Team: Tyler Scott Chris Rhoda

Jackson Markowski

Sean Moss

Title: Media Management System

Project Summary:

A media management system that will allow users to create an account, login, and manage different rentals or purchases of media. Media may include movies, books, music albums, etc. Administrators will be able to manage the inventory of media and the system will provide searching functionality to the user. A graphical user interface will be implemented to display the media management system to users.

Project Requirements:

There are no business requirements.

User Requirements

| ID | Requirement | Topic Area | User | Priority |
|-------|---|-------------------|------|----------|
| US-01 | As a user, I want to be able to create an account. | Authentication | User | High |
| US-02 | As a user, I want to be able to login into my account. | Authentication | User | High |
| US-03 | As a user, I want to be able to logout of my account. | Authentication | User | High |
| US-04 | As a user, I want to be able to rent media. | Rentals/Purchases | User | Medium |
| US-05 | As a user, I want to be able to return my rented media before the deadline. | Rentals/Purchases | User | Medium |
| US-06 | As a user, I want to be able to purchase media. | Rentals/Purchases | User | Medium |
| US-07 | As a user, I want to be able to view my personal inventory. | Rentals/Purchases | User | Medium |

| US-08 | As a user I want to be able to search the system inventory. | Rentals/Purchases | User | Medium |
|-------|--|-------------------------|-------|--------|
| US-09 | As an admin, I want to be able to add media to the system inventory. | Inventory Management | Admin | High |
| US-10 | As an admin, I want to be able to remove media from the system inventory. | Inventory Management | Admin | High |
| US-11 | As an admin, I want to be able to edit media in the system inventory. | Inventory Management | Admin | Medium |
| US-12 | As a user, I want to add myself to a waitlist when media is not available to rent. | Rentals/Purchases | User | Low |
| US-13 | As a user, I want to review/rate media. | Rentals/Purchases | User | Low |
| US-14 | As a user, I want to be able to sell back purchased media. | Rentals/Purchases | User | Medium |
| US-15 | As a user, I want to add money to my credit balance, to be used for renting or purchasing media. | Rentals/Purchases | User | Medium |

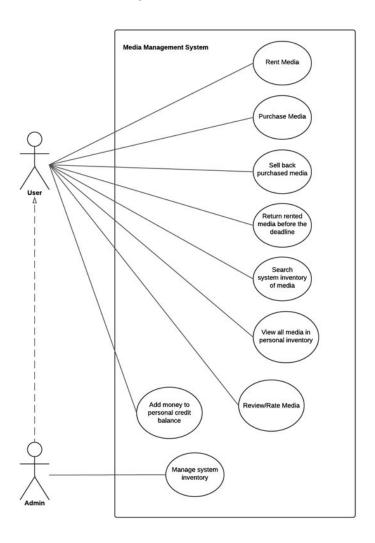
Functional Requirements

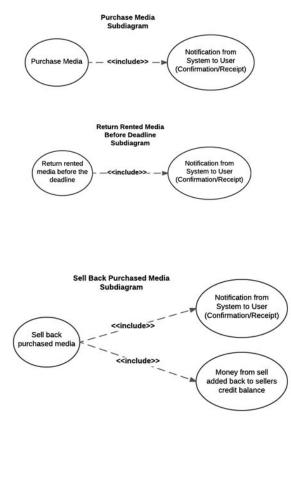
| ID | Requirement | Topic Area | Priority |
|-------|---|-------------------------|----------|
| FR-01 | When there is a waitlist for an unavailable media item, and the item is returned and becomes available, the system will automatically assign the item to the first person on the waitlist. | Inventory Management | Medium |
| FR-02 | When the user rents, purchases, or returns media, the system will notify them through a digital receipt/confirmation. | Notifications | Low |
| FR-03 | When media is rented by a user and the return deadline of that media occurs, if the user has not already returned the media, the system will automatically take the media out of the user's personal inventory. | Rentals/Purchases | Medium |

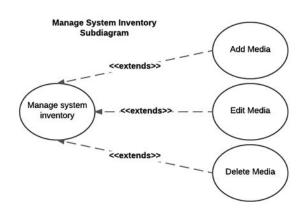
Non-Functional Requirements

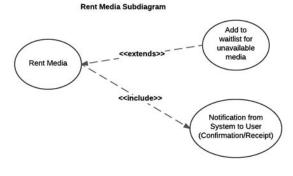
| ID | Requirement | Topic Area | Priority |
|--------|--|-------------|----------|
| NFR-01 | When querying the database for user credentials, user rentals/purchases, or inventory management tasks, data should be retrieved in under 5 seconds. | Performance | High |
| NFR-02 | The system should always have accurate records of data, in particular with respect to renting media, so that users know exactly when media needs to be returned. | Reliability | Medium |

Use Case Diagram:









Use Case Documents:

| Use Case ID: | UC-01 | | | |
|-------------------|--|---|--|--|
| Use Case Name: | Create account | | | |
| Description: | User | can create an account. | | |
| Actors: | User | | | |
| Pre-conditions: | | has an available username. has a password. | | |
| Post-conditions: | User | has an account accessible by ch | nosen username and password. | |
| Frequency of Use: | Once | e per user | | |
| Flow of Events: | | | | |
| | | Actor Action | System Response | |
| | 1 | Click "Create Account" button on login screen. | System asks for user credentials including email, username, and password | |
| | 2 | User inputs email, username and password, then clicks "Create" button | System creates an account for the user. | |
| Variations: | 2. User inputs a username that is already in use. The system responds by telling the user to pick another username.2. User leaves a required field blank. The system responds by telling the user to fill in required fields. | | | |
| Notes and Issues: | None | | | |
| Developer Notes: | None | 3 | | |

| Use Case ID: | UC-02 |
|----------------|----------------------------------|
| Use Case Name: | Login to account |
| Description: | User can login to their account. |
| Actors: | User |

| Pre-conditions: | User already has an account created. | | | |
|-------------------|---|---|--|--|
| Post-conditions: | User is logged into their account and can view main menu. | | | |
| Frequency of Use: | Fred | uently throughout the day by u | isers. | |
| Flow of Events: | | | | |
| | | Actor Action System Response | | |
| | 1 | User inputs username and password. | The system logs in the user, and displays main menu. | |
| | | | | |
| Variations: | resp | • • • • | assword or username. The system nd then asks the user to input their | |
| Notes and Issues: | None | | | |
| Developer Notes: | _ | n screen is first screen display u is displayed. | ed and upon successful login, main | |

| Use Case ID: | UC-03 | | | |
|-------------------|--|--|--|--|
| Use Case Name: | Logout of account | | | |
| Description: | User can logout of their account. | | | |
| Actors: | User | | | |
| Pre-conditions: | User is currently logged in. | | | |
| Post-conditions: | User is logged out of their account. | | | |
| Frequency of Use: | Frequently throughout the day by users. | | | |
| Flow of Events: | | | | |
| | Actor Action System Response | | | |
| | 1 User clicks "Logout" button The system logs the user out. | | | |
| | | | | |
| Variations: | If the user exits the application while logged in, the system will automatically log them out before termination of the application. | | | |
| Notes and Issues: | None | | | |

| Developer Notes: | User clicks "Logout" button, system will switch to the login screen. |
|------------------|--|
|------------------|--|

| | 1 | | | |
|-------------------|--|--|---|--|
| Use Case ID: | UC- | UC-04 | | |
| Use Case Name: | Ren | t Media | | |
| Description: | Use | r can rent media. | | |
| Actors: | Use | r | | |
| Pre-conditions: | Use | | urrently viewing the system inventory | |
| Post-conditions: | | r has access to the media file ess they choose to return it e | e for a certain number of days early). | |
| Frequency of Use: | Fred | quently throughout the day by | / users. | |
| Flow of Events: | | | | |
| | | Actor Action | System Response | |
| | 1 | Select the media to rent | Display rent price and the number of copies available for the media and media information such as title and description. | |
| | 2 | Click "Rent Media" button | System decrements the number of available copies, decrements amount of money for rental from user's account balance, moves media into user inventory. Also, the system sends confirmation to notify user. | |
| | | | | |
| Variations: | User doesn't have enough money. The system responds by informing the user that they do not have enough money. The system inventory is 0. The user is notified that there isn't a media file currently available, and is asked if they want to be put on a waitlist. If they are put on waitlist, they are notified that they have been put on waitlist. | | | |
| Notes and Issues: | Non | e | | |
| Developer Notes: | Non | e | | |

| Use Case ID: | UC-05 | | | |
|-------------------|-------------------------------------|---|--|--|
| Use Case Name: | Return Rented Media Before Deadline | | | |
| Description: | User | can return their rented | media before the return deadline. | |
| Actors: | User | | | |
| Pre-conditions: | User | has rented media curre | ently in their inventory. | |
| Post-conditions: | User | no longer has the med | ia file they rented in their inventory. | |
| Frequency of Use: | Thro | ughout the day by users | s with rented media. | |
| Flow of Events: | | | | |
| | | Actor Action | System Response | |
| | 1 | User selects the rented media file they want to return in personal inventory. | System shows the return deadline and a button for returning the media early. | |
| | 2 | User clicks "Return Rented Media" button. | The system increments number of files available for the media, notifies next user on waitlist (if one exists), and deletes the media item from the user's inventory. Also, the system sends confirmation to notify user. | |
| Variations: | None | | | |
| Notes and Issues: | None | | | |
| Developer Notes: | None | | | |

| Use Case ID: | UC-06 |
|----------------|---|
| Use Case Name: | Purchase Media |
| Description: | User can purchase a media item, keeping the item permanently in personal inventory. |
| Actors: | User |

| Pre-conditions: | User | User is logged in. | | |
|-------------------|---|---|---|--|
| Post-conditions: | The | The media file is in user's personal inventory permanently. | | |
| Frequency of Use: | Freq | uently throughout the day b | by users. | |
| Flow of Events: | | 1 | | |
| | | Actor Action | System Response | |
| | 1 | Select the media item that user wants to buy | System displays the selected media item's relevant information (title, description, etc.), and an option to buy. | |
| | 2 | Select "Buy" media option | The system decrements the appropriate amount of money from user, and includes that media file in the user's personal inventory. Also, the system sends confirmation to notify user. | |
| | | | | |
| Variations: | 2. User doesn't have enough money. The system responds by notifying the user that they do not have enough money to purchase the item. | | | |
| Notes and Issues: | None | | | |
| Developer Notes: | need | There are unlimited copies to buy for an available media. We do not need an inventory count for purchasable media. Purchasable media is separate from rentable media. | | |

| Use Case ID: | UC-07 | | |
|------------------|--|--|--|
| Use Case Name: | View Personal Media Inventory | | |
| Description: | User can view their media within their personal library, that they currently own/rented. | | |
| Actors: | User | | |
| Pre-conditions: | User is logged in. | | |
| Post-conditions: | System is in the same state as before use-case US-07 (no post-condition). | | |

| Frequency of Use: | Fred | Frequently throughout the day by users. | | |
|-------------------|------|--|---|--|
| Flow of Events: | | | | |
| | | Actor Action | System Response | |
| | 1 | User clicks "Personal Inventory" button | System displays user's personal inventory | |
| Variations: | Non | None | | |
| Notes and Issues: | Non | None | | |
| Developer Notes: | Non | None | | |

| Use Case ID: | UC- | UC-08 | | |
|-------------------|---|--|--|--|
| Use Case Name: | Sea | Search System Inventory | | |
| Description: | Use | User can search personal/system inventory based on the title. | | |
| Actors: | Use | r | | |
| Pre-conditions: | Use | r is logged in. | | |
| Post-conditions: | - | System is in the same state as before use-case US-08 (no post-condition). | | |
| Frequency of Use: | Fred | Frequently throughout the day by users. | | |
| Flow of Events: | | | | |
| | | Actor Action | System Response | |
| | 1 | User types in search criteria in search field on system inventory screen and clicks the "Search" button. | System searches for and displays media that matches search criteria. | |
| Variations: | No media files match criteria in the system. System responds by | | | |
| | notif | notifying the user that no matches were found. | | |
| Notes and Issues: | Non | None | | |
| Developer Notes: | Non | е | | |

| Use Case ID: | UC- | UC-09 | | |
|-------------------|---|--|---|--|
| Use Case Name: | Add | Add Media to System Inventory | | |
| Description: | Adm | Admin can add new media to the system inventory. | | |
| Actors: | Adm | in | | |
| Pre-conditions: | | user of the application has adm ed in. The user currently has the | • | |
| Post-conditions: | The | system inventory contains the r | new media. | |
| Frequency of Use: | Pote | entially multiple times per day by | admins. | |
| Flow of Events: | | T | | |
| | | Actor Action | System Response | |
| | 1 | Admin selects the control for adding media to the inventory. | The system opens the window for providing information on the new media to add. | |
| | 2 | Admin enters information about the media. | The information window updates the fields to indicate the changes. | |
| | 3 | Admin selects the control for confirming media addition. | The system validates the information provided in the fields. If the information is valid, the media is added to the library system, and the new media window is closed. | |
| | | | | |
| Variations: | Some information provided for the new media is invalid, and the window reports this information and allows the admin to continue to edit the information. There already exists media with the same details in the system, the system will report this issue and not add the media. The admin cancels adding the media, and it is not added. | | | |
| Notes and Issues: | Non | e | | |
| Developer Notes: | Non | e | | |

| Use Case ID: | UC- | UC-10 | | |
|-------------------|---|--|--|--|
| Use Case Name: | Rem | Remove Media from System Inventory | | |
| Description: | Adm | in can remove existing media to | the system inventory. | |
| Actors: | Adm | in | | |
| Pre-conditions: | | user of the application has admed in. The user currently has the | - | |
| Post-conditions: | | media selected by the admin fo system. | r deletion has been removed from | |
| Frequency of Use: | Pote | ntially multiple times per day | | |
| Flow of Events: | | | | |
| | | Actor Action | System Response | |
| | 1 | Admin selects the control for removing media from the inventory. | The system opens the window that provides a searchable list of media to remove. | |
| | 2 | Admin selects the media from the list to remove. | The list indicates in some fashion that the media has been selected for removal. | |
| | 3 | Admin selects the control for confirming media removal. | The system checks if the media marked for removal is currently checked out, then removes the media from the inventory. | |
| Variations: | The media marked for removal is currently checked out by users. In this case, the admin gets a warning that the media is checked out. From here, the admin can cancel or confirm the removal. The admin cancels the removal, and the media remains in the inventory. | | | |
| Notes and Issues: | None | 9 | | |
| Developer Notes: | None | e | | |

| Use Case ID: | UC- | UC-11 | | |
|-------------------|---|---|--|--|
| Use Case Name: | Edit | Edit Media in System Inventory | | |
| Description: | Adm | Admin can edit the details of existing media in the system inventory. | | |
| Actors: | Adm | in | | |
| Pre-conditions: | I | user of the application has admed in. The user currently has the | - | |
| Post-conditions: | | media edited by the admin has ntory. | its details updated in the | |
| Frequency of Use: | Pote | ntially multiple times per day by | admin. | |
| Flow of Events: | | | | |
| | | Actor Action | System Response | |
| | 1 | Admin selects the control for editing media information in the inventory. | The system opens the window that provides a list of media currently in the system. | |
| | 2 | Admin selects the media to edit from the list of media. | The system brings up an info window similar to that of adding media, but the info fields are already populated with the media information. | |
| | 3 | Admin enters information about the media. | The information window updates the fields to indicate the changes. | |
| | 4 | Admin selects the control for confirming media addition. | The system validates the information provided in the fields. If the information is valid, the media is updated. | |
| Variations: | Some information provided for the new media is invalid, and the window reports this information and allows the admin to continue to edit the information. There already exists media with the same details in the system, the system will report this issue and not add the media. The admin cancels adding the media, and it is not added. | | | |

| Notes and issues: | None |
|-------------------|------|
| Developer Notes: | None |

| Use Case ID: | UC-1 | UC-12 | | |
|-------------------|---|--|---|--|
| Use Case Name: | Add t | Add to Waitlist for Unavailable Rentable Media | | |
| Description: | | User is able to add themselves to a waitlist for a rentable media item when it is unavailable | | |
| Actors: | User | | | |
| Pre-conditions: | User | User is logged in. User is viewing information page for a specific rentable media. There are 0 copies available for the specific rentable media. | | |
| Post-conditions: | User | User is put on a waitlist. | | |
| Frequency of Use: | Frequently throughout the day by users. | | | |
| Flow of Events: | | | | |
| | | Actor Action | System Response | |
| | 1 | User selects "Rent Media" option on a rentable media item. | System informs user that there are no copies currently available, and asks the user if they want to be put on a waitlist. | |
| | 2 | User selects the option to be put on the waitlist. | System adds user to waitlist queue, and notifies user that they have been added to the queue. | |
| Variations: | 2. User decides not to be put on weitlist | | | |
| Notes and Issues: | None | User decides not to be put on waitlist. | | |
| | | | | |
| Developer Notes: | None | | | |

| Use Case ID: | UC- | UC-13 | | | |
|-------------------|------|--|--|--|--|
| Use Case Name: | Revi | Review/Rate Media | | | |
| Description: | User | is able to write a review and ra | te a media item. | | |
| Actors: | User | | | | |
| Pre-conditions: | User | is logged in and has selected a | a media item | | |
| Post-conditions: | | ew/Rating is added to the collectia item. | ction of reviews for the specific | | |
| Frequency of Use: | Freq | Frequently throughout the day by users. | | | |
| Flow of Events: | | | | | |
| | | Actor Action System Response | | | |
| | 1 | User selects "add review" in media file selected view | System displays create review screen | | |
| | 2 | User enters a rating from 1 to 5 and enters a text review then hits submit | System adds the review to the media file | | |
| | | | | | |
| Variations: | | User attempts to "add review" on item they already reviewed. System notifies user and doesn't allow another review to be added | | | |
| | | 2. User leaves either the rating or review text blank. System notifies users of missing information and allows them to re-enter review/rating. | | | |
| Notes and Issues: | None | None | | | |
| Developer Notes: | None | 9 | | | |

| Use Case ID: | UC-14 |
|-----------------|---|
| Use Case Name: | Sell Back Purchases |
| Description: | User is able to sell back a media item that they have previously purchased. |
| Actors: | User |
| Pre-conditions: | User has purchased media currently in their inventory. |

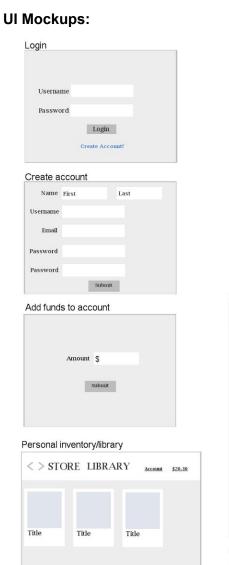
| Post-conditions: | User no longer has the media file they purchased in their inventory. | | | |
|-------------------|--|--|---|--|
| Frequency of Use: | Frequently throughout the day by users. | | | |
| Flow of Events: | | | | |
| | | Actor Action System Response | | |
| | 1 | User selects the purchased media file they want to sell in personal inventory. | System shows the sell price and a button for selling the media. | |
| | 2 | User clicks "Sell Media" button. | The system deletes the media item from the user's inventory and adds the sell price amount to the user's account. Also, the system sends confirmation to notify user. | |
| | | | | |
| Variations: | 2. User decides not to sell media and cancels out of the action. | | | |
| Notes and Issues: | None | | | |
| Developer Notes: | None | | | |

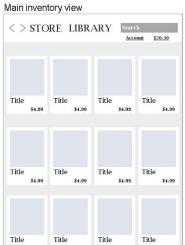
| Use Case ID: | UC-15 | | |
|-------------------|--|-----------------|--|
| Use Case Name: | Add Funds to Credit Balance | | |
| Description: | User is able to add money to credit balance. This will allow them to continue buying or renting media. | | |
| Actors: | User | | |
| Pre-conditions: | User is logged into their account. | | |
| Post-conditions: | User's credit balance has the updated amount of money, equal to the previous amount plus the added amount. | | |
| Frequency of Use: | Potentially a couple times a week by users. | | |
| Flow of Events: | | | |
| | Actor Action | System Response | |

| | 1 | User presses button to add funds to user account. | System opens credit balance screen and prompts for amount to be added. |
|-------------------|--|--|---|
| | 2 | User enters amount to be added and clicks the "Submit" button. | The system prompts the user with a confirmation window. |
| | 3 | User presses "Confirm" button on the confirmation window. | System closes the confirmation window, user account is updated with the new amount of user funds. |
| | | | |
| Variations: | 2. Or 3. At any time, the user cancels the funds transfer. The user's funds are not updated. | | |
| | 2. User enters a bogus amount to be added (negative, contains characters, etc.). The system notifies the user of an incorrect amount and prompts the user for an amount again. | | |
| Notes and Issues: | None | | |
| Developer Notes: | None | | |

Data Storage:

We are planning on using a relational database to store our data. This can be achieved through Hibernate. Since we are planning on using an MVC architecture, the model (M) of MVC will contain our database and relationships (foreign keys). Also, since Hibernate allows us to use Java classes in place of database tables, the class diagram can be used to reference attributes/entities that will exist in our relational database.



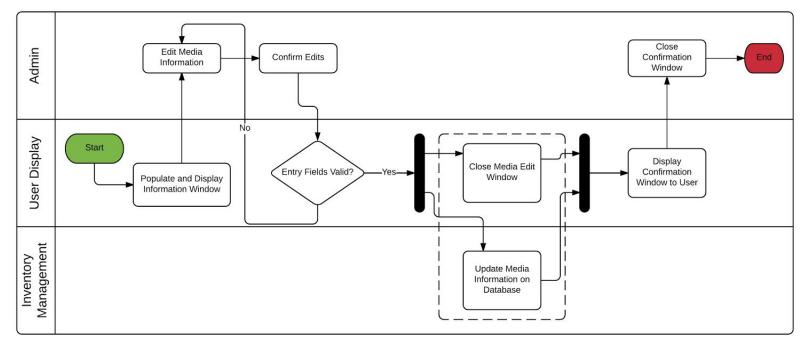


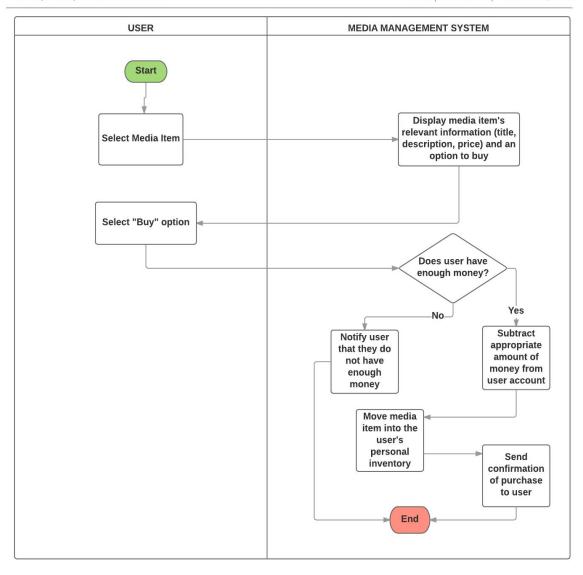




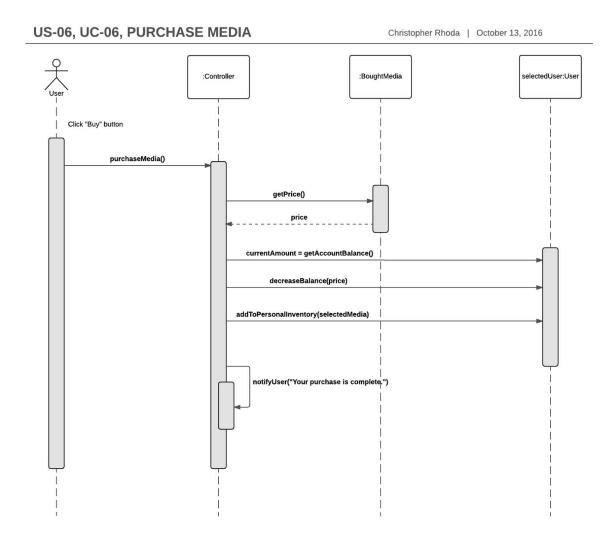
UC-11: Admin Edit Media in System Inventory

Sean Moss

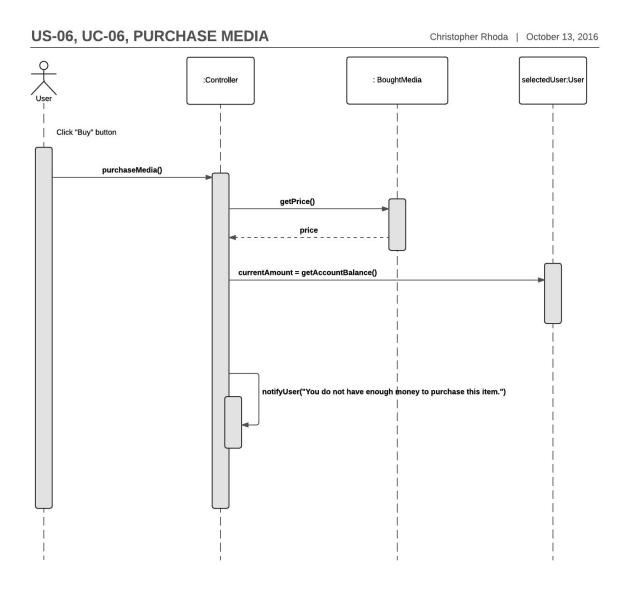




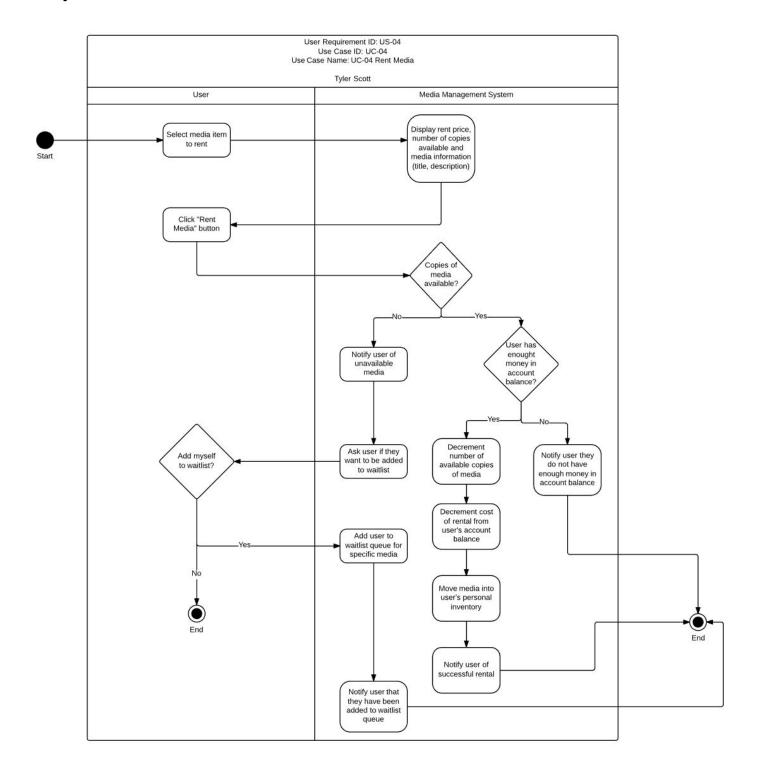
This sequence diagram is specific to the case where the user has enough money to purchase the media item (currentAmount >= price).



This sequence diagram is specific to the case where the user doesn't have enough money in their account to cover the purchase of the media item (currentAmount < price).

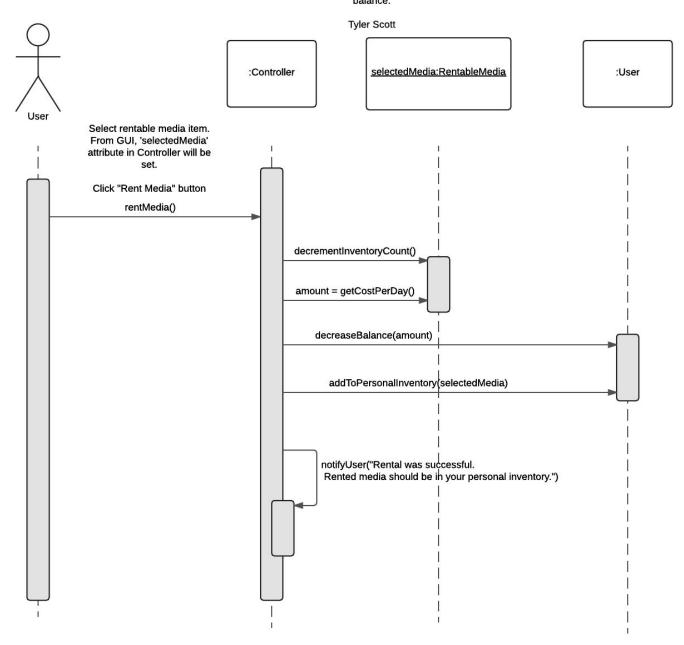


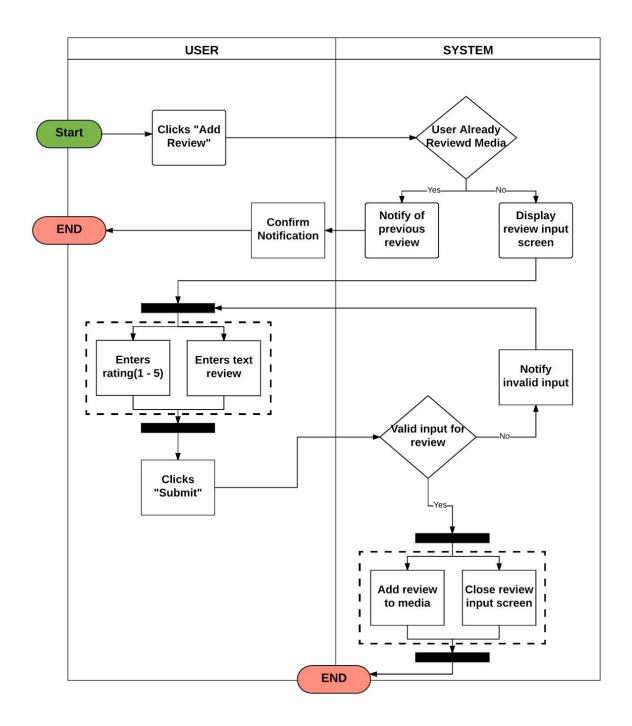
Tyler Scott



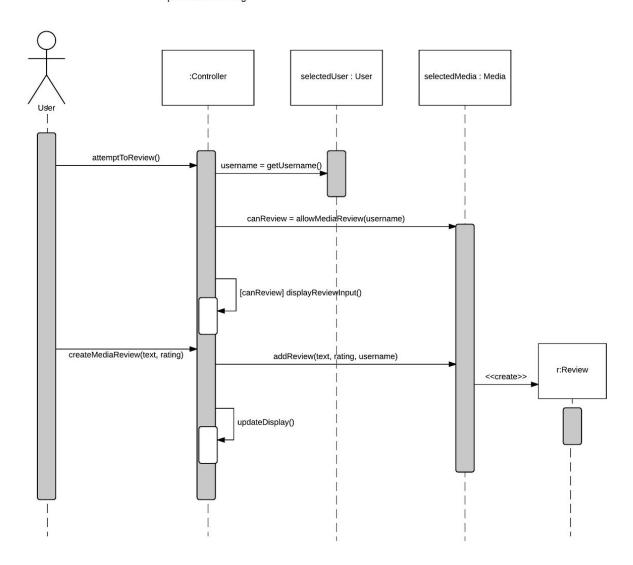
User Requirement ID: US-04 Use Case ID: UC-04 Use Case Name: UC-04 Rent Media

This sequence diagram is describing renting media, where there are copies of the media available and the user has enough money in their account balance.





User adding a review/rating to a media item they have not reviewed before. Prior to diagram the user has already selected a media item they plan on reviewing



Class Diagram:

