Inventory App

Software Development
4th Year Project

Design Document

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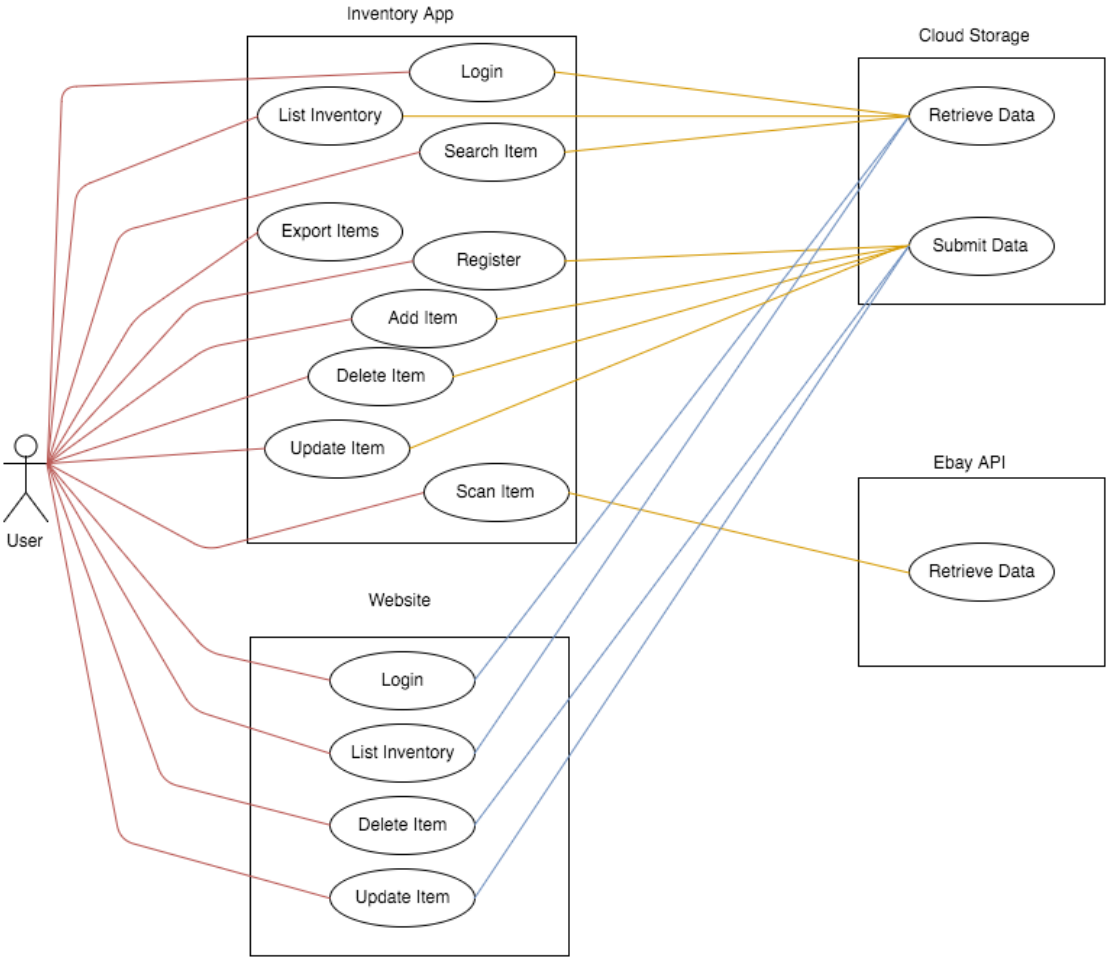
Introduction

The purpose of this design document is to demonstrate from an architectural point of view, how the Inventory App will work. This document describes how the functionality of the application will be implemented.

This design document will include the following:

- Use Case Diagram
- Brief Use Cases
- Detailed Use Cases
- User Interface Design

Use Case Diagram



Brief Use Cases

Mobile Application

Register

Name: Register
Actor: User

Description: This use case begins when the user has installed the application on their phone and selects the option to register. The user creates a username and password and provides their email address. The user account will be created if the provided credentials are valid and not already in use by another user.

Login

Name: Login
Actor: User

Description: This use case begins when the user has registered and selects the option to login. The user enters their username and password. If the details provided are valid, they will then be directed to the application's home page.

Scan Item

Name: Scan Item
Actor: User

Description: This use case begins when the user chooses the option to scan an item. The barcode scanner will be activated which will then capture the barcode on the item. The barcode number is then sent to the Ebay API and the item details sent to the cloud storage database.

Add Item

Name: Add Item
Actor: User

Description: This use case begins when the user chooses the option to add an item manually. The user fills out all the item fields associated with the item by typing or using the OCR functionality. The item information is then sent to the cloud storage database.

List Inventory

Name: List Inventory
Actor: User

Description: This use case begins when the user chooses a category from the list of categories and all the related items are retrieved from the cloud storage database and displayed on the screen in a list.

Search Item

Name: Search Item
Actor: User

Description: This use case begins when the user chooses the option to search for an item. The user enters in a keyword into the search bar and all matching items are retrieved from the cloud storage database and displayed on the screen in a list.

Edit Item

Name: Edit Item
Actor: User

Description: This use case begins when the user chooses the option to edit an item by clicking on the item from the inventory list. The user can update the item fields on the item which are sent back to the cloud storage database.

Delete Item

Name: Delete Item
Actor: User

Description: This use case begins when the user chooses the option to delete an item after clicking on the item from the inventory list. The user can delete the item which removes the record of the item from the cloud storage database.

Export Items

Name: Export Items
Actor: User

Description: This use case begins when the user chooses the option to export a copy of all items in the inventory list. An email is sent to the users email address containing a CSV file attachment of their inventory items.

Website

Login

Name: Login
Actor: User

Description: This use case begins when the user chooses the option to login. Once the user has registered their details using the mobile application they can then log into the website to view their inventory by entering their username and password.

List Inventory

Name: List Inventory
Actor: User

Description: This use case begins when the user selects a category from the list of categories and all the related items are retrieved from the cloud storage database and displayed on the screen in a list.

Edit Item

Name: Edit Item
Actor: User

Description: This use case begins when the user chooses the option to edit an item by clicking on the item from the inventory list. The user can update the item fields on the item which are sent back to the cloud storage database.

Delete Item

Name: Delete Item
Actor: User

Description: This use case begins when the user chooses the option to delete an item after clicking on the item from the inventory list. The user can delete the item which removes the record of the item from the cloud storage database.

Detailed Use Cases

Mobile Application

Register

Name: Register
Actor: User
Main Success Scenario:

1. This use case begins when the user has installed the application on their phone and selects the option to register.
2. The user creates a username and password, which is entered twice and provides their email address.
3. The user presses the register button.
4. The use case ends when the account has been created

Alternatives:
4a Username already exists

4.1 An error is displayed to the user
4.2 The system resumes from step 2

4b Email address already exists

4.1 An error is displayed to the user
4.2 The system resumes from step 2

4c Password fields do not match

4.1 An error is displayed to the user
4.2 The system resumes from step 2

Login

Name: Login
Actor: User
Main Success Scenario:

1. This use case begins when the user has registered and selects the option to login.
2. The user enters their username and password.
3. The user presses the login button.
4. The use case ends when the user has logged in.

Alternatives:
3a Incorrect Username

3.1 An error is displayed to the user
3.2 The system resumes from step 2

3b Incorrect Password

3.1 An error is displayed to the user
3.2 The system resumes from step 2

Scan Item

Name: Scan Item
Actor: User
Main Success Scenario:

1. This use case begins when the user chooses the option to scan an item.
2. The barcode scanner is activated.
3. Barcode on the item is captured.
4. The barcode number is then sent to the Ebay API.
5. Item details returned to app.
6. Item details sent to cloud storage database
7. The use case ends when Item details displayed to screen.

Alternatives:
3a No internet connection
3.1 An error is displayed to the user
3.2 The system resumes from step 1
5a No item found
5.1 An error is displayed to the user
5.2 The system resumes from step 1

Add Item

Name: Add Item
Actor: User
Main Success Scenario:

1. This use case begins when the user chooses the option to add an item manually.
2. The user fills out all the item fields associated with the item by typing or using the OCR functionality.
3. The user presses the add item button.
4. The use case ends when the item information is then sent to the cloud storage database.

Alternatives:
2a OCR result error
2.1 An error is displayed to the user
2.2 The system resumes from step 2
3a No internet connection
3.1 An error is displayed to the user
3.2 The system resumes from step 2
3b Item already exists
3.1 An error is displayed to the user
3.2 The system resumes from step 2

List Inventory

Name: List Inventory
Actor: User
Main Success Scenario:

1. This use case begins when the user chooses a category from the list of categories
2. All the related items are retrieved from the cloud storage database
3. Use case ends when Items are displayed on the screen in a list.

Alternatives:
2a No internet connection

2.1 An error is displayed to the user
2.2 The system resumes from step 1

Search Item

Name: Search Item
Actor: User
Main Success Scenario:

1. This use case begins when the user chooses the option to search for an item.
2. The user enters in a keyword into the search bar.
3. All matching items are retrieved from the cloud storage database.
4. Use case ends when items are displayed on the screen in a list.

Alternatives:
3a No internet connection

3.1 An error is displayed to the user
3.2 The system resumes from step 2

Edit Item

Name: Edit Item
Actor: User
Main Success Scenario:

1. This use case begins when the user chooses the option to edit an item by clicking on the item from the inventory list.
2. The user updates the item fields on the item.
3. The user clicks the update item button.
4. Use case ends when the item details are sent back to the cloud storage database.

Alternatives:
4a No internet connection

4.1 An error is displayed to the user
4.2 The system resumes from step 2

Delete Item

Name: Delete Item
Actor: User
Main Success Scenario:

1. This use case begins when the user chooses the option to delete an item after clicking on the item from the inventory list.
2. The user presses the delete item button
3. The use case ends when the record of the item is removed from the cloud storage database.

Alternatives:
3a No internet connection

3.1 An error is displayed to the user
3.2 The system resumes from step 1

Export Items

Name: Export Items
Actor: User
Main Success Scenario:

1. This use case begins when the user presses the export button.
2. A CSV file is created containing a copy their inventory items.
3. An email is sent to the users email address containing the CSV file as an attachment.

Alternatives:
2a No internet connection

2.1 An error is displayed to the user
2.2 The system resumes from step 1

Website

Login

Name: Login
Actor: User
Main Success Scenario:

1. This use case begins when the user selects the option to login.
2. The user enters their username and password.
3. The user presses the login button.
4. The use case ends when the user has logged in.

Alternatives:
3a Incorrect Username

3.1 An error is displayed to the user
3.2 The system resumes from step 2

3b Incorrect Password

3.1 An error is displayed to the user
3.2 The system resumes from step 2

List Inventory

Name: List Inventory
Actor: User
Main Success Scenario:

1. This use case begins when the user chooses a category from the list of categories
2. All the related items are retrieved from the cloud storage database
3. Use case ends when Items are displayed on the screen in a list.

Alternatives:
2a No internet connection

2.1 An error is displayed to the user
2.2 The system resumes from step 1

Edit Item

Name: Edit Item
Actor: User
Main Success Scenario:

1. This use case begins when the user chooses the option to edit an item by clicking on the item from the inventory list.
2. The user updates the item fields on the item.
3. The user clicks the update item button.
4. Use case ends when the item details are sent back to the cloud storage database.

Alternatives:
4a No internet connection

4.1 An error is displayed to the user
4.2 The system resumes from step 2

Delete Item

Name: Delete Item
Actor: User
Main Success Scenario:

1. This use case begins when the user chooses the option to delete an item after clicking on the item from the inventory list.
2. The user presses the delete item button
3. The use case ends when the record of the item is removed from the cloud storage database.

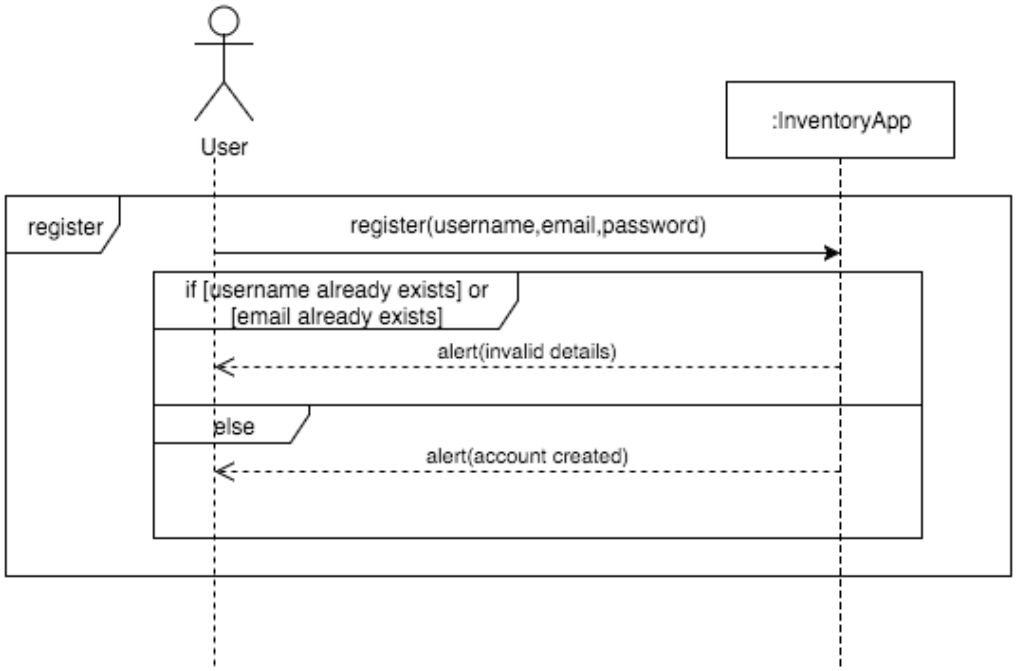
Alternatives:
3a No internet connection

3.1 An error is displayed to the user
3.2 The system resumes from step 1

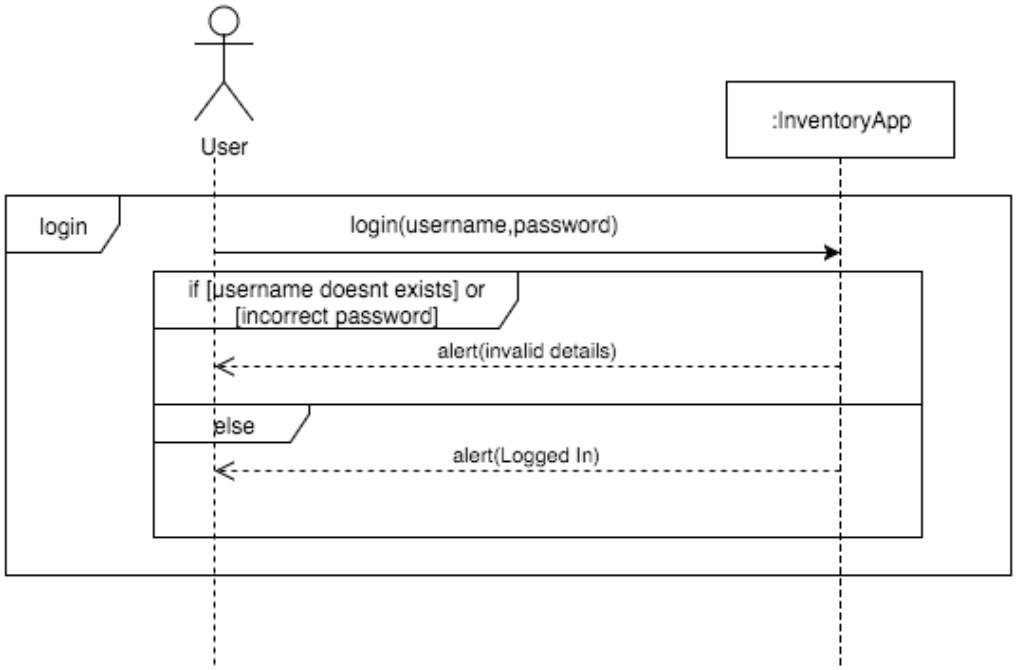
System Sequence Diagrams

Mobile Application

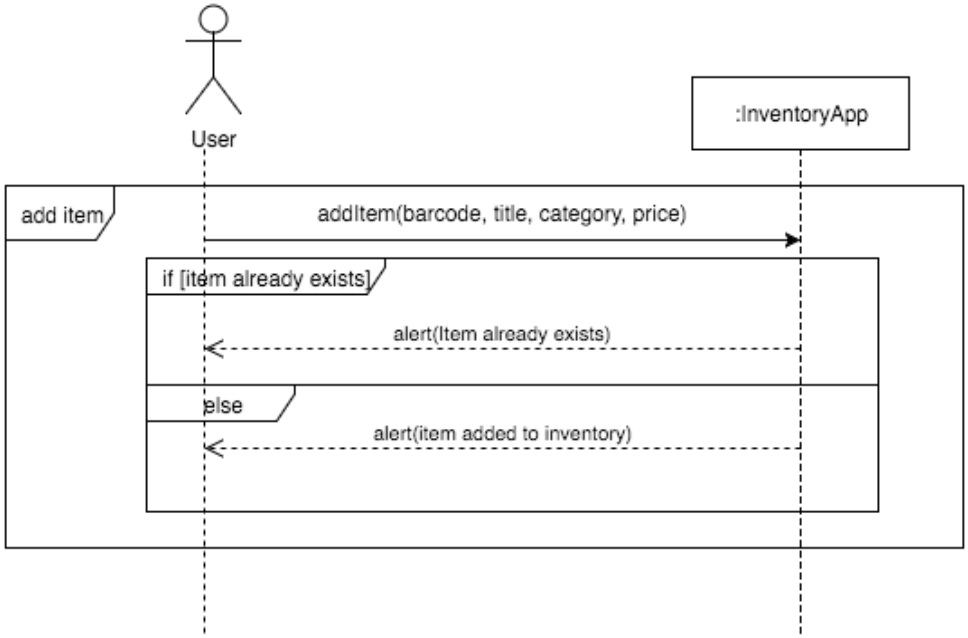
Register



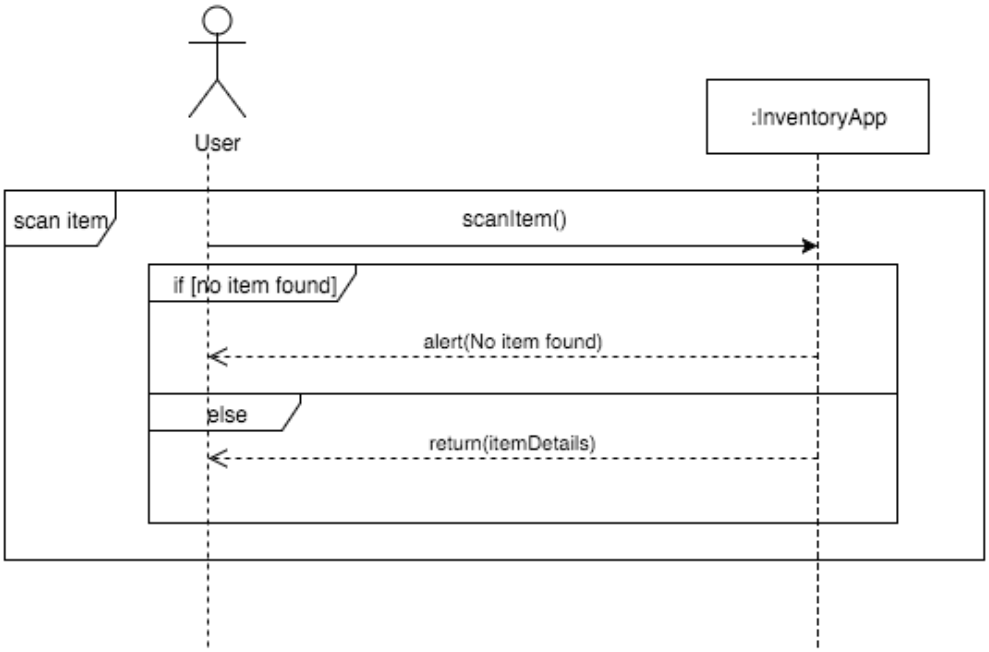
Login



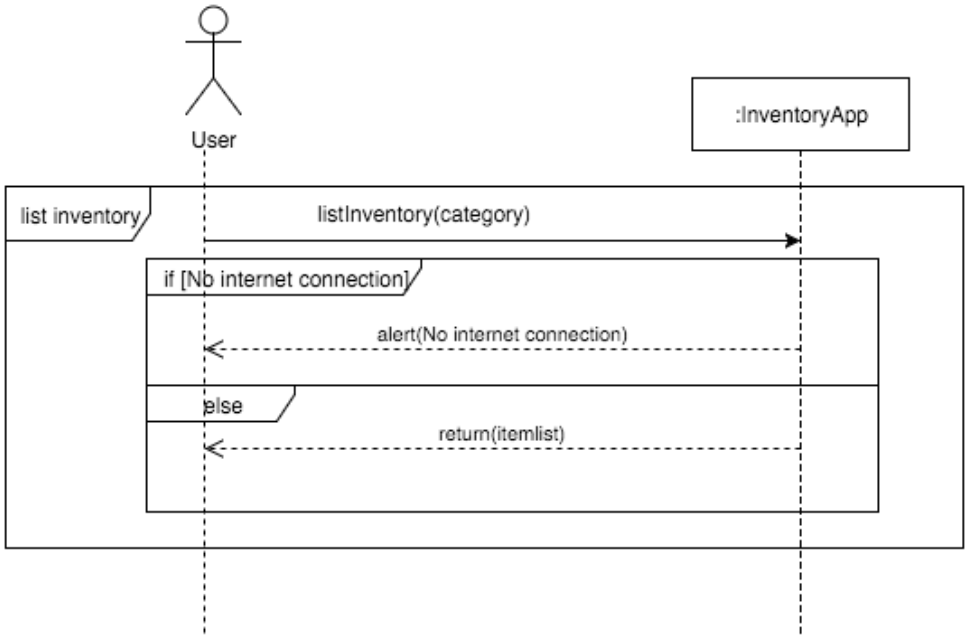
Add Item



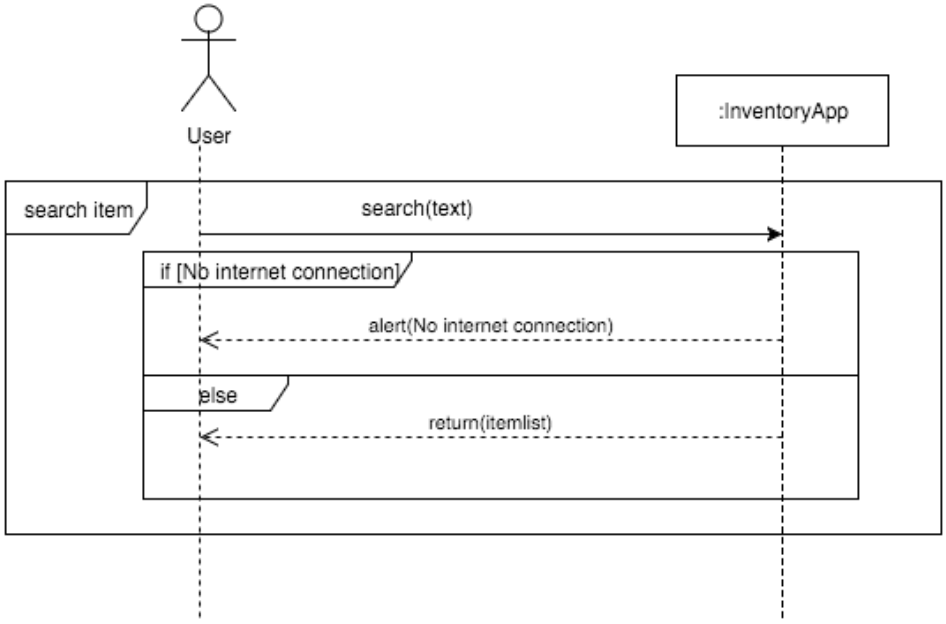
Scan Item


User
:InventoryApp
scan item
scanItem()
if [no item found]
alert(No item found)
else
return(itemDetails)

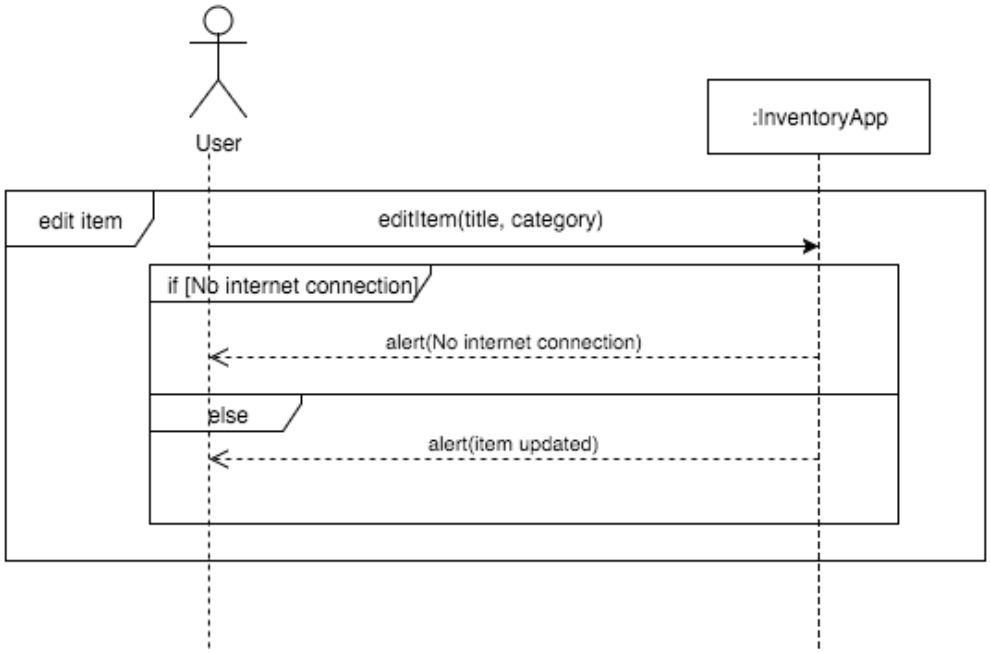
List Inventory



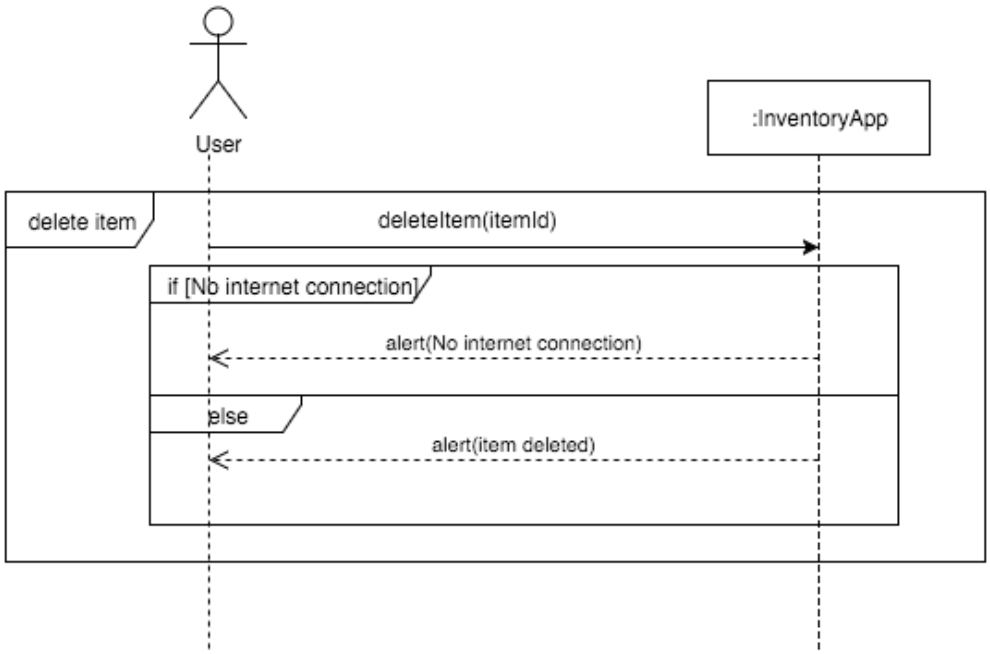
Search Item



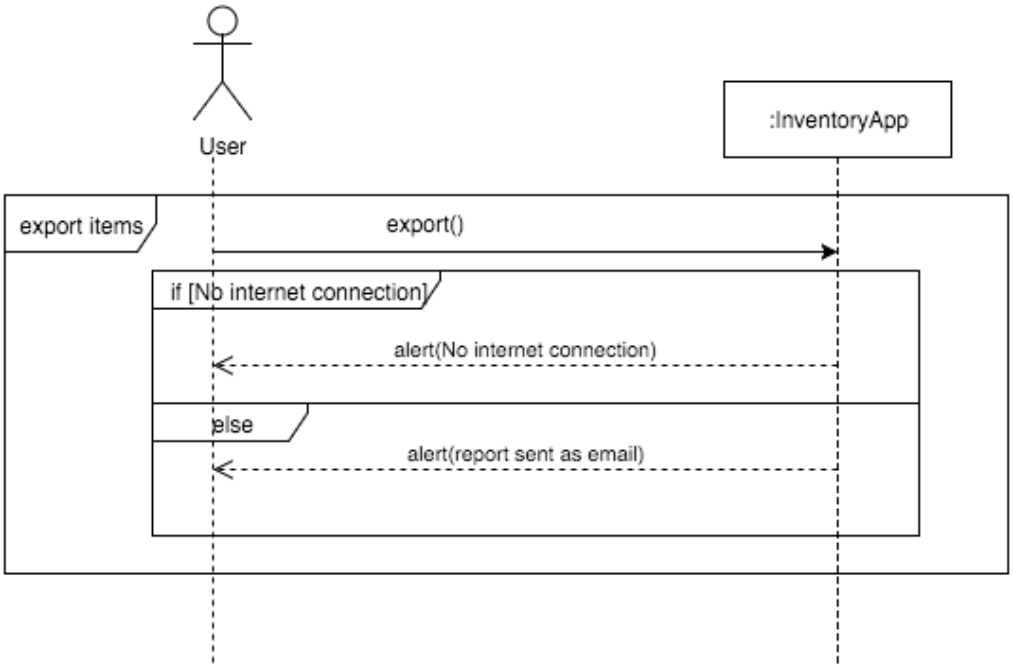
Edit Item



Delete Item

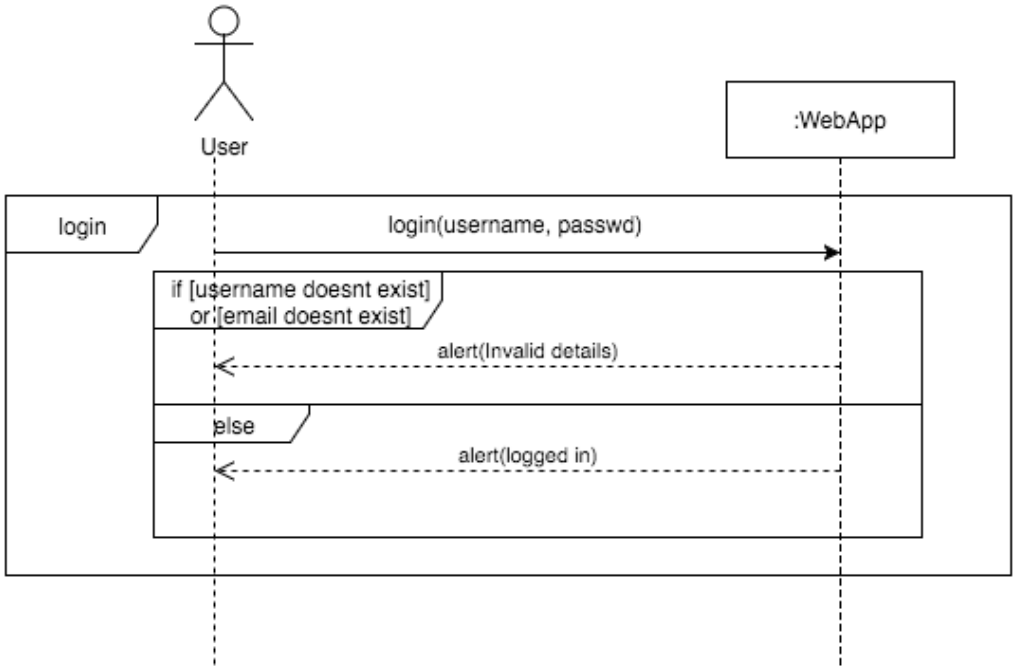


Export Items

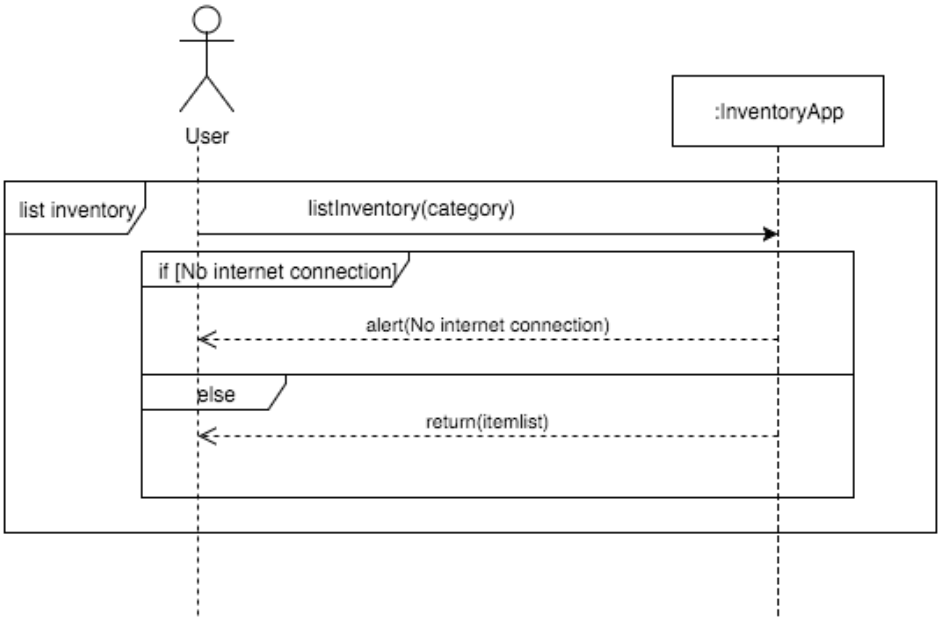


Website

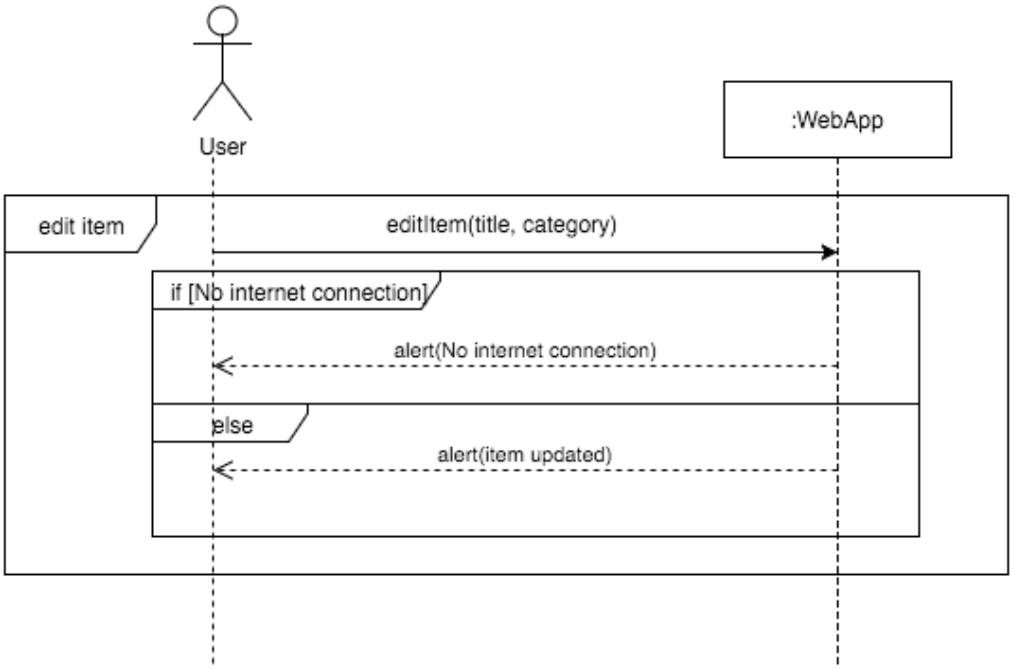
Login



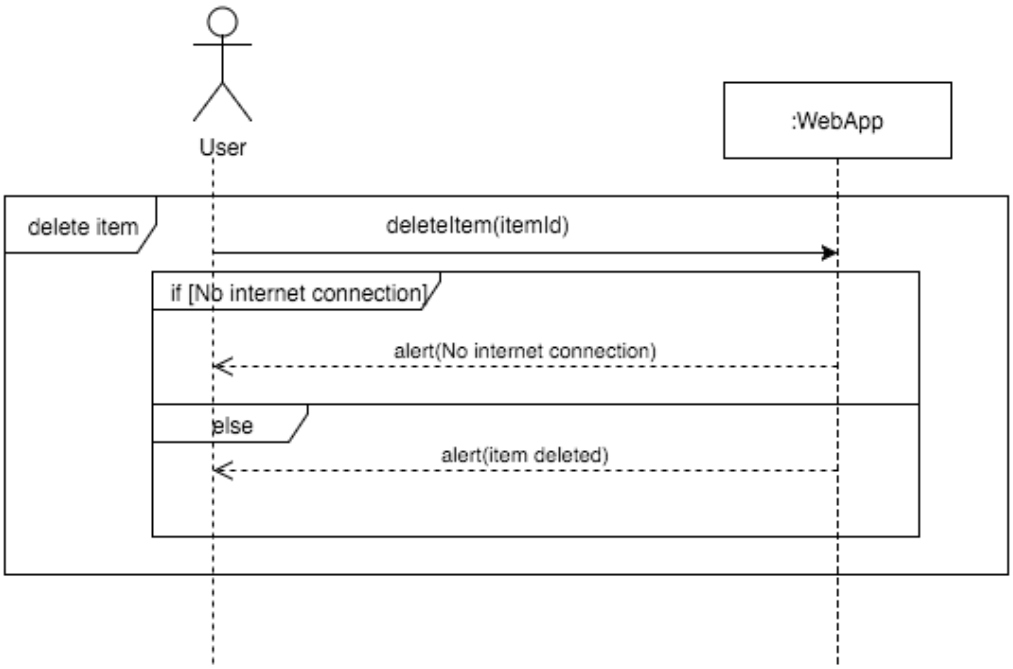
List Inventory



Edit Item



Delete Item



Database Design

The Inventory App will store all of its data in a mySQL database hosted in the cloud. The database will contain three tables:

- User table
- Items table
- Books table

Below is a table showing the design of the database tables.

User table:

Field	*Type*	*Null*	*Key*	*Default*	*Extra*
uid	int	no	PRI	NULL	auto_inc
username	varchar	yes		NULL	
password	varchar	yes		NULL	
email	varchar	yes		NULL	

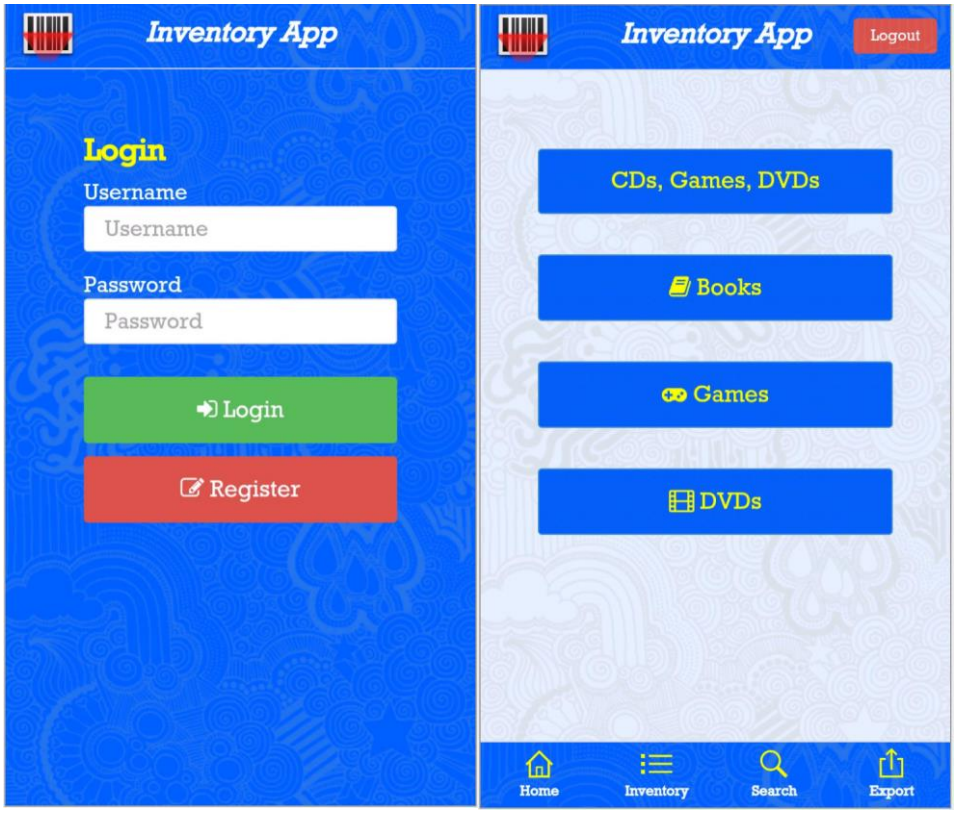
Items table:

Field	*Type*	*Null*	*Key*	*Default*	*Extra*
iid	int	no	PRI	NULL	auto_inc
uid	int	no		NULL	
barcode	varchar	no		NULL	
title	varchar	no		NULL	
category	varchar	no		NULL	
pic_url	varchar	yes		NULL	
price	varchar	no		NULL	
ts	timestamp	no		CURRENT_TS	

Books table:

Field	*Type*	*Null*	*Key*	*Default*	*Extra*
iid	int	no	PRI	NULL	auto_inc
uid	int	no		NULL	
barcode	varchar	no		NULL	
title	varchar	no		NULL	
author	varchar	yes		NULL	
category	varchar	no		NULL	

pic_url	varchar	yes		NULL	
price	timestamp	no		NULL	
ts	timestamp	no		CURRENT_TS	

User Interface

The user interface will have textured backgrounds and the colour scheme for the application will be blue, white and yellow. These are very friendly colours and will allow text to be displayed very clearly on the screen to the user.