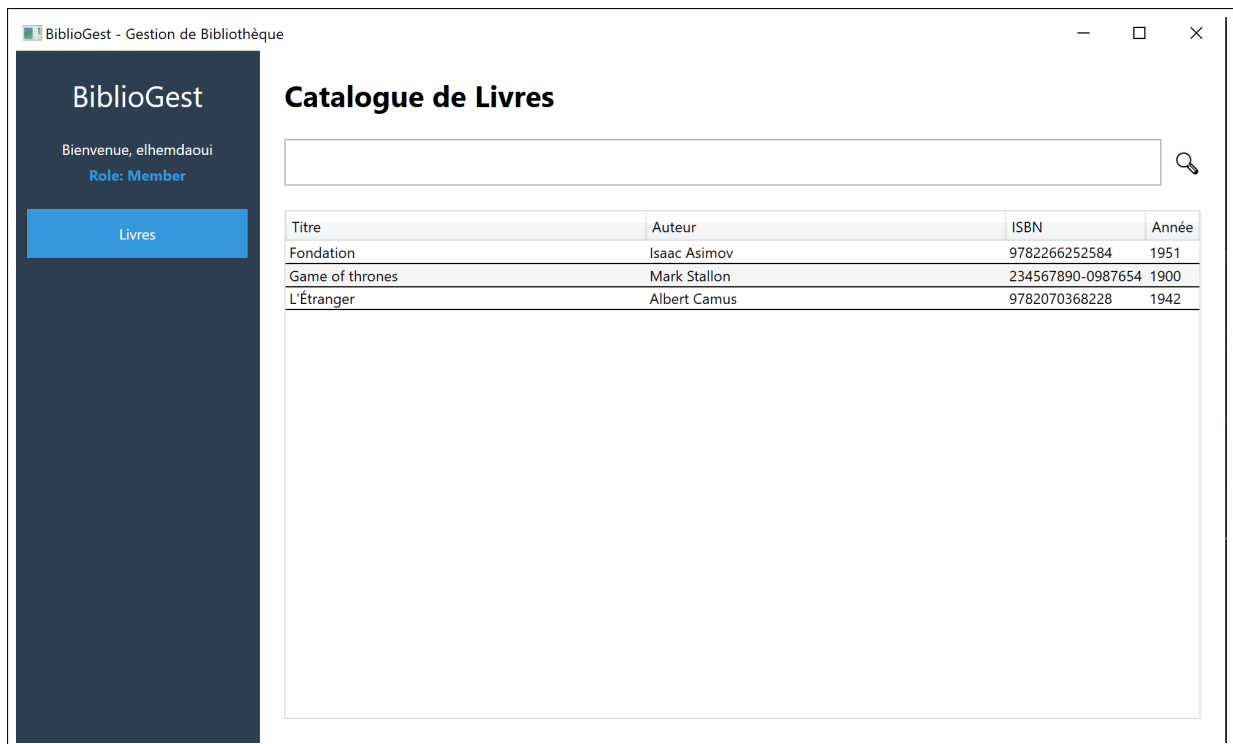


Figure 12: Client's Page

6 Conclusion

This mini project allowed us to apply key concepts of **.NET**, **WPF**, and **Entity Framework Core** to build a functional library management system. Through *BiblioGest*, we gained practical experience in designing user-friendly interfaces, managing data with an ORM, and implementing essential CRUD operations. It was an enriching opportunity to learn and apply these Concepts .