

‘Ceol’ System Analysis

CA228

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Project Overview

The purpose of this project was to modernise 'Ceol' and its system of operations. Their old system is outdated and should they continue down this route then they will be run out of business in a short period of time.

The system described in this project will allow 'Ceol' to take a step into the modern era of music retail: the digital revolution. The system built here allows customers to access 'Ceol' with ease, whether it be in-store at a kiosk or at home on their own devices.

This, along with the added features of song downloads, a new search system and the ability to sample music will help retain current customers and improve their experience, while also enticing new customers from the company's competitors.

The most important new feature, in my opinion, is the implementation of a subscription service that allows users to download an unlimited amount of music from the website. This promotes customer loyalty and will likely both retain these customers and attract new ones, as the accessibility and ease of use of a subscription service that provides customers with as much music as they want, without the need for them to worry about renewing each month is extremely appealing to consumers nowadays.

The system itself is quite simple. It provides facilities to create and manage a unique account that is registered to each user, along with features such as searching for songs/albums/artists, adding multiple items to a basket before checkout and the ability to purchase and redeem gift cards to be used on the website.

My consensus on the system is that it is a very good foundation to build from for 'Ceol'. The features in this system are simple, but are also fundamental for a music retailer to succeed in today's climate of streaming and illegal downloads.

Although the system is an excellent building block, I feel that it will need constant improvement with new features if 'Ceol' wish to compete with other companies in a fiercely competitive market.

System Use Case Descriptions

Use Case 1

Create an Account:

Every user must have a registered account to be able to purchase songs and use the website features. Creating an account allows the user to tie their payment details to the site, allowing for easy purchases, along with storing all past purchases, should songs need to be redownloaded. The objective of this use case is for the customer to create this account.

The customer chooses the 'Create Account' option on the website, inputs the required information and, if the information provided is valid, will be notified that an account has been created for that user. If the user has entered invalid or insufficient information, the system will notify the user of this and request more information or that the user edit the data.

Use Case 2

Manage Account:

The ability to manage their account allows the user to add and edit personal data like payment information and personal details. Users can also delete the account if they wish. The objective of this use case is for the user to have the ability to access their data on the site and edit this information, should they wish.

The user chooses the 'Manage Account' option, then adds/edits the data as they choose. Once the request to save the data is put through, the system checks it for validity and if it passes the check, the user is notified that the data has been modified successfully. If the user has entered invalid details, then the system notifies the user that it is incorrect and requests that the user review the data and supply valid information.

Use Case 3

Search for Music in Digital Archive:

The search system allows users to find particular songs that they wish to sample or download by using certain keywords. This prevents users having to parse through unrelated content. The objective of this use case is to allow the user to use a search function on the 'Ceol' site.

The customer selects the search option, then inputs the search terms (artist name, album, track name etc.). The system uses these parameters to locate items in the archive. Results are shown in a list form once the search is complete. The system will look to find the closest match to the user's query if they misspell or simply if the item is not in the digital archive.

Use Case 4

Download Individual Song:

Users of the system can download songs from the 'Ceol' site. Each download is tied to their personal account that they previously registered. A download history can be accessed should the user need to re-download a song or simply wishes to view their recent downloads. The objective of this use case is to give the users the ability to download individual songs from the website onto their local system.

Once the user locates a song they wish to download, they can simply select the download symbol beside the song name. If the user has registered payment details previously, then the system will display a message, prompting the user to confirm the purchase. If no card details are tied to the account, the customer is brought to a payment screen where they are given options by the system for methods of payment (card, Paypal, gift card etc). Once this is complete, the system immediately initiates the download and places the download in the user's 'download queue' (a queue is enabled in the case of multiple downloads). The user also has the ability to pause or cancel the download. Requesting this causes the system to cease sending packets of data to the user.

Use Case 5

Adding Multiple Items to Basket:

This use case allows users to purchase multiple items at the same time. This can be done by a system-implemented basket method, which allows customers to group their items together into one final, larger purchase.

To initiate this process, the user selects the 'Add to Cart' option when they have located a particular item. The system will then allocate the item into the cart, which can be accessed at any time by clicking the related icon in the top corner. Once the user has selected their chosen number of items, they can proceed to the payment page. This then follows the same process as taking payment for an individual song, simply with more items adding to a larger fee.

Use Case 6

Listen to Sample Music:

The objective of this use case is to allow the user to listen to music samples. These samples can be anything from a small clip of a certain song, to a whole song off an album, or just simply a sample of the type of music that 'Ceol' has to offer.

The user manoeuvres to a song that is available for sampling. They then request the system to play the sample music by selecting the 'sample' symbol in the User Interface. The system then delves into its archive to locate the song and then outputs the sample audio to the user.

Use Case 7

Purchase Gift Cards:

The objective of this use case is to allow customers to purchase and also redeem gift cards used to purchase song downloads on the 'Ceol' website. A gift card will allow whomever redeems it to make purchases of song downloads to the value of the amount of money on the card.

To initiate this process, the user navigates to the 'Gift Card' section of the website. Here, the system displays a number of gift card options, which differ in value. The customer selects one of the options and the gift card is added to the user's cart (see use case 5). Once the user attempts to checkout, the system displays a message querying whether they would like to use the gift card for their own account or for someone else.

If the user selects the former option:

The user is taken to the payment screen and the system follows the payment procedure (use case 4). Once this is complete, the system registers payment for the gift card and automatically applies the card value to the user's account. This value is stored in the user's 'wallet' and can be viewed by the user at any time in the 'Manage Account' section of the site.

If the user selects the latter option:

The user is taken to the payment screen by the system as mentioned previously. When completed, the system notifies the user that a code tied to the gift card has been sent to the email that they registered with their account. This code, when redeemed by a user, will update the store wallet of whoever redeems it.

Use Case 8

Redeem a Gift Card:

This use case allows users to redeem gift cards and add credit to their store account.

To initiate this process, the user selects the 'Redeem Gift Card' option in the site menu. The system then displays a message, prompting the user to input a gift card code. Once the user enters the code, the system validates it.

If valid, the system will allocate the amount tied to the gift card to the user's account.

If the user entered an invalid code (e.g. not enough characters, unsupported symbols etc.), the system will display an error message informing the user of the invalid code and will prompt them to enter a valid code.

Alternatively, if the user enters a code that has already been redeemed, the system will display a message informing the user that the code has previously been used.

Use Case 9

Subscription Account:

The objective of this use case is to register the user with an account that allows them to download an unlimited amount of songs, on the basis of a monthly subscription payment. The process can be initiated by both existing customers and new customers looking to register.

New user:

The customer goes through the registration steps as described in use case 1. Once their personal details have been confirmed, the system then displays a page requesting which option the user would like to choose: the subscription option or the free version.

If the user chooses the free option, then the system completes the registration and the user's account is flagged as free.

Should the customer choose the subscription option, the system will then proceed onto a new screen which requests that the customer input their payment information (similar to use case 4). Once this is completed successfully, the system registers the payment information to the user's account and begins the subscription period, beginning from the current date. The user's account is then given premium account features by the system and is flagged as a subscription account.

Existing User:

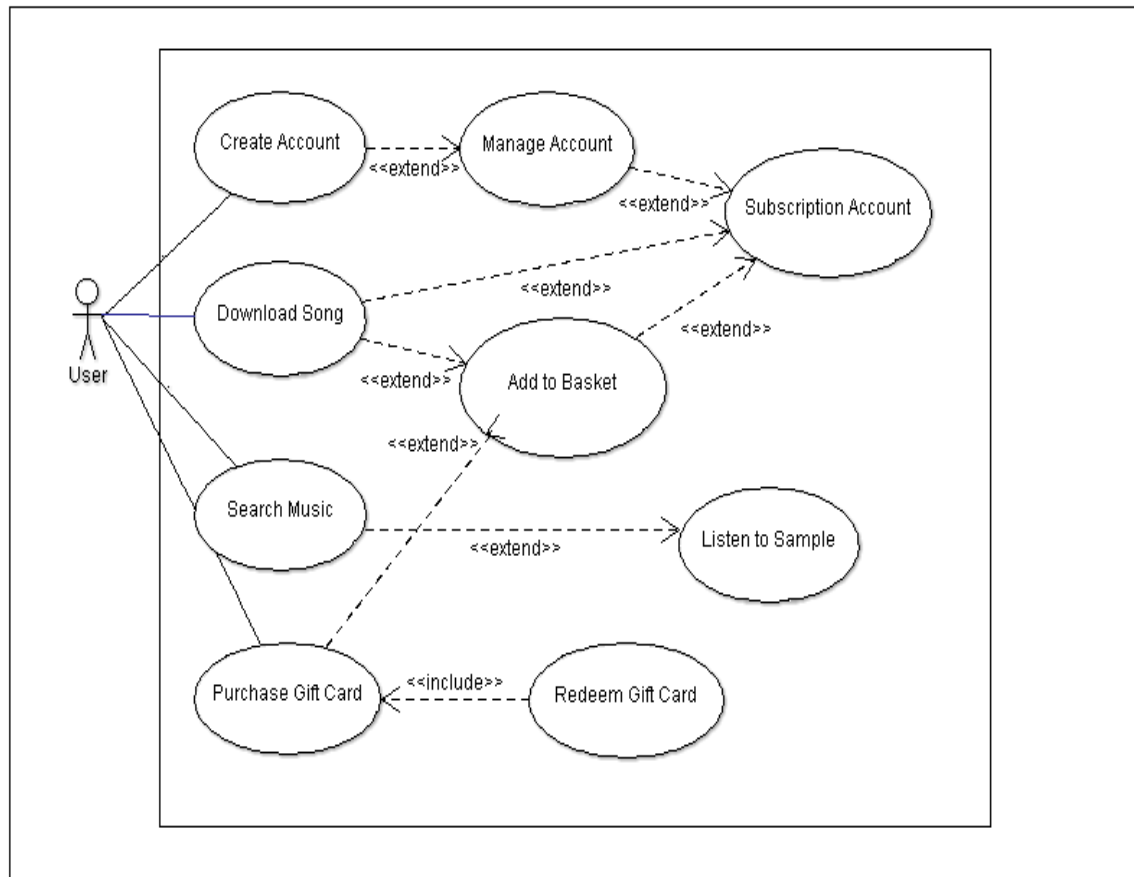
Existing users initiate this process by selecting the 'Manage Account' option. Here, the system displays, along with other information, what type of account the user owns. The customer clicks the 'Update' option and is brought to a page displaying details of the subscription package. If the customer selects this, the system then checks if the user has registered their payment details on the site already. If not, the user is prompted to enter their information. If entered the correctly, the systems follows the process as described previously.

USE CASE 1	Create an Account	
Goal in Context	Create a unique user account	
Scope & Level	Consumers, Worldwide	
Preconditions	Valid email address, valid personal information	
Success End Condition	User account created by consumer, system has been updated with new user	
Failed End Condition	Invalid email address; email address already used, invalid information credentials	
Primary, Secondary Actors	User, System	
Trigger	User account registration request comes in	
DESCRIPTION	Step	Action
	1	Account registration request comes in
	2	User enters required account information, including username
	3	System validates information and username
	4	System stores information & notifies user that account has been created
	5	Confirmation email is sent to email address provided prior
EXTENSIONS	Step	Branching Action
	3a	Invalid or offensive information entered – prompted to re-enter
VARIATIONS		Branching Action
	3b	Invalid email address. Create new email and retry

USE CASE 2	Manage Account	
Goal in Context	Edit & update user account details	
Scope & Level	Ceol Account Holders	
Preconditions	Must have a Ceol account & know login details	
Success End Condition	User has changed or added data on their user account	
Failed End Condition	Unable to change or add information to account	
Primary, Secondary Actors	Registered user, System/kiosk	
Trigger	User logs in and selects 'Manage Account' option	
DESCRIPTION	Step	Action
	1	'Manage Account' is selected
	2	System displays current information about the user's account
	3	User edits/adds information
	4	System validates the information entered
	5	Updated information is stored in user's account
EXTENSIONS	Step	Branching Action
	4a	User enters invalid information
	4b	System highlights invalid information and prompts user to re-enter data
VARIATIONS		Branching Action
	3a	User cancels account update. User brought back to homepage.

USE CASE 3	Search for Music in Digital Archive	
Goal in Context	Locate particular songs using the website's search engine	
Scope & Level	Consumers	
Preconditions	Knowledge of song name, genre or other distinguishing features	
Success End Condition	Song is located, customer has found what they are looking for	
Failed End Condition	Search comes up empty; song is not in digital archive, user searched using incorrect parameters	
Primary, Secondary Actors	User, System	
Trigger	Customer types song name and requests search function	
DESCRIPTION	Step	Action
	1	Search function is requested
	2	System searches archive for the song
	3	Result(s) is/are displayed to the user
EXTENSIONS	Step	Branching Action
	2a	If archive has no songs matching or close to the search, no results are displayed.
	2b	If user misspells his/her search query, system will display results closest to correct spelling.
VARIATIONS		Branching Action

Use Case Diagram

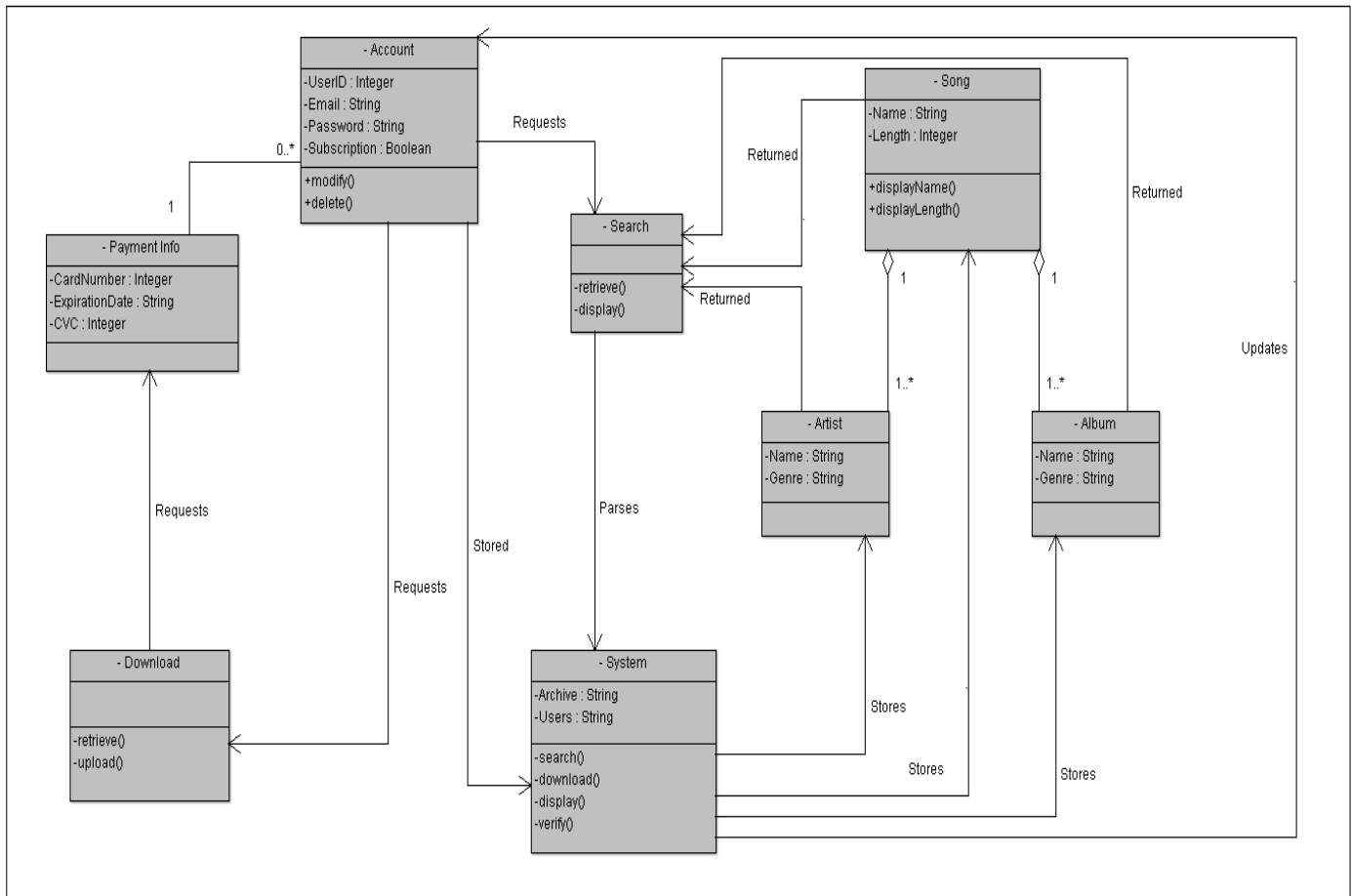


Class Name: Account	ID: 1	Type: Domain
Description: A hub that stores all data and preferences of a certain user.		Associated Use Cases: Create Account Manage Account Subscription Account
Responsibilities	Collaborators	
Correctly store user data	System	
Update user data when requested	System, User	
Enable account type to be modified or deleted	System	
Attributes	Operations	
Customer Name	Display(CustomerName), Edit(CustomeName)	
Customer Email	Display(CustomerMail)	
Account Type	Display(CustomerAccountType), Edit(CustomerAccountType)	
Payment Information	Edit(PaymentInformation)	
Relationships		
Generalisation (a-kind-of)	Storage	
Aggregation (has-parts)	Download history	
Other Associations	Admin	
Composition	Download a Song	
Dependency		

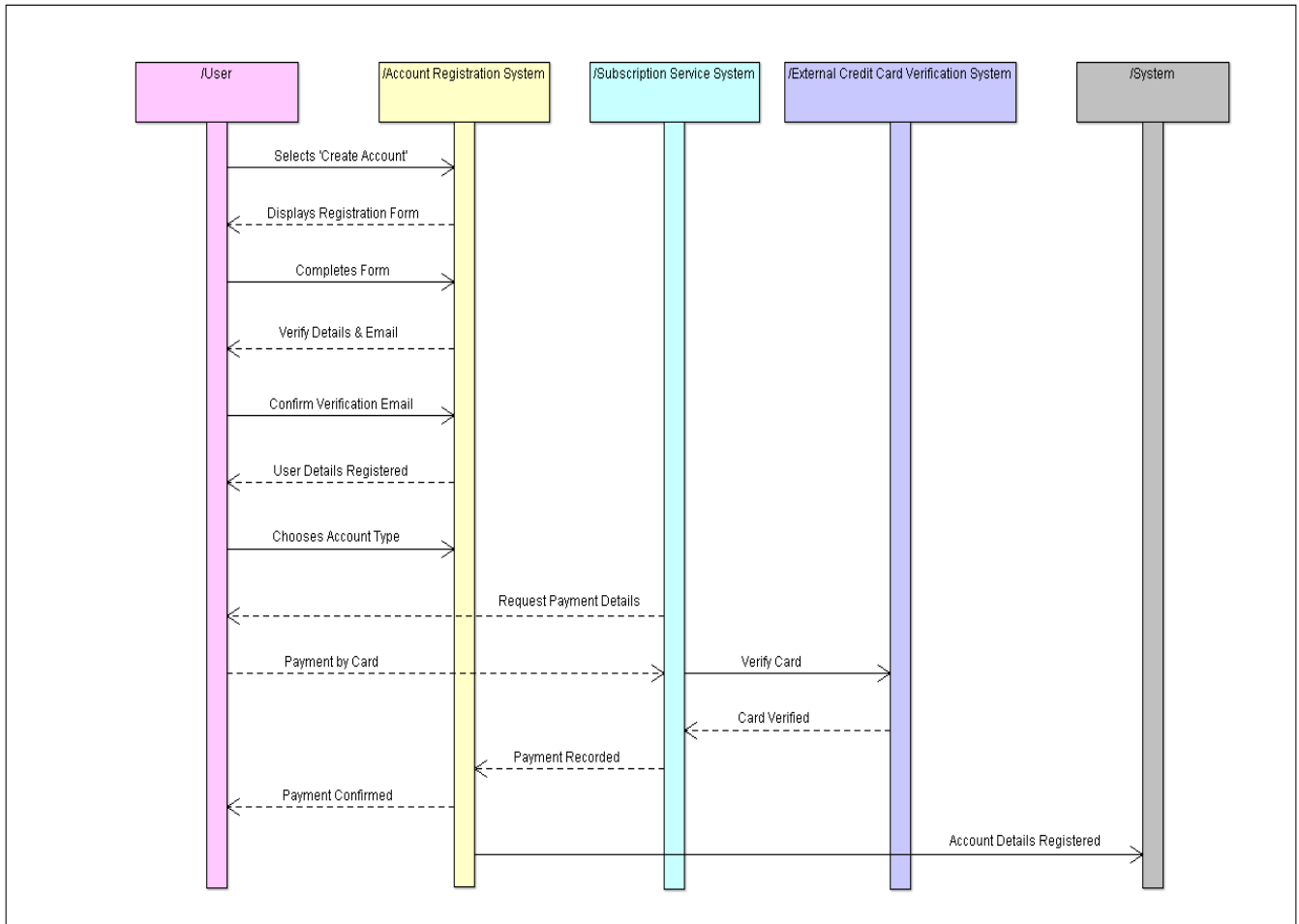
Class Name: Download Song	ID: 2	Type: Domain
Description: Takes payment (if needed) and transfers song data to both the customer's account and local system.		Associated Use Cases: Add to Basket Manage Account
Responsibilities	Collaborators	
Transfer data from system to user machine	System	
Pause/cancel current download if requested	User	
Update account with correct download history	System	
Attributes	Operations	
Song Name	Display(SongName),	
Song File Size	Display(SongFileSize)	
Song Length	Display(SongLength)	
Payment Information	Edit(PaymentInformation), Confirm(PaymentInformation)	
Relationships		
Generalisation (a-kind-of)		
Aggregation (has-parts)	Download history	
Other Associations	Admin	
Composition		
Dependency		

Class Name: Search for Music	ID: 3	Type: Domain
Description: Parses through digital archive using user provided information to locate a certain item.		Associated Use Cases: Download Song Add to Basket
Responsibilities	Collaborators	
Input user query into search request	User, System	
Locate item using search parameters	System	
Display result(s)	System	
Attributes	Operations	
User Input	Display(UserInput), Search(UserInput)	
Song Name	Search(SongName), Display(SongName)	
Relationships		
Generalisation (a-kind-of)	Search Engine	
Aggregation (has-parts)	System Song Library	
Other Associations	Admin	
Composition		
Dependency		

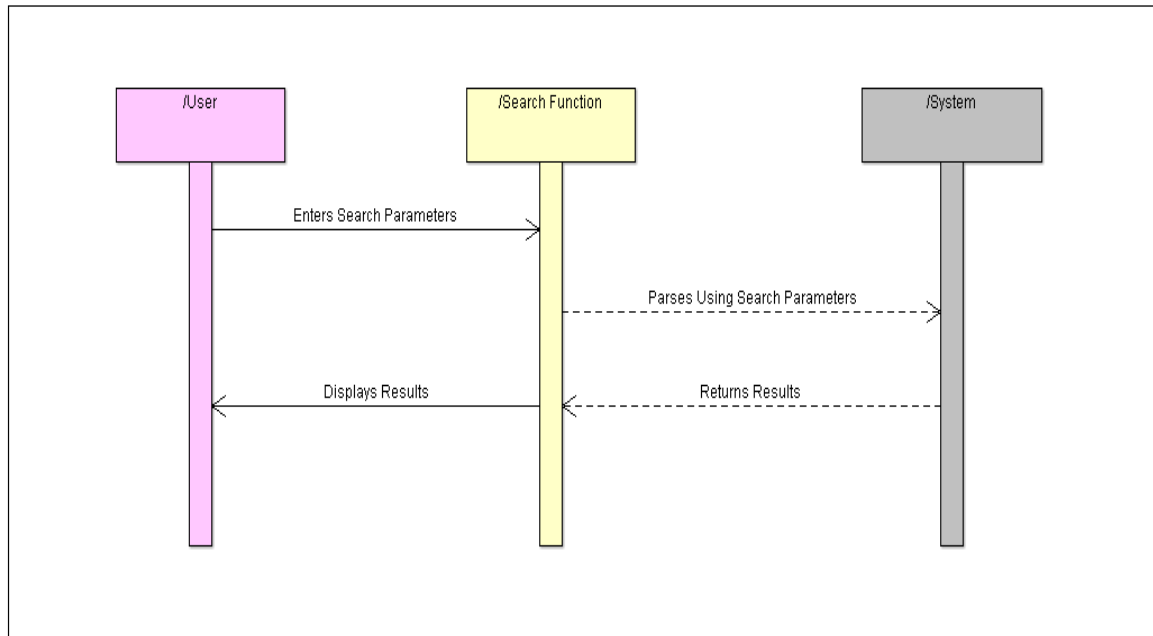
Class Diagram



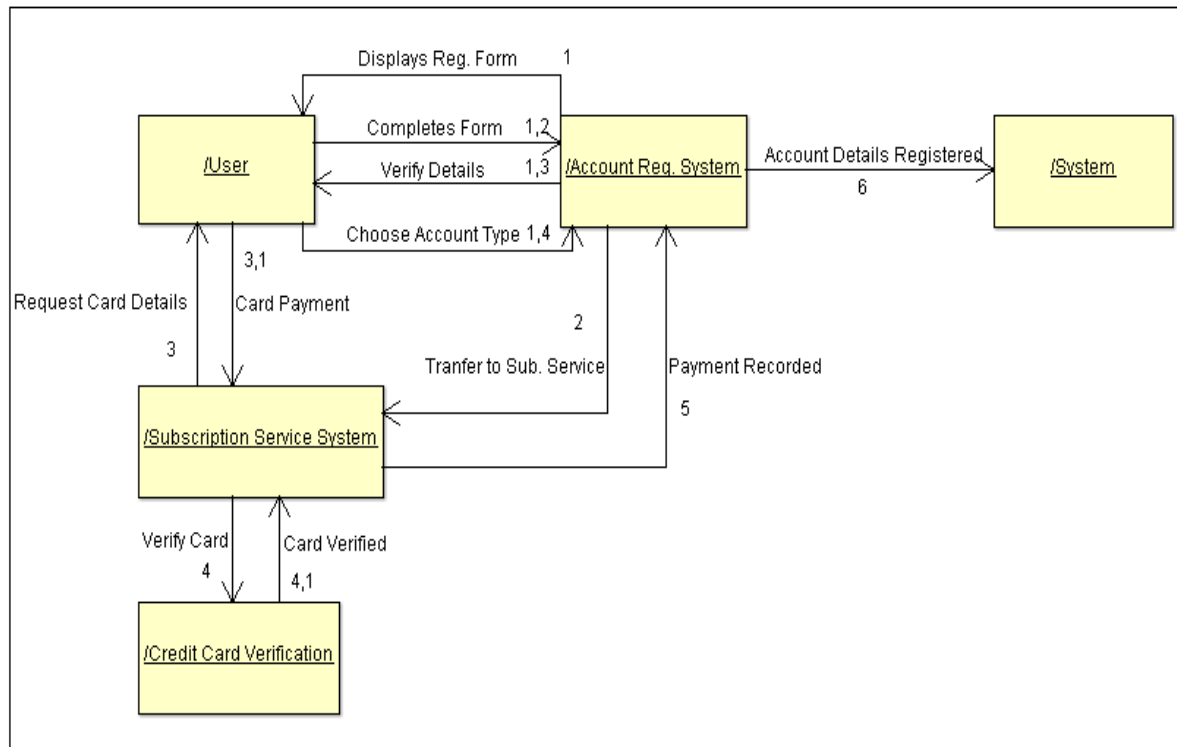
Sequence Diagram: Create Account



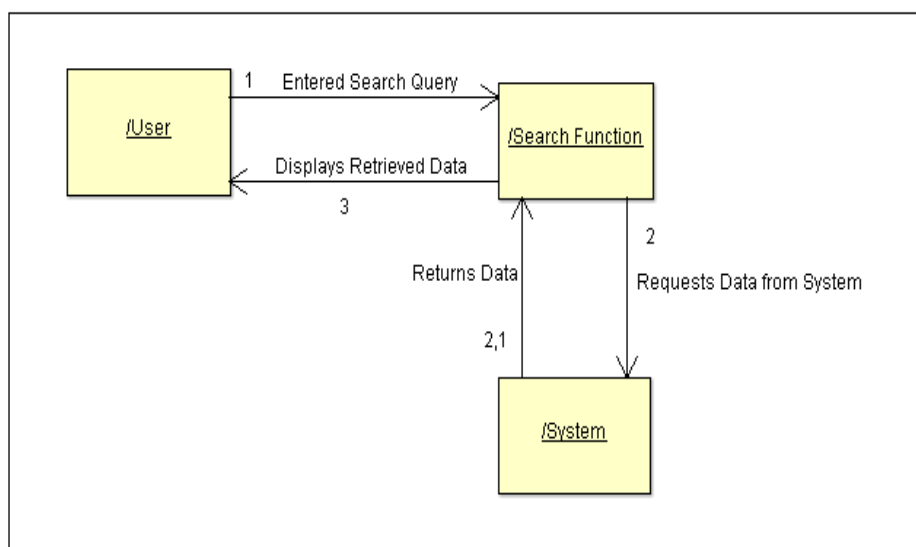
Sequence Diagram: Search



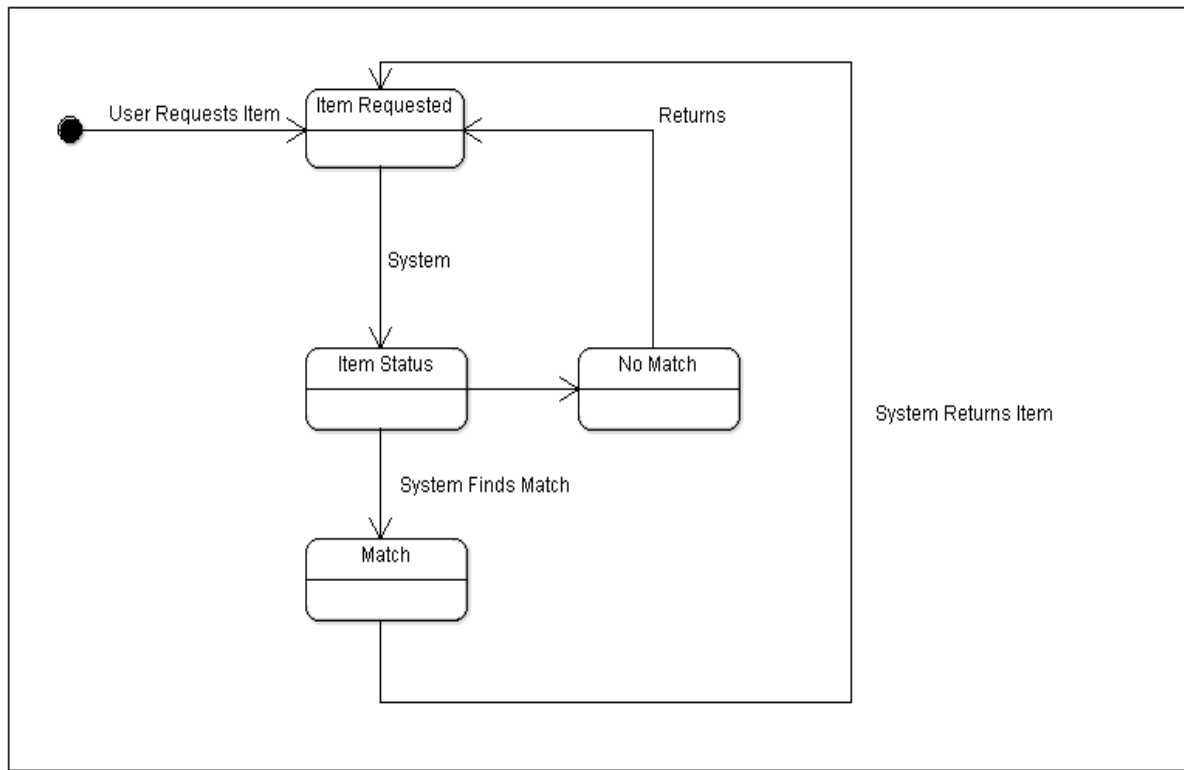
Communication Diagram: Create Account



Communication Diagram: Search

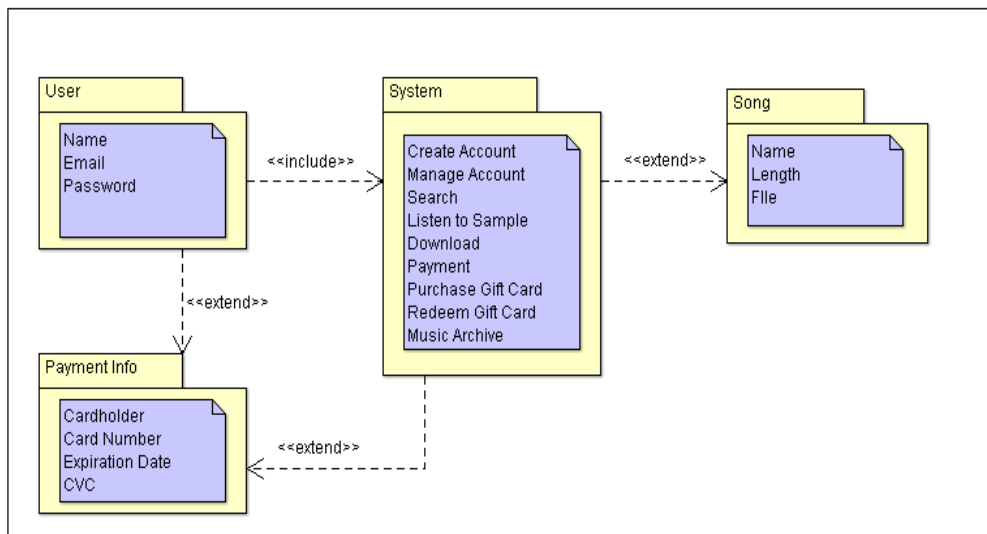


State Diagram: Search

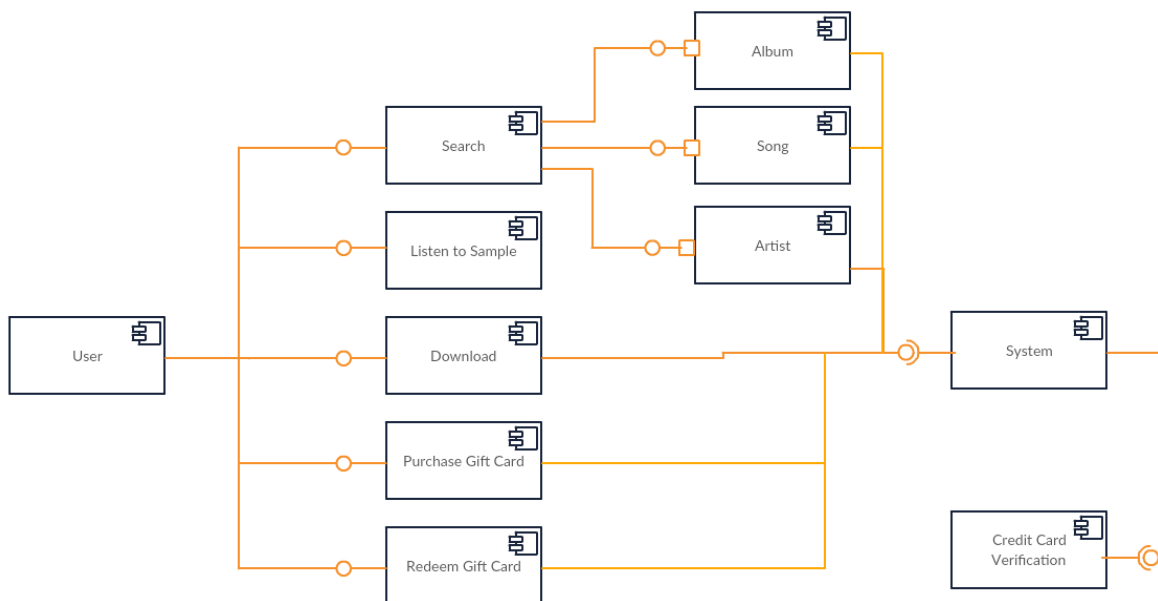


System Architecture

Package Diagram:



Component Diagram:



Deployment Diagram:

