

UETlib

Service Oriented Architecture



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Course project

Instructor

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Requirement

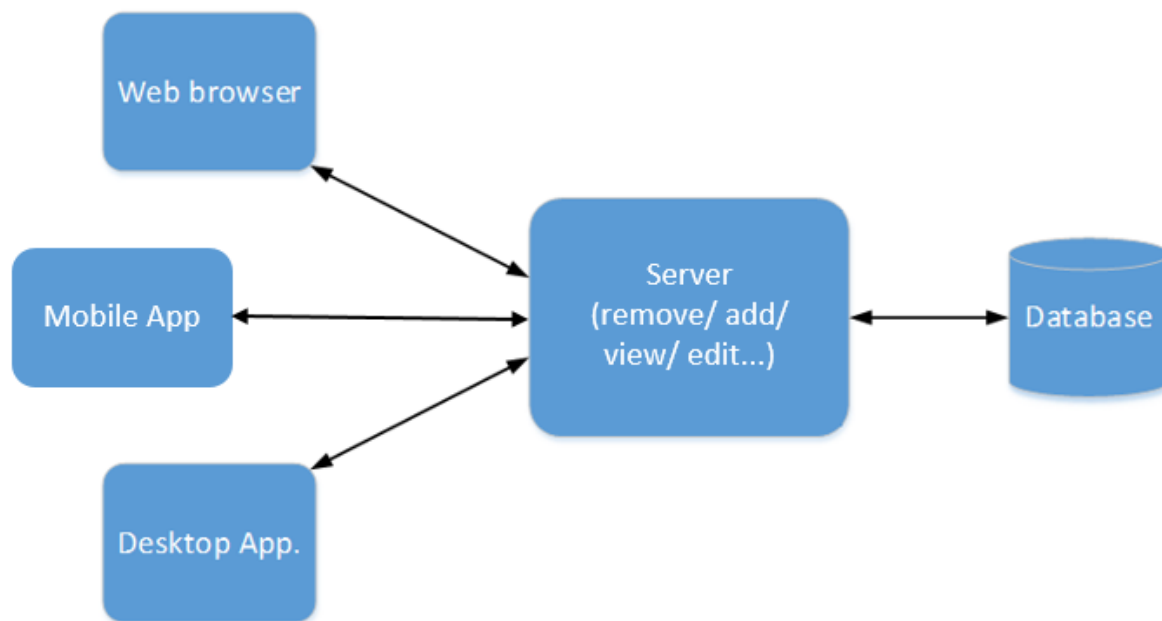
Making an online library system supporting both students and librarians. Students use web browsers and mobile application to see book lists and get books informations. Librarians use desktop application to manage books in library database by some specific functions: view book lists, add book to database, remove book from database, and modify book information.

Overview

UEBlib is an online library system. UETlib consists three parts including web application, desktop application and mobile application. The web and mobile application are for students, and the desktop application, with more functions, is for librarians. This report is the documentation for our system including three main parts: software's requirement, overview and implementation.

We also have public [github repository](#) and [deployed server](#).

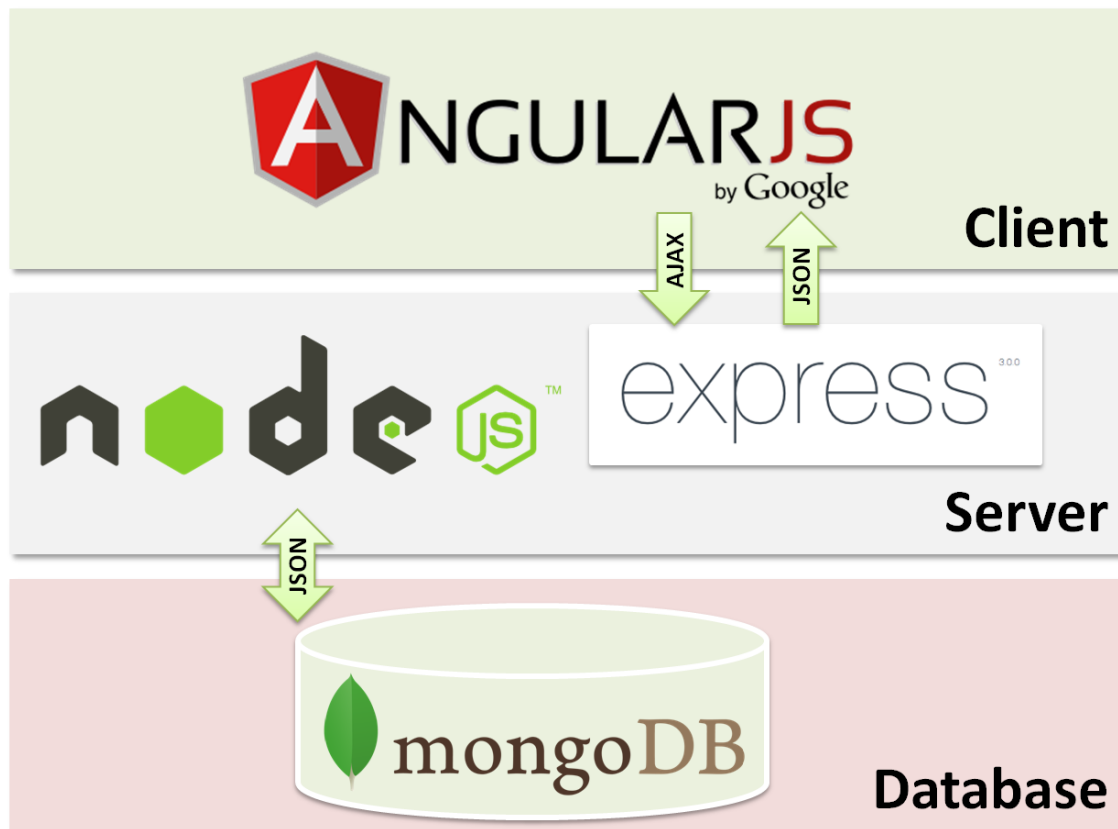
Our system will function like the picture below:



Implementation

Server (include website for students)

For the server, we use MEAN Framework ([MongoDB](#), [ExpressJS](#), [AngularJS](#) and [Node.js](#)) to build our system including back-end and front-end (website). MEAN is new technology for full-stack web with many powerful tools and plugins and wide supported community. It also organizes system as MVC model, which is very familiar with every web developer.




We will explain why we choose MEAN Framework for some reasons below:

- Node.js allows us to use JavaScript on the back-end as well as the front-end which can save us from having to learn a separate language.
- The NoSQL nature of MongoDB allows us to quickly and easily manage the data, we can flexibility to create data structures, which is a very valuable attribute when we are trying to build a product without clear specifications.

- Because of using JavaScript to implement front-end and back-end, we use JSON object to communicate all the time between our modules. It is the big plus point of MEAN Framework.
- Finally, these technologies have a lot of community support behind them so finding answers to questions is going to be much easier.

There are some screenshots we took from our website:

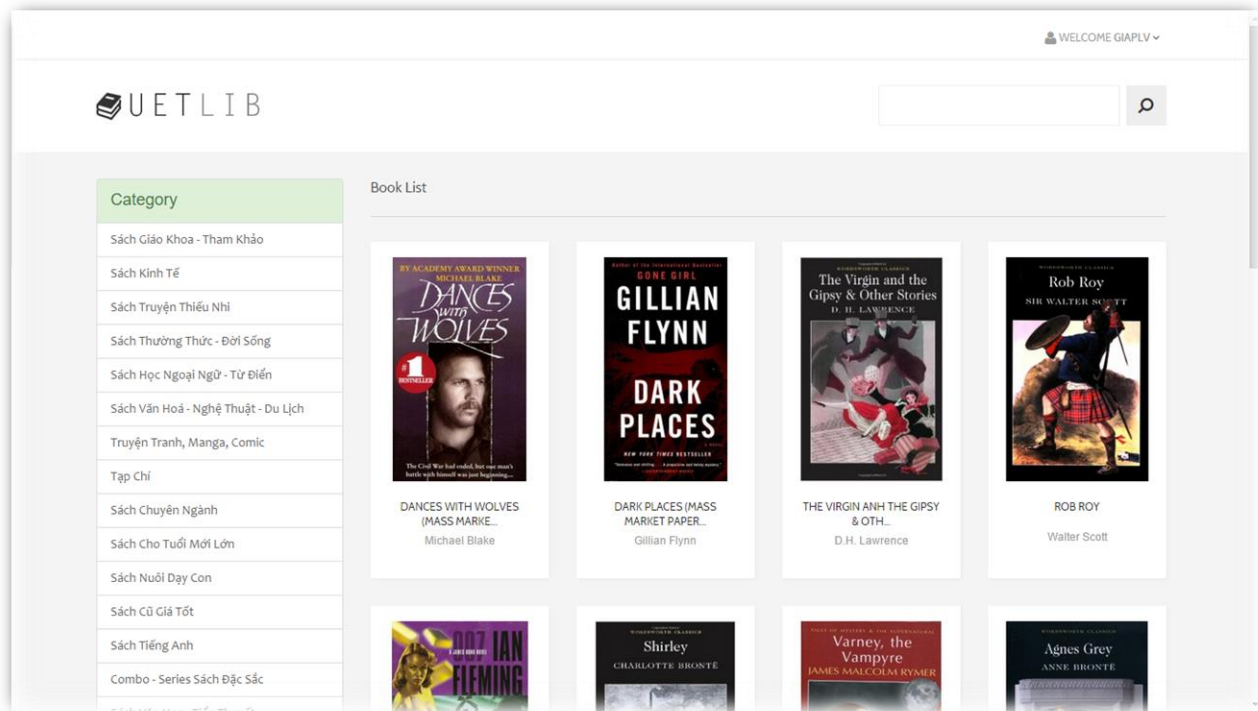
- Login form



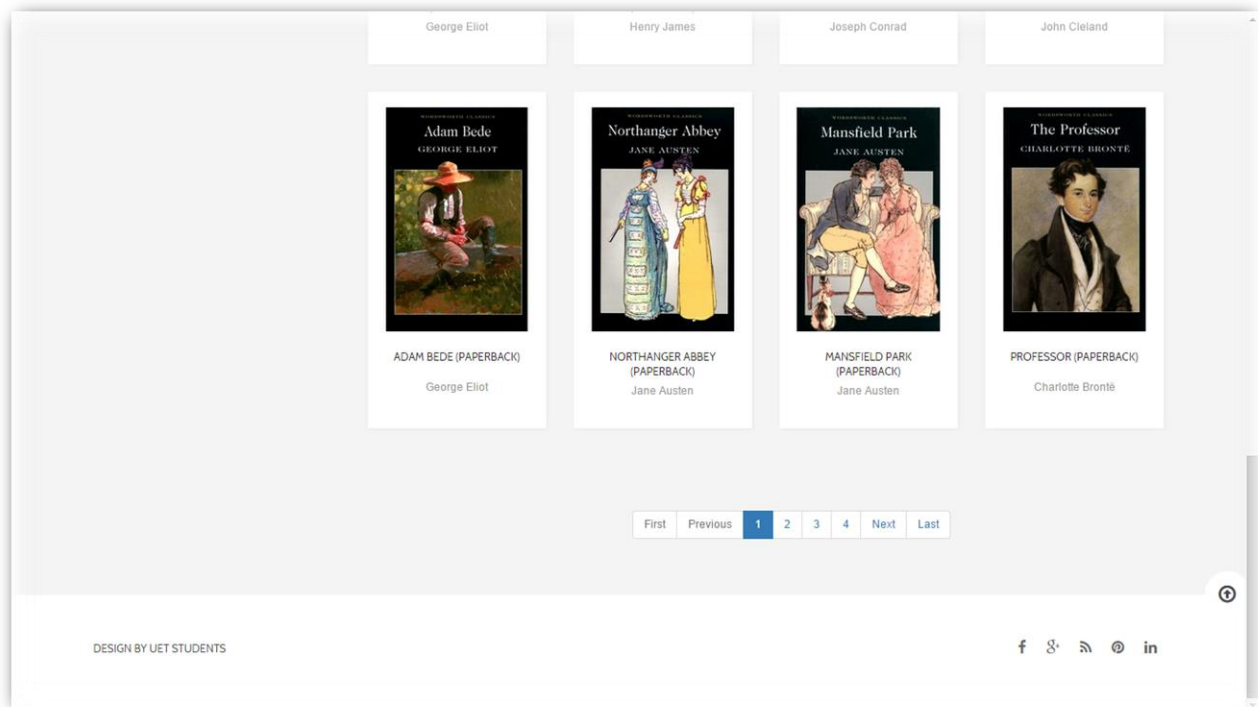
The screenshot shows a login form with the following elements:

- A title "Login" with a key icon.
- A "Username" label above a text input field containing the text "admin".
- A "Password" label above a text input field containing five dots ".....".
- An orange "Login" button with a mouse cursor hovering over it.
- A horizontal line below the button.
- A link "Need an account? [Signup](#)" at the bottom.

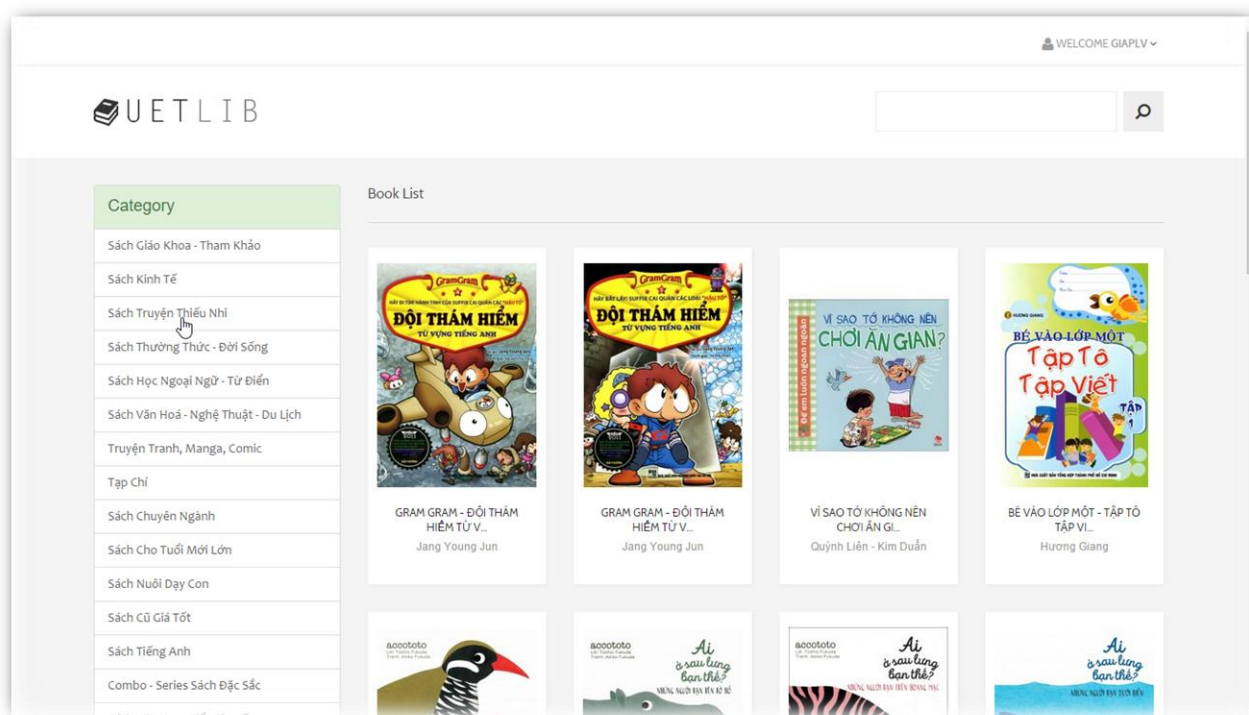
- After login, students can access the main page



- Modern Pagination system



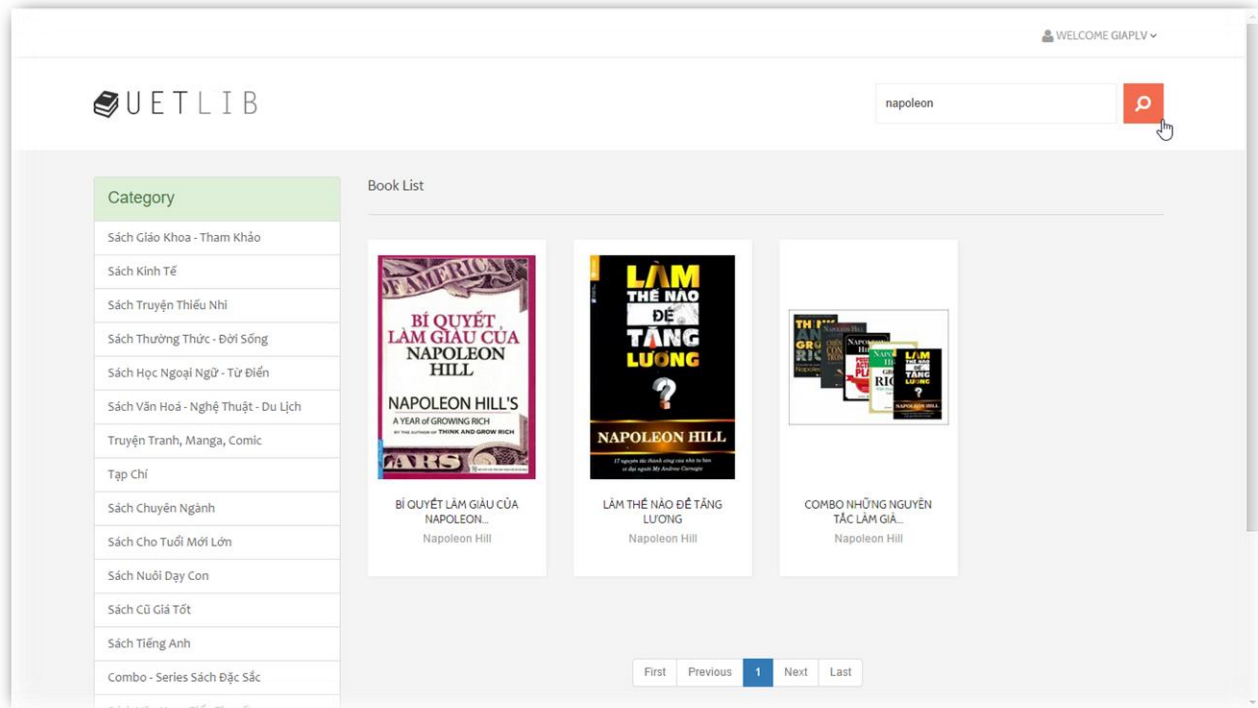
- View book by category



- View book detail



- Students can also search title and author of the books



Desktop application

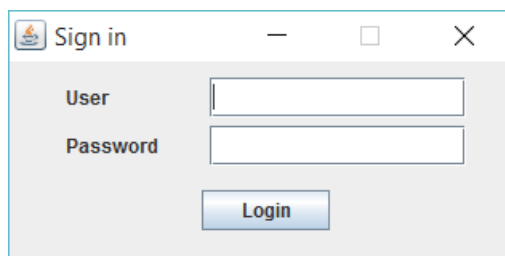
We built our desktop application, which allows the library staffs to manage the books, on Java platform. This app has these main functions: view all books of the library, edit the details of books, add a new book and delete books.

We use the standard HTTP requests to make communication between the app and the server.

The user interface of the app is built by the library Java Swing.

Here are some screen shots of our desktop application:

- Log-in form



- After logging in, the staff will be able to see all the books of the library

Library Manager

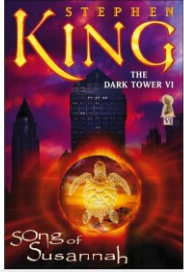
Title	Author	Category	Page	Publisher	Date	More info...	Edit	Delete
The Dark Tower VI - Song Of Susannah	Stephen King	Sách Tiếng Anh	413		01-2004	More info...	Edit	Delete
Mary Barton	Elizabeth Cleghorn Gaskell	Sách Tiếng Anh	414		12-2012	More info...	Edit	Delete
Tender Is The Night	F. Scott Fitzgerald	Sách Tiếng Anh	413		12-2011	More info...	Edit	Delete
Billy Budd And Other Stories	Herman Melville	Sách Tiếng Anh	300		12-1998	More info...	Edit	Delete
The Runaway Jury	John Grisham	Sách Tiếng Anh	550		01-1997	More info...	Edit	Delete
Happy Birthday: A Novel	Danielle Steel	Sách Tiếng Anh	416		07-2012	More info...	Edit	Delete
Gone Tomorrow	Lee Child	Sách Tiếng Anh	543		01-2010	More info...	Edit	Delete
A Wanted Man: A Jack Reacher Novel	Lee Child	Sách Tiếng Anh	606		03-2013	More info...	Edit	Delete
The Affair: A Jack Reacher Novel	Lee Child	Sách Tiếng Anh	542		03-2012	More info...	Edit	Delete
The Chamber	John Grisham	Sách Tiếng Anh	676		04-1995	More info...	Edit	Delete
The Rainmaker	John Grisham	Sách Tiếng Anh	598		09-2003	More info...	Edit	Delete
Highlander Most Wanted: The Montgomerys And Armstrongs	Maya Banks	Sách Tiếng Anh	351		03-2013	More info...	Edit	Delete
Seduction Of A Highland Lass (The Highlanders)	Maya Banks	Sách Tiếng Anh	343		09-2011	More info...	Edit	Delete
Never Seduce A Scot: The Montgomerys And Armstrongs	Maya Banks	Sách Tiếng Anh	410		09-2012	More info...	Edit	Delete
The Necromancer: Book 4	Michael Scott	Sách Tiếng Anh	396		06-2011	More info...	Edit	Delete
Death Angel: A Novel	Linda Howard	Sách Tiếng Anh	377		04-2009	More info...	Edit	Delete
Tom Jones	Henry Fielding	Sách Tiếng Anh			05-1992	More info...	Edit	Delete
Digital Fortress	Dan Brown	Sách Tiếng Anh			08-2009	More info...	Edit	Delete
The Diamond As Big As The Ritz And Other Stories	F. Scott Fitzgerald	Sách Tiếng Anh			12-1999	More info...	Edit	Delete
Deception Point		Sách Tiếng Anh			12-2009	More info...	Edit	Delete
Lethal Legacy (Alexandra Cooper)	Linda Fairstein	Sách Tiếng Anh	404		12-2009	More info...	Edit	Delete
The High Lord: Book 3 Of The Black Magician	Trudi Canavan	Sách Tiếng Anh	647		03-2010	More info...	Edit	Delete
Excession		Sách Tiếng Anh	451		05-1997	More info...	Edit	Delete
The Gambler And The House Of The Dead	Fyodor Dostoevsky	Sách Tiếng Anh	454		05-2010	More info...	Edit	Delete

- And use the functions of the app



- Function – view all the details of a book

The Dark Tower VI - Song Of Susannah



The Dark Tower VI - Song Of Susannah

Author	Stephen King
Category	Sách Tiếng Anh
Page	413
Publisher	unknown
Date	01-2004
ID	56097d088b728b3961926d9c

Description

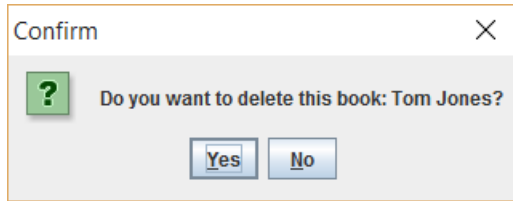
At one point in this final book of the Dark Tower series, the character Stephen King (added to the plot in Song of Susannah) looks back at the preceding pages and says "when this last book is published, the readers are going to be just wild." And he's not kidding. After a journey through seven books and over 20 years, King's Constant Readers finally have the conclusion they've been both eagerly awaiting and silently dreading. The tension in the Dark Tower series has built steadily from the beginning and, like in the best of King's novels, explodes into a violent, heart-tugging climax as Roland and his ka-tet finally near their goal. The body count in The Dark Tower is high. The gunslingers come out

- Function – edit a book

Edit book

Title	<input type="text" value="The Dark Tower VI - Song Of Susannah"/>
Author	<input type="text" value="Stephen King"/>
Category	<input type="text" value="Sách Tiếng Anh"/>
Page	<input type="text" value="413"/>
Publisher	<input type="text"/>
Date	<input type="text" value="01-2004"/>
Image	<input type="text" value="m/cache/200x280/media/catalog/product/9/6/9605817.jpg"/>
Description	<input type="text" value="story was creating itself as it went along. Wherever that woman is now (the clearing at the end of the path, perhaps?), let's hope she has a copy of The Dark Tower. Surely she would agree it's been worth the wait. (Benjamin Reese)"/>

- Function – delete a book – the confirm dialog



- Function – add a new book

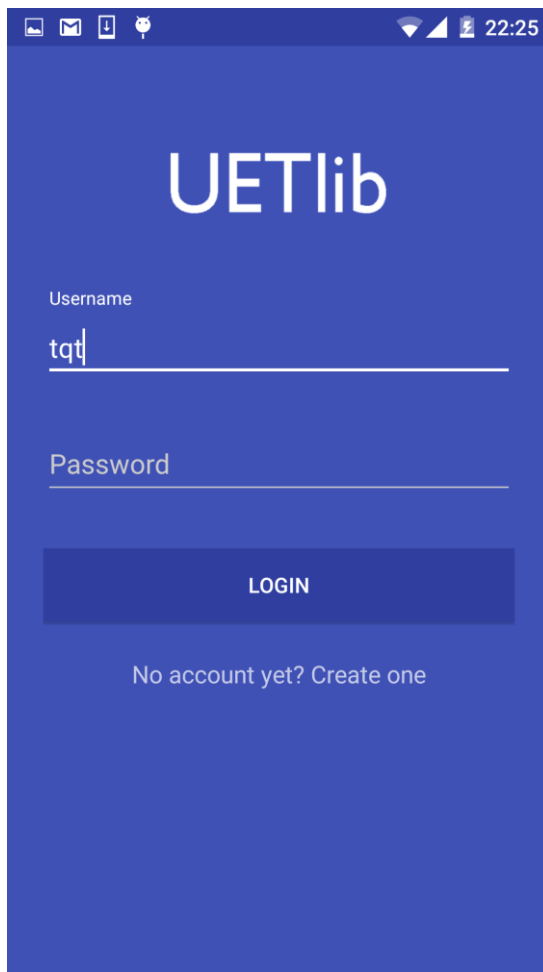
Mobile application

We have website for students and desktop application for library staffs to access our system. Besides, we also build an Android mobile application for students to easily search and view books' information on their smartphone.

This application has all functions that we implemented on the website. We also use standard HTTP requests to communicate between mobile app and server like on the desktop application and the website.

There are some screenshots that we took one the real mobile running out application:

- Login and signup



UETlib

Username

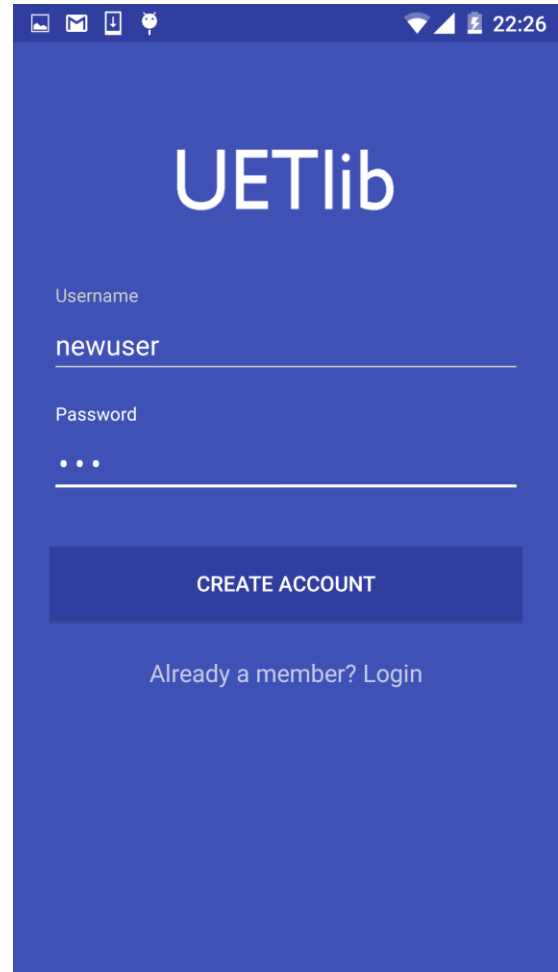
tqt

Password

LOGIN

No account yet? Create one

The image shows a mobile app interface for UETlib. The background is a solid blue color. At the top, there is a status bar with icons for signal, Wi-Fi, battery, and the time 22:25. Below the status bar, the app title 'UETlib' is displayed in a large, white, sans-serif font. Underneath the title, there are two input fields. The first is labeled 'Username' and contains the text 'tqt'. The second is labeled 'Password'. Below the input fields, there is a dark blue button with the text 'LOGIN' in white. At the bottom, there is a link that says 'No account yet? Create one'.



UETlib

Username

newuser

Password

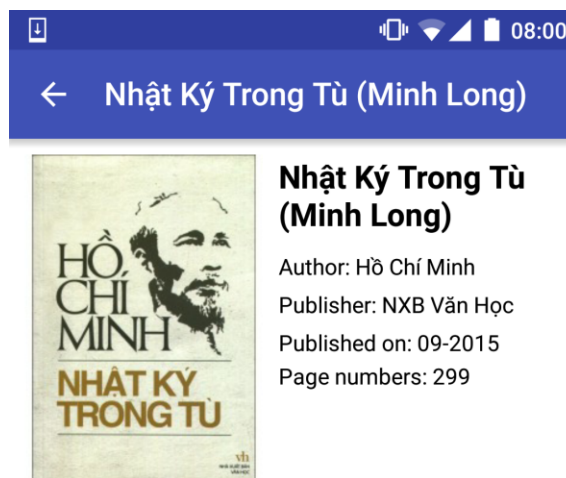
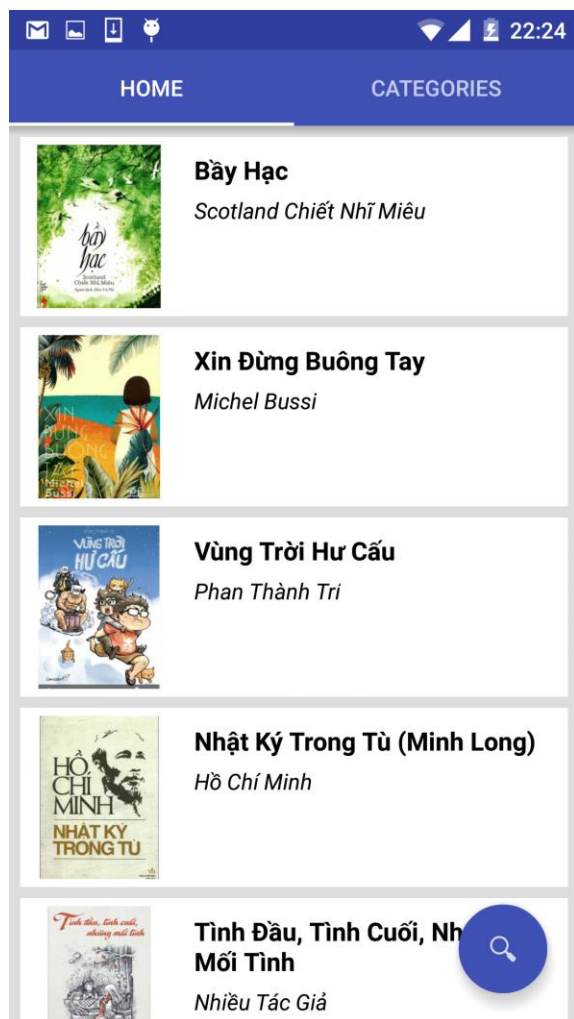
...

CREATE ACCOUNT

Already a member? Login

The image shows a mobile app interface for UETlib, similar to the login screen but for signing up. The background is a solid blue color. At the top, there is a status bar with icons for signal, Wi-Fi, battery, and the time 22:26. Below the status bar, the app title 'UETlib' is displayed in a large, white, sans-serif font. Underneath the title, there are two input fields. The first is labeled 'Username' and contains the text 'newuser'. The second is labeled 'Password' and contains three dots. Below the input fields, there is a dark blue button with the text 'CREATE ACCOUNT' in white. At the bottom, there is a link that says 'Already a member? Login'.

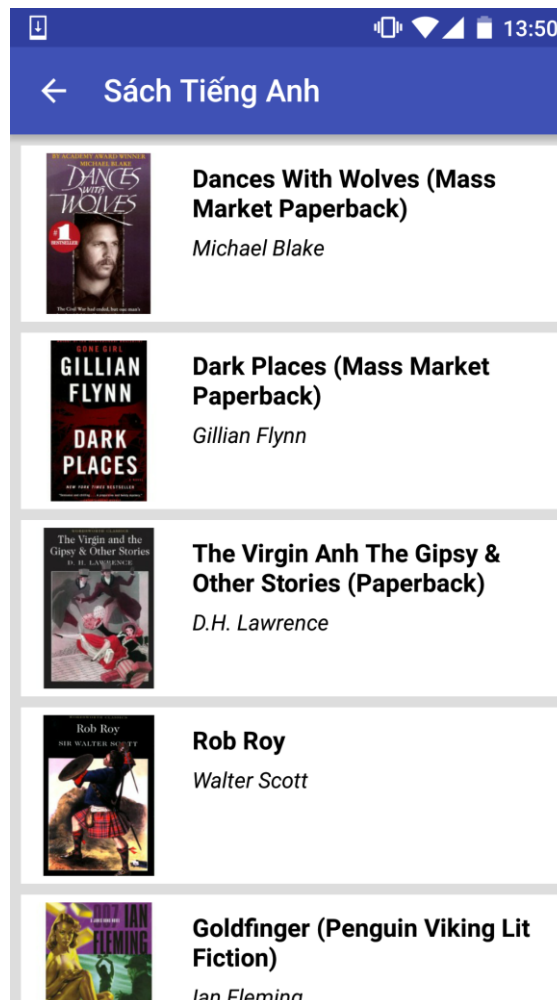
- Home and book's information



Description

Nhật ký trong tù là một tập thơ chữ Hán, gồm hơn một trăm bài thơ, phần cuối có một số ghi chép về quân sự và thời sự, được Chủ tịch Hồ Chí Minh sáng tác trong thời gian hơn một năm (từ 29-8-1942 đến 10-9-1943) Người bị chính quyền địa phương của Tưởng Giới Thạch bắt giam trái phép tại các nhà tù ở tỉnh Quảng tây, Trung Quốc. Nhật ký trong tù lên án chế độ nhà tù hà khắc của chính quyền Quốc dân Đảng, thể hiện tinh thần lạc quan cách mạng và tình cảm nhân đạo cộng sản chủ nghĩa cao đẹp của Chủ tịch Hồ Chí Minh. Tập thơ được đánh giá là một văn kiện lịch sử quan trọng, một tác phẩm văn học xuất sắc, có tác dụng giáo dục sâu sắc phẩm chất và đạo đức cách mạng cho

- We also can view books by category



- The most useful function is searching, students can search title and author of the books.

