CS472 – Web Programming

MIU-DVD SHOP
Technical Documentation

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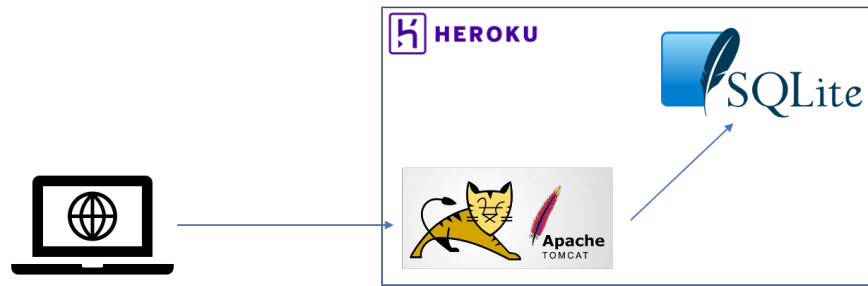- **Duy Trung Do - 986891**

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Technical Documentation

1. Introduction

This document will show in detail about the information that are implemented in MIU-DVD Shop project. Full source code can be download from Github: https://github.com/votamvan/cs472-project. Live demo can be accessed from https://cs472.herokuapp.com/.

1.1 Technical Overview

Front-end Tech	
HTML	HTML5
CSS	Bootstrap
Javascript	JQuery
Architecture	Request/Response AJAX

Back-end Tech	
View	JSP/JSTL
Controller	Java Servlet
JSON handlers	Gson
ORM	MyBatis
Architecture	MVC

Tech Stack

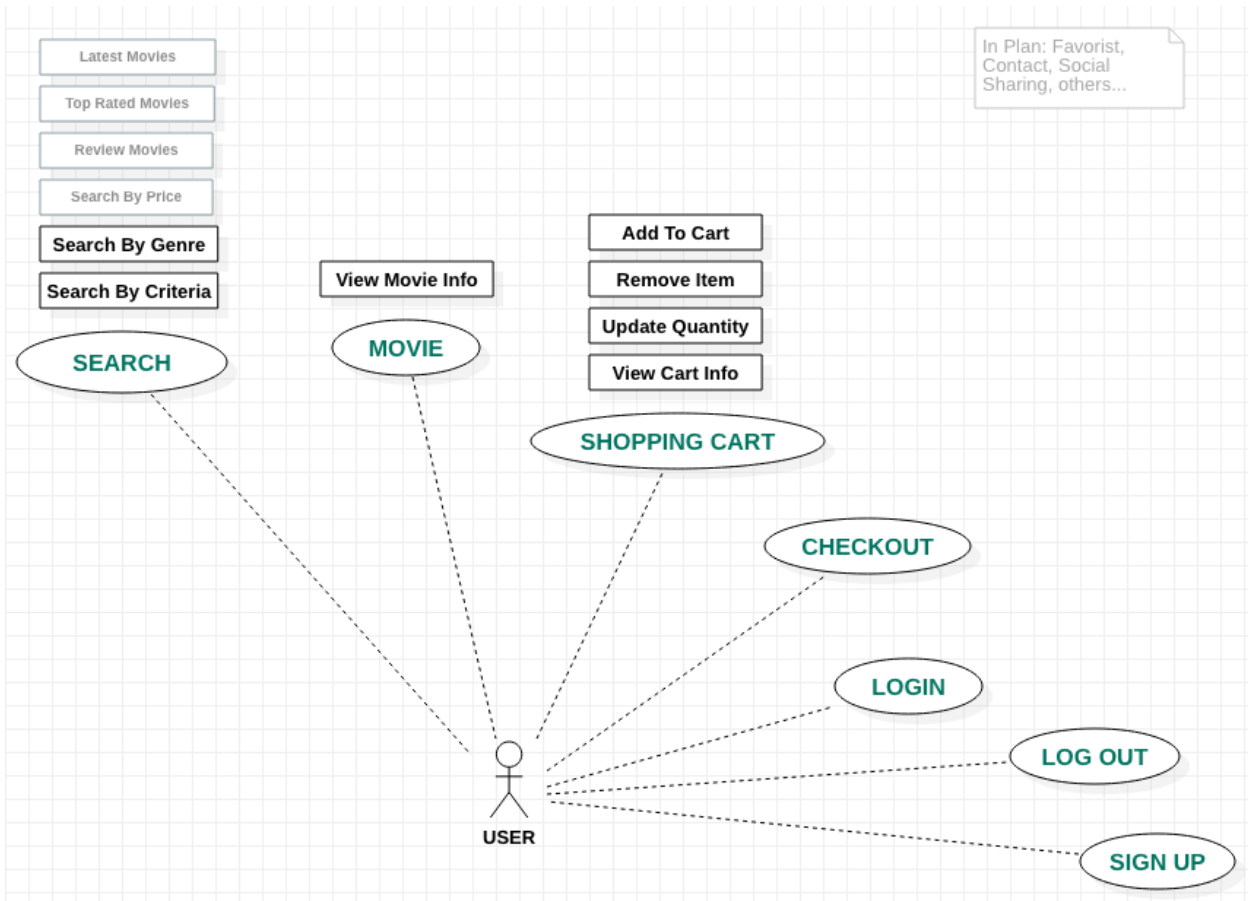The project combines front-end and back-end technologies from the beginning.

FRONT-END	
Build beautiful web user interfaces.	With a professional template we don't need to spend our budget on fighting with HTML layout and tuning pixels in CSS, but focus on the application logic.
Maximum support user devices to access the web site.	With implementation of Bootstrap 4, responsive layouts automatically adjust and adapt to any device screen size, whether it is a desktop, a laptop, a tablet, or a mobile phone.
Concentrate on a single feature of eCommerce.	Content is designed to take care of all of the necessary information helping the user focus to search and buy the most relevant products in the fastest way.

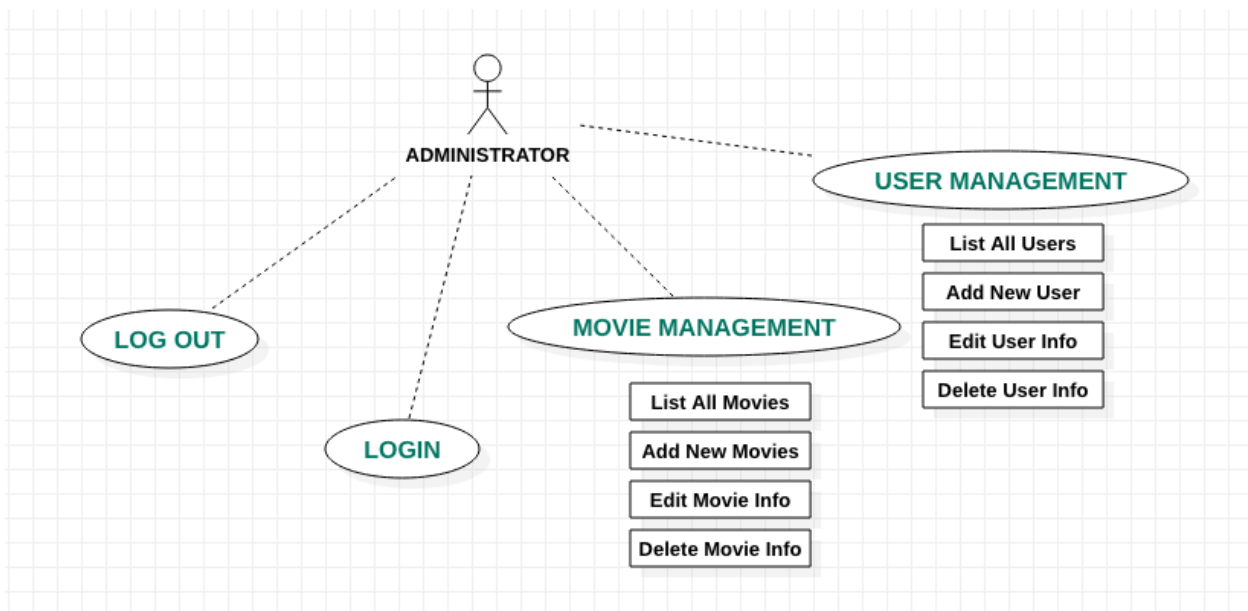|	
Full support asynchronous CRUD operations.	JavaScript Object Notation (JSON), Asynchronous JavaScript And XML (AJAX)
Comply with standards and good practices in the market.	Validate HTML, CSS, Javascript, jQuery according to the front-end development standards and best practices: World Wide Web Consortium (W3C), JavaScript Immediately-invoked Function Expressions (IIFE)

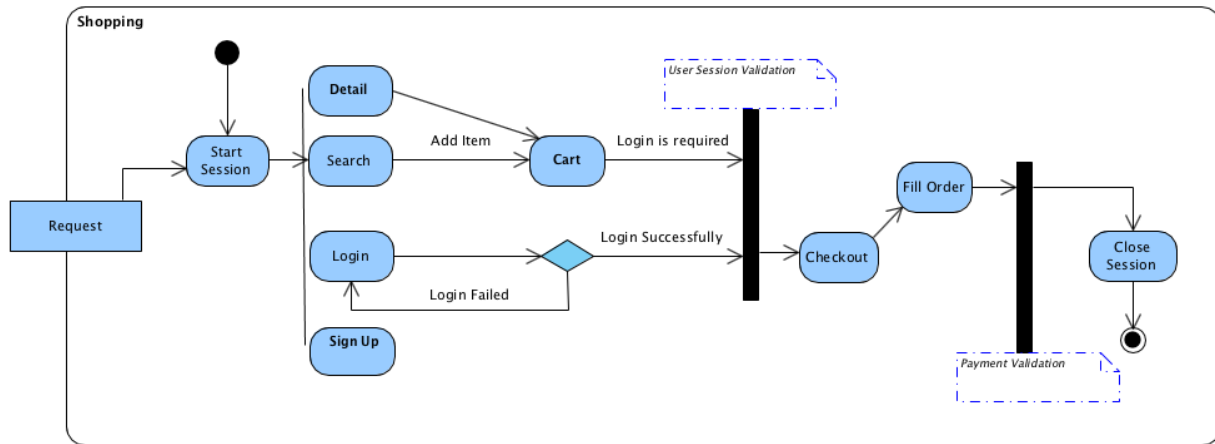| BACK-END	
Pure code in Java on the server-side.	Implement simple Java Servlet, Java Filter to handle everything sending from the client: HTML request, AJAX
Separation of controls for modularity and testability.	MVC Model-2 helps us write more modular software and more reusable, maintainable and testable applications.
Layout with support by a master page.	Master page with using custom tags helps us to write the separated pages are extensible and maintainable.
Comply with standards and good practices in the market.	PGR Pattern, URL Path Rewrite, Error Pages.
We're ready to go in one step with embed server (Tomcat).	We have integrated the embed server Tomcat so that we can get a fully configured environment, including a standalone server, with just a few commands.
Fast handling to lightweight relational database.	We have integrated the SQLite as data sources for handling storing the website data instead of using in-memory databases.
Easy binding and mapping to database.	We have integrated the MyBatis as ORM framework for mapping objects between database and memory to decrease the implementation efforts.
Cloud-ready application.	Hosting on the cloud platform helps us to get more reviews instead of running the local development environment.

2. System Design

2.1. Customer Use Cases

Latest Movies

Top Rated Movies

Review Movies

Search By Price

Search By Genre

Search By Criteria

SEARCH

View Movie Info

MOVIE

Add To Cart

Remove Item

Update Quantity

View Cart Info

SHOPPING CART

In Plan: Favorist, Contact, Social Sharing, others...

CHECKOUT

LOGIN

LOG OUT

USER

SIGN UP

2.2. Administrator Use Cases

ADMINISTRATOR

USER MANAGEMENT

List All Users

Add New User

Edit User Info

Delete User Info

LOG OUT

MOVIE MANAGEMENT

List All Movies

Add New Movies

Edit Movie Info

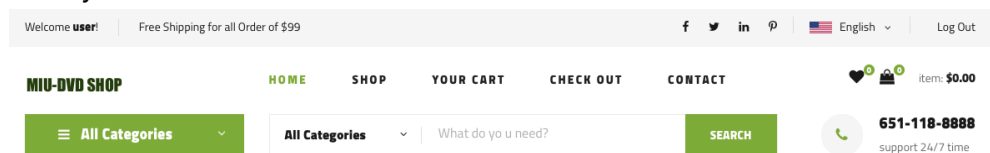Delete Movie Info

LOGIN

2.3. Shopping workflow

3. UI/UX Design

3.1. Customer Pages

3.1.1. Search

3.1.1.1. Search By Criteria

3.1.1.2. Search By Genre

MIU-DVD SHOP

☰ All categories	⌄
Adventure	
Action	
Animation	
Comedy	
Crime	
Drama	
Family	
Fantasy	
Horror	
Mystery	
Romance	
Science Fiction	
Thriller	

Featured Movie

All   Thriller   Crime   Drama   Science Fiction   Action   Adventure   Mystery   Fantasy   Family   Animation   Comedy
Romance   Horror

Pulp Fiction
$13.00

The Shawshank Redemption
$12.00

Blade Runner
$5.00

Fight Club
$7.00

The Dark Knight
$32.00

Avatar
$9.00

The Avengers
$42.00

Whiplash
$12.00

Gone Girl
$26.00

Dawn of the Planet of the Apes
$29.00

Guardians of the Galaxy
$25.00

The Maze Runner
$6.00

MIU-DVD SHOP

Home — The Shawshank Redemption's' Detail

FEAR CAN HOLD YOU PRISONER.
HOPE CAN SET YOU FREE.

TIM ROBBINS   MORGAN FREEMAN

THE
SHAWSHANK
REDEMPTION

THIS FALL

The Shawshank Redemption

★★★★½ (18 reviews)

$12.00

Framed in the 1940s for the double murder of his wife and her lover, upstanding banker Andy Dufresne begins a new life at the Shawshank prison, where he puts his accounting skills to work for an amoral warden. During his long stretch in prison, Dufresne comes to be admired by the other inmates -- including an older prisoner named Red -- for his integrity and unquenchable sense of hope.

| - | 1 | + | ADD TO CARD | ♡ |

Availability	In Stock
Shipping	01 day shipping. Free pickup today
Weight	0.5 kg
Share on	f 🐦 📷 📌

Description   Information   Reviews (18)

Overview

Framed in the 1940s for the double murder of his wife and her lover, upstanding banker Andy Dufresne begins a new life at the Shawshank prison, where he puts his accounting skills to work for an amoral warden. During his long stretch in prison, Dufresne comes to be admired by the other inmates -- including an older prisoner named Red -- for his integrity and unquenchable sense of hope.

3.1.3. Shopping Cart

f v in P | 🇺🇸 English ⌄ | Log Out

MIU-DVD SHOP   HOME   SHOP   YOUR CART   CHECK OUT   CONTACT   ♥⁰ 🛍³ item: **$98.00**

Shopping Cart
Home — Shopping Cart

Movie		Price	Quantity	Total		
View	The Shawshank Redemption	**$12.00**	− 4 +	**$48.00**	⟳	×
View	The Circle	**$5.00**	− 2 +	**$10.00**	⟳	×
View	Baby Driver	**$40.00**	− 1 +	**$40.00**	⟳	×

CONTINUE SHOPPING   ⟳ UPADATE CART

Discount Codes

Enter your coupon code	APPLY COUPON

Cart Total

SubTotal	**$98.00**
Total	**$98.00**

PROCEED TO CHECKOUT

Billing Details

Fist Name*

| John |

Last Name*

| Smith |

Address*

| 123 4th St |

| Apt 456 |

Town/City*

| Fairfield |

Country/State*

| IA |

Country*

| United States |

Postcode / ZIP*

| 52556 |

Phone*

| 9877654321 |

Email*

| ad@miu.edu |

☐ Ship to a different address?

Order notes*

| Fast shipping is needed. |

Your Order

Products	Total
The Shawshank Redemption	$48.00
The Circle	$10.00
Baby Driver	$40.00
Subtotal	**$98.00**
Total	**$98.00**

Please provide the payment information to perform your order.

Payment Info

Accepted Cards

🔘 Visa
⚪ MasterCard
⚪ Discover
⚪ American Express

Card Name

| |

Card Number

| |

3.1.5. Sign Up

3.1.6. User Login
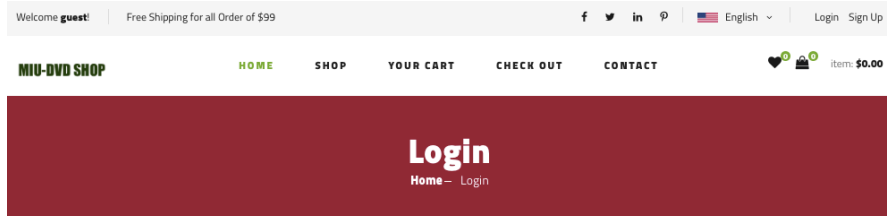
3.2. Administrator Pages
3.2.1. Product Management

| | hello@dvdshop.com | Welcome Admin | | f y in ℗ | 🇺🇸 English ∨ | Logout |

MIU-DVD SHOP

☰ Admin Menu ∨

- Users
- Products
- Logout

Product Information

Id	Id auto-generated
Title	Title
Overview	
Genres	Seperated by a comma
Release Date	MM/DD/YY
Poster	Poster URL: http://example.com/poster.jpg
Price	##

Add Product   Update Product

Poster	Id	Title	Overview	Genres	Release Date	Price	Update	Delete
	1	Pulp Fiction	A burger-loving hit man, his philosophical partner, a drug-addled gangster's moll and a washed-up boxer converge in this sprawling, comedic crime caper. Their adventures unfurl in three stories that ingeniously trip back and forth in time.	Thriller,Crime	9/10/94	13	Update	Delete
	2	The Shawshank Redemption	Framed in the 1940s for the double murder of his wife and her lover, upstanding banker Andy Dufresne begins a new life at the Shawshank prison, where he puts his accounting skills to work for an amoral warden. During his long stretch in prison, Dufresne comes to be admired by the other inmates -- including an older prisoner named Red -- for his integrity and unquenchable sense of hope.	Drama,Crime	9/23/94	12	Update	Delete
	3	Blade Runner	In the smog-choked dystopian Los Angeles of 2019, blade runner Rick Deckard is called out of retirement to terminate a quartet of replicants who have escaped to Earth seeking their creator for a way to extend their short life spans.	Science Fiction,Drama,Thriller	6/25/82	5	Update	Delete
	4	Fight Club	A ticking-time-bomb insomniac and a slippery soap salesman channel primal male aggression into a shocking new form of therapy. Their concept catches on, with underground "fight clubs" forming in every town, until an eccentric gets in the way and ignites an out-of-control spiral toward oblivion.	Drama	10/15/99	7	Update	Delete

Batman raises the stakes in his war on crime. With the help

3.2.1. User Management (Sample for test purpose)

MIU-DVD SHOP

☰ **Admin Menu** ˅
Users
Products
Logout

User Information

User ID	ID auto-generated
Full Name	Full Name
User Name	User Name
Password	Password

[Add User] [Edit User]

ID	Full Name	User Name	Password	Update	Delete
1	Admin User	admin	123456	Update	Delete
2	John Smith	smith	123456	Update	Delete
16	Duy Do	duydo	111111	Update	Delete
17	abc	abc	1	Update	Delete
18	john smith	john.smith	1	Update	Delete
19	test	test1	test1	Update	Delete
20	test2	test2	test2	Update	Delete
21	test3	test3	test3	Update	Delete
22	test4	test4	test4	Update	Delete
23	test5	test5	test5	Update	Delete
24	test6	test6	test6	Update	Delete
25	test7	test7	test7	Update	Delete
26	test8	test8	test8	Update	Delete
27	test9	test9	test9	Update	Delete
28	test10	test10	test10	Update	Delete
33	test11	test11	test11	Update	Delete
34	test12a	test12a	test12a	Update	Delete

3.2.1. Admin Login

4. Database Design

There are two persistent tables: **Products** and **Users** and stored in stored in SQLite file server.

Table 1. Users

Table 2. Products

Table **ShoppingItem** is stored in memory to reduce the heavy load of SQLite file server.

Table 3. ShoppingItem

5. Project Demo

- o Full source code can be download from Github**: https://github.com/votamvan/cs472-project**
- o The demo application is deployed online on Heroku cloud at **https://cs472.herokuapp.com/**
- o The administrator dashboard can be viewed at **https://cs472.herokuapp.com/admin/**
- o To run the project at local machine, please open command line and try the below.

```
$ git clone https://github.com/votamvan/cs472-project
$ cd cs472-project
$ mvn package && sh target/bin/webapp
```

In order to use the live web application on Heroku server, we provide some default credentials for you to do shopping and monitoring the system.

	Username	Password
Administrator	**admin**	**123456**
Customer	**smith**	**123456**

6. References

- o The movie data are extracted from IMDB database (https://imdb.com)
- o Colorlib Organi theme: https://colorlib.com/preview/#ogani