

Revision History

Version	Date	Comment
1.0.0	09/17/2019	Initial Release
1.0.1	09/18/2019	Modification to navigational screens: 8, 10, 11, 12
1.0.2	09/30/2019	Minor fixes to screen 13 & screen 19 note 2
1.0.3	10/01/2019	Minor fixes to screen 7 & 9

Atlanta Movie

Fall 2019 – CS 4400 Database Project

Project Purpose

In this project you will analyze, specify, design, implement, document and demonstrate an online system. You are required to use the classical methodology for database development. The system will be implemented using a relational DBMS that supports standard SQL queries. You will use your localhost MySQL Server (Version 5.1 or above) to implement your database and the application. You also cannot use any other software like Access or SQLite. Ask the professors or TAs if you have questions.

Project Phases

The 4 phases (phase 4 is optional, see syllabus) of the project cover the following work-processes from the Classical Methodology for Database Development (see notes on Canvas). Slides on database design methodology will be useful for phases 1 and 2: All slides have been posted on Canvas.

Re-grade Policy

Once graded phases and/or quizzes are returned, there is a one-week deadline during which you can contest your grade with the TA who graded your assignment. You must first go to the TA who graded your assignment before going to the Head TA, if the TA who graded your assignment was unable to resolve the issue. This clock starts when the papers are returned to the class, not when you personally get your returned paper.

Teams

(See announcement on Canvas)

Deliverables

Phase 1 – Submit to Canvas (one person submits for the group)

The deliverables include (in a single PDF file):

1. A cover page - you **MUST** include all information listed on the template (See Canvas Project Folder).
2. Enhanced Entity Relationship (EER) Diagram
3. Information Flow Diagram (IFD)
 - a. You **MUST** include the screen numbers (see figure caption and figure header) when making IFD. Failure to do so will result in point deduction (25% per screen)
 - b. A partial IFD will be provided to start you off. Please **INCLUDE** these start-up screens in your final submission
4. A list of **logical** constraints. You are required to include at least 3 logical constraints, although a fully specified system will probably have more than that.
5. Any assumptions made, with justification and explanation.

Additional Phase 1 Information:

1. The EER must capture the functionalities of the application system whenever applicable. (e.g., total participation, superclasses/subclasses, weak entities)
2. The design of your system must include all functionalities as indicated by the application description in this document. You are allowed to make up additional assumptions as long as they do not conflict with the specified constraints and requirements. You must list all your assumptions; otherwise, your EER diagram will lose points since the TA will not understand certain parts of your design based on your assumptions. Also, information extraneous to the required functionality may count against you
3. The logical constraints that you must list cannot be ones that can be specified using ER notation, nor can they be related directly to data types or values
 - a. (i.e. “password must have at least 8 characters” is not a logical constraint)

Phase 2 – Submit to Canvas (one person submits for the group)

The deliverables include (in a single PDF file):

1. A cover page, same as Phase 1.
2. Copy of the EER diagram (either your phase 1 diagram, with any modifications, or the provided solution)
 - a. Highly encourage to use the provided solution
3. Relational Schema Diagram - identify primary and foreign keys and show referential integrity using arrows.
4. MySQL CREATE TABLE statements, including domain constraints, integrity constraints, primary keys, foreign keys, & appropriate referential triggered action clause.

Phase 3 – Submit to Canvas (one person submits for the group)

More details about phase 3 will be given later during the semester.

Phase 4 – Submit to Canvas (one person submits for the group)

More details about phase 4 will be given later during the semester.

On Demo Day

More details about demos will be discussed later during the semester. All team members must be present and on time. Missing/late team members will receive a -10 points penalty.

Grading

(See Canvas Syllabus)

Project

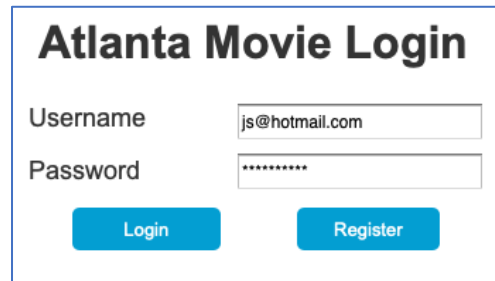
In this project, you and your teammates will design a movie system with the following requirements using relational database concepts.

General Notes

1. User can be a
 - Customer
 - Employee
 - Both
 - Neither
2. Employee must be either a(n):
 - Admin
 - Manager
3. Admins are special employees and their accounts are pre-populated in the database (no need to handle admin registration). They work for the entire system rather than any specific entity in the system
4. Table columns are NOT sortable unless specified otherwise
5. Dropdown lists must be populated using existing data in the database unless specified otherwise. Additionally, add the “ALL option” to the all dropdown list.
6. Regarding filtering fields, they are not all required unless specified otherwise

General Screens

Screen 1: Login



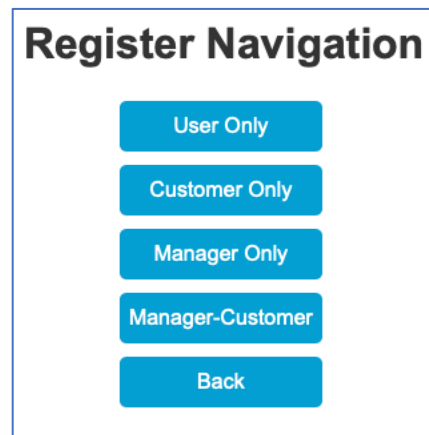
The screenshot shows a login interface titled "Atlanta Movie Login". It features two input fields: "Username" with the text "js@hotmail.com" and "Password" with masked characters "*****". Below the fields are two blue buttons: "Login" and "Register".

Screen 1 Login

Notes:

1. This is a login page that all users use to log into the app.
2. Upon successful login, the user should be taken to the appropriate functionality screen (7-12).
3. Upon invalid login, the app should notify the user, and the user should be allowed to retry.

Screen 2: Register Navigation



The screenshot shows a registration navigation screen titled "Register Navigation". It contains five blue buttons stacked vertically: "User Only", "Customer Only", "Manager Only", "Manager-Customer", and "Back".

Screen 2 Register Navigation

Notes:

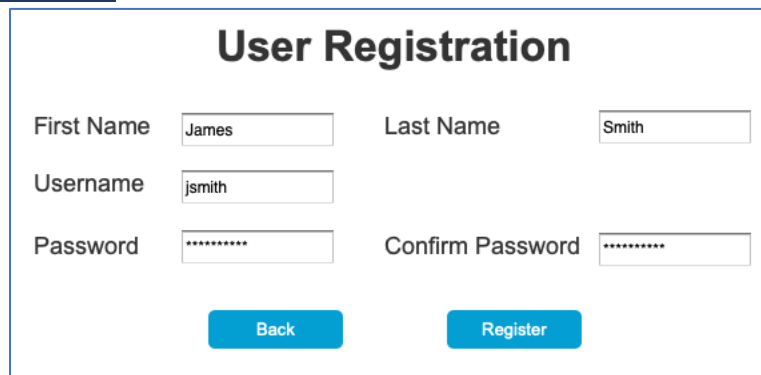
1. This allows the user to navigate to the registration screen (3-6) of their choosing.

Screens (3-6): Registration Screens

The following notes are common to all registration screens:

1. “Usernames” are unique among all users.
2. “Password” must have at least 8 characters.
3. “Password” and “confirm password” should match
4. Do not store the password as plain text in the database. Store the hashed password.

Screen 3: User Registration



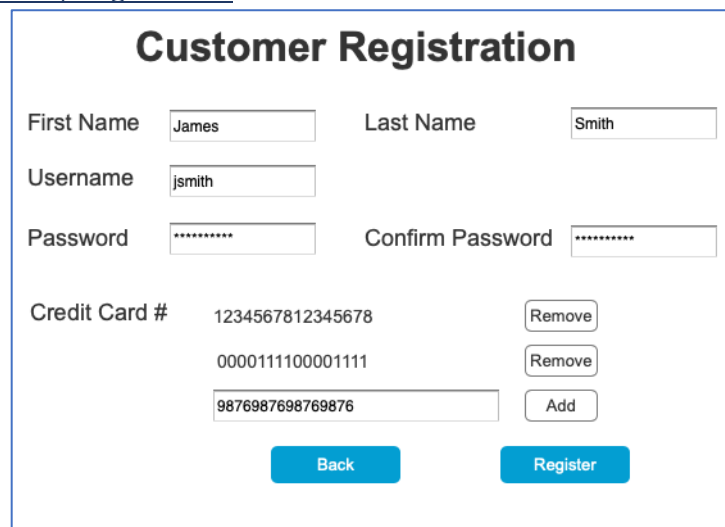
The form is titled "User Registration" in bold black text at the top center. It contains four input fields: "First Name" with the value "James", "Last Name" with the value "Smith", "Username" with the value "jsmith", and "Password" with masked characters "*****". There is also a "Confirm Password" field with masked characters "*****". At the bottom, there are two blue buttons: "Back" and "Register".

Screen 3 User Registration

Notes:

1. All fields required.

Screen 4: Customer-Only Registration



The form is titled "Customer Registration" in bold black text at the top center. It contains the same four input fields as Screen 3: "First Name" (James), "Last Name" (Smith), "Username" (jsmith), and "Password" (*****). There is also a "Confirm Password" field (*****). Below these, there are three credit card number inputs: "1234567812345678", "0000111100001111", and "9876987698769876". Each input has a corresponding "Remove" button to its right. Below the third input is an "Add" button. At the bottom, there are two blue buttons: "Back" and "Register".

Screen 4 Customer-Only Registration

Notes:

1. All fields are required
2. "Credit card #" are unique for all users
3. A customer must enter at least 1 credit card and at most 5 credit cards

Screen 5: Manager-Only Registration

Manager-Only Registration

First Name	<input type="text" value="Clara"/>	Last Name	<input type="text" value="Wilson"/>
Username	<input type="text" value="cwilson"/>	Company	<input type="text" value="AMC"/>
Password	<input type="password" value="*****"/>	Confirm Password	<input type="password" value="*****"/>
Street Address	<input type="text" value="100 East Main Street"/>		
City	<input type="text" value="Seattle"/>	State	<input type="text" value="WA"/>
Zipcode	<input type="text" value="12345"/>		

Screen 5 Manager-Only Registration

Notes:

1. All fields are required
2. "Address" consists of street address, city, state, and zip code.
3. "Address" is unique among all managers
4. "State" is a dropdown list that can be hardcoded (2-letter abbreviation for each states)
5. "Company" is a dropdown list
6. Manager must work for a specific company

Screen 6: Manager-Customer Registration

Manager-Customer Registration

First Name	<input type="text" value="James"/>	Last Name	<input type="text" value="Smith"/>
Username	<input type="text" value="jsmith"/>	Company	<input type="text" value="AMC"/>
Password	<input type="password" value="*****"/>	Confirm Password	<input type="password" value="*****"/>
Street Address	<input type="text" value="100 East Main Street"/>		
City	<input type="text" value="Seattle"/>	State	<input type="text" value="WA"/>
Zipcode	<input type="text" value="12345"/>		
Credit Card #	<input type="text" value="1234567812345678"/>	<input type="button" value="Remove"/>	
	<input type="text" value="0000111100001111"/>	<input type="button" value="Remove"/>	
	<input type="text" value="9876987698769876"/>	<input type="button" value="Add"/>	

Screen 6 Manager-Customer Registration

Notes:

1. See screen 5 & 6

Screen 7-12: Functionality Screens

<div><h3>Admin-Only Functionality</h3><div><div>Manage User</div><div>Explore Theater</div><div>Manage Company</div><div>Visit History</div><div>Create Movie</div><div>Back</div></div><p><i>Screen 7 Admin-Only Functionality</i></p></div>	<div><h3>Admin-Customer Functionality</h3><div><div>Manage User</div><div>Explore Movie</div><div>Manage Company</div><div>Explore Theater</div><div>Create Movie</div><div>View History</div><div>Visit History</div><div>Back</div></div><p><i>Screen 8 Admin-Customer Functionality</i></p></div>
<div><h3>Manager-Only Functionality</h3><div><div>Theater Overview</div><div>Explore Theater</div><div>Schedule Movie</div><div>Visit History</div><div>Back</div></div><p><i>Screen 9 Manager-Only Functionality</i></p></div>	<div><h3>Manager-Customer Functionality</h3><div><div>Theater Overview</div><div>Explore Movie</div><div>Schedule Movie</div><div>Explore Theater</div><div>View History</div><div>Visit History</div><div>Back</div></div><p><i>Screen 10 Manager-Customer Registration</i></p></div>
<div><h3>Customer Functionality</h3><div><div>Explore Movie</div><div>View History</div><div>Explore Theater</div><div>Visit History</div><div>Back</div></div><p><i>Screen 11 Customer Functionality</i></p></div>	<div><h3>User Functionality</h3><div><div>Explore Theater</div><div>Visit History</div><div>Back</div></div><p><i>Screen 12 User Functionality</i></p></div>

Notes:

1. Only an Admin can manage user, manage company, and create movie; other users cannot
2. As a customer, an Admin (in addition to exclusive activities) can also explore movie and explore theater.
3. Manager can overview the theater they manage as well as add movie to the theater they manage.
4. As a customer, a Manager (in addition to exclusive activities) can also explore movie and explore theater

5. A non-Manager and non-Admin Customer can only explore movies and theater
6. Any user (Admin, Manager, Customer, etc.) can explore theaters.

Admin

Screen 13: Admin Manage User

Manage User

Username

Status -- ALL --

Filter

Approve

Decline

Username	Credit Card Count	User Type	Status
<input checked="" type="radio"/> cwilson	3	Customer	Pending
<input type="radio"/> jasonlee	0	User	Declined
<input type="radio"/> jjohnson	0	Manager	Approved
<input type="radio"/> michaelsmith	3	Manager-Customer	Approved

Back

Screen 13 Admin Manage User

Notes:

1. All columns in this table are sortable columns
2. Admin can approve “pending” or “declined” the selected users
3. Admin can decline “pending” the selected users
4. Admin cannot decline “approved” the selected users
5. “Status” is a dropdown list with contents (“All”, “Pending”, “Declined”, “Approved”). You may hardcode this field.

Screen 14: Admin Manage Company

Manage Company

Name

City Covered

Theaters

Employees

Filter

Create Theater

Detail

Name	#CityCovered	#Theaters	#Employee
<input checked="" type="radio"/> AMC	2	2	3
<input type="radio"/> Regal	1	2	5
<input type="radio"/> Landmark	1	1	2

Back

Screen 14 Admin Manage Company

Notes:

1. All columns in this table are sortable columns
2. “#CityCovered” is the total number of UNIQUE cities in which the company has theaters.
(Unique city: unique city-state combination)
3. “#Theater” is the number of different theaters owned by the company
4. “#Employee” is the number of managers working for the company
5. “Name” is a dropdown list
6. All filtered values are inclusive
7. Admin can create theater or view company details of the selected company

Screen 15: Admin Create Theater

The screenshot shows a web form titled "Create Theater". It contains several input fields and dropdown menus. The "Name" field is labeled "Name" and contains the text "New Theater". The "Company" field is a dropdown menu labeled "Company" with "AMC" selected. The "Street Address" field is labeled "Street Address" and contains "100 East Main Street". The "City" field is labeled "City" and contains "Seattle". The "State" field is a dropdown menu labeled "State" with "WA" selected. The "Zipcode" field is labeled "Zipcode" and contains "12345". The "Capacity" field is labeled "Capacity" and contains the number "5". The "Manager" field is a dropdown menu labeled "Manager" with "Clara Wilson" selected. At the bottom of the form are two blue buttons: "Back" and "Create".

Screen 15 Admin Create Theater

Notes:

1. All fields are required
2. Theater must belong to a company
3. "Address" consists of street address, city, state, and zip code
4. "Name" is unique for theaters within a company
5. "Company" is a dropdown list
6. "State" is a dropdown list that can be hardcoded (2-letter abbreviation for each states)
7. "Capacity" of a theater is the maximum number of movies it can play for the same date
8. Theater must be managed by an existing and non-assigned manager (i.e. manager who does not manage other theaters). Dropdown list should only show eligible managers.
9. Manager can at most manage one theater within their company

Screen 16: Admin Company Detail

Company Detail

Name **Landmark**

Employees **Clara Wilson, James Smith**

Theaters

Name	Manager	City	State	Capacity
The Only Theater	Clara Wilson	Atlanta	GA	5

Back

XXX

Screen 16 Admin Company Detail


Notes:

1. "Employees" lists all the managers who work for the company
2. "Theaters" lists the theater details for all theaters owned by the company

Screen 17: Admin Create Movie

Create Movie

Name Duration

Release Date 

Back **Create**

Screen 17 Admin Create Movie

Notes:

1. All fields are required
2. "Duration" entered is in minutes
3. The combination of "Name" and "Release Date" is unique for all movies


Manager

Screen 18: Manager Theater Overview


Theater Overview


Movie Name (Include)

Movie Duration --


Movie Release Date 

--



Movie Play Date 

--



☒ Only Include Not Played Movies

Filter

Movie Name	Duration	Release Date	Play Date
The One	120	2019/01/09	2019/02/01
The One	120	2019/01/09	2019/02/02
Only One	145	2019/03/10	2019/04/15
One	200	2019/08/08	

Back

Screen 18 Manager Theater Overview

Notes:

1. Manager can see and search the overview of the theater they manage
2. "Date" is inclusive
3. "Duration" is inclusive
4. "Only Include Not Played Movies"
 - a. If selects, display all of the movies that have not yet been played (i.e. do not have a "Play Date") at that theater scheduled yet
 - b. If not selected, display all movies (played nor not played yet)

Screen 19: Manager Schedule Movie

Schedule Movie

NameOne Movie

Release Date2018/12/12

Play Date2019/01/04

Back

Add

Screen 19 Manager Schedule Movie

Notes:

1. All fields are required
2. The combination of “Name” and “Release Date” is unique for all movies and it must have been created first
3. “Name” is a dropdown list
4. Cannot schedule a movie before its release date (i.e. “release date” must be before “play date”)

Customer

Screen 20: Customer Explore Movie

Explore Movie

Movie Name-- ALL --

Company NameAMC

CitySeattle

StateWA

Movie Play Date

--

Filter

Movie	Theater	Address	Company	Play Date
<input type="radio"/> A Movie	1st Theater	163 1st Street, Seattle, WA 98005	AMC	2019/01/01
<input type="radio"/> 2 Movies	2nd Theater	1505 2nd Street, Seattle, WA 98005	AMC	2019/01/01
<input type="radio"/> 2 Movies	2nd Theater	1505 2nd Street, Seattle, WA 98005	AMC	2019/01/02

Back

Card Number0000111100001111

View

Screen 20 Customer Explore Movie

Notes:

1. "Card Number" is a dropdown list
2. "Company Name" is a dropdown list
3. "Movie Name" is a dropdown list
4. Customer must select one of their card numbers in order to view a movie
5. Customer can at most watch 3 movies per day
6. "Movie Play Date" is inclusive

Screen 21: Customer View History

View History				
Movie	Theater	Company	Card#	View Date
A Movie	1st Theater	AMC	0000111100001111	2019/01/01
Movies	A Theater	A Company	1111222211112222	2019/01/01

Back

Screen 21 Customer View History

Notes:

1. Customer are able to see all the movies they have viewed

User

Screen 22: User Explore Theater

Explore Theater

Theater Name -- ALL --

Company Name AMC

City Seattle


State WA

Filter

Theater	Address	Company
<input type="radio"/> 1st Theater	163 1st Street, Seattle, WA 98005	AMC
<input type="radio"/> 2nd Theater	1505 2nd Street, Seattle, WA 98005	AMC

Back

Visit Date



Log Visit

Screen 22 User Explore Theater



Notes:

1. User must enter a “visit date” before logging visit to the selected theater.
2. “Theater Name” is a dropdown list
3. “Company Name” is a dropdown list
4. “State” is a dropdown list that can be hardcoded (2-letter abbreviation)
5. Users can visit any theater as many times as they want every day

- auto grader 里面没有要求输入company name

Screen 23: User Visit History

Visit History

Company Name AMC Visit Date  -- 

Filter

Theater	Address	Company	Visit Date
1st Theater	163 1st Street, Seattle, WA 98005	AMC	2019/01/01
2nd Theater	1505 2nd Street, Seattle, WA 98005	AMC	2019/01/02

Back

Screen 23 User Visit History

Notes:

1. Users can see their visit histories based on the filtered information
2. “Company Name” is a dropdown list
3. “Visit Date” should be inclusive