Product Requirements Document
Submission 1 Specification

MS-Quokka

SWEN90007 SM2 2022 Project

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Revision History

Date	Version	Description	Author
09/08/2022	01.00-D01	Initial draft for admin use cases. Also included is a description of admin in the Actor section.	Haoxin Li
09/08/2022	01.00-D02	Initial draft for buyer use cases. Also included a description of the buyer in the Actor section and a description of Buy it now in terms section	Ray Chen
09/08/2022	01.00-D03	Initial draft for seller use cases.	Yifei Yu
12/08/2022	01.00-D04	Modify seller use cases based on feedback. Add alternative flow for the seller use cases.	Yifei Yu
12/08/2022	01.00-D05	Modify buyer user cases according to the discussion in the team meeting.	Ray Chen
12/08/2022	01.00-D06	Modify admin use cases according to Wednesday's meeting. Reviewed seller use case and buyer use case. Added Use Case diagram after discussion with Yifei.	Haoxin Li
12/08/2022	01.00-D07	Added Domain model diagram, Domain model description, and reviewed all use cases	Edward Bond

Contents

1. Introduction

1.1 Proposal

This document specifies the SWEN90007 project use cases, actors to be implemented, and the system's domain model.

1.2 Target Users

This document is mainly intended for SWEN90007 students and the teaching team.

1.3 Conventions, terms and abbreviations

This section explain the concept of some important terms that will be used throughout this document. These terms are detailed alphabetically in the following table.

Term	Description
MS-Quokka marketplace system/ the system/ marketplace	The marketplace system under development by the team
Buy it now	Buyers make a purchase right away
Seller group	A collection of users who manage the same set of listings

2. Actors

Actor	Description
Administrator	The person who is responsible for managing and monitoring the MarketPlace system. One of their key interests is to ensure there are no inappropriate listings on the system. There is only one administrator for the system.
Buyer	A user who is buying something or intends to buy from the MarketPlace system.
Seller	A user who manages orders and listings on behalf of the seller group that they belong to.

3. Use Cases

3.1 Use Case 1: Admin Monitors the Application

Actors

Administrator

Basic Flow

Every week, the administrator logs into the marketplace system to monitor the application. After logging in, they use their admin dashboard to view all the registered users so that they know how many users the system has. Then, the administrator uses the admin dashboard to look at all the goods listed as available in the system, making sure there are no inappropriate listings. Finally, they view all the purchases that have been placed in the system in the past to understand how many sales have been generated.

3.2 Use Case 2: Admin Removes Inappropriate Listings

Actors

Administrator

Basic Flow

After logging in, the administrator uses the admin dashboard to look at all the goods listed as available in the system. They scroll down the page and notice that there is a listing that illegally sells guns, against the policy of the application. The administrator chooses to delete this listing from the application. A confirmation pop-up window appears, asking the administrator to confirm their choice. The administrator confirms it and the listing is deleted [AF1].

Alternative Flow

[AF1] Cancel the operation

A confirmation pop-up window appears, asking the administrator to confirm their choice. The administrator changes their mind and decides to double-check their policy first. They select the "cancel" button in the confirmation pop-up to not remove the listing.

3.3 Use Case 3: Purchase an item with fixed price

Actors

Buyer

Basic Flow

Buyer heads to MS-Quokka online marketplace to search for an item to purchase. After entering the website, the buyer types the item keywords into the search bar and presses search. [AF1] The system redirects the buyer to the market page with a list of related items. Then, the buyer browses the list and selects the "Buy Now icon" corresponding to the item the buyer is most interested in [AF2]. After logging in, the buyer enters their checkout details into the purchase page. Finally, the buyer selects "confirm" to purchase [AF3][AF4]. The buyer can view the order on the purchase history page.

Alternative scenario

[AF1] No item was found

The system could not find any related item and returned it with an empty list. The buyer exits the MS-Quokka online marketplace website with disappointment.

[AF2] The buyer does not have an account

The system redirects the buyer to the login page, and the buyer selects to register an account. Then, the buyer enters their details into the registration page and hits submit. The buyer has registered an account and can continue with the purchase.

[AF3] The item has been sold out

The item has been sold out right before the buyer selects to confirm to purchase. A warning message pops up saying that the item is currently unavailable. After a few seconds, the system redirects the buyer to the purchase page with the item marked as unavailable. The buyer exits the MS-Quokka online marketplace website with disappointment.

[AF4] Seller deleted the item

The seller deleted the item right before the buyer selects confirm to purchase. A warning message pops up saying that the item is currently unavailable. After a few seconds, the system redirects the buyer to the purchase page with the item marked as unavailable. The buyer exits the MS-Quokka online marketplace website with disappointment.

3.4   Use Case 4: Purchase an item with an auction

Actors

Buyer

Basic Flow

The buyer browses the list of auctions and selects the "place your bid" icon corresponding to the item the buyer is most interested in. The buyer enters a number that is higher than the current listed price and selects "confirm". The system marks the buyer as the highest bidder, and the item price increases to the price made by the buyer. The buyer exits the MS-Quokka online marketplace website with the hope to win the auction [AF1]. After the auction has ended, The buyer can view the order on the purchase history page.

Alternative scenario

[AF1] The buyer gets outbid

The buyer gets outbid by another buyer; the item price rises above the price set by the buyer. The system asks the buyer to enter another bid.

3.5   Use Case 5: Cancelling an order

Actors

Buyer

Basic Flow

The buyer logs into their account to cancel an order made by mistake. After logging in, the buyer navigates to order history and selects the order the buyer wishes to cancel. The buyer selects the "cancel the order" button [AF1]. Then, the order will be marked as cancelled on the buyer's purchase history page.

Alternative scenario

[AF1] The item has been marked as fulfilled before the buyer attempts to cancel

The item has been marked as fulfilled. The buyer selects the "cancel the order" button. Then, a warning message pops up saying that the order could not be cancelled.

3.6 Use Case 6: Modifying an order

Actors

 Buyer

Basic Flow

The buyer logs into their account to modify an order made previously. After logging in, the buyer navigates to order history and selects the order the buyer wishes to change. The buyer selects the "modify the order" button [AF1][AF2]. Then, a purchase page with the order details will be displayed. The buyer modifies the order accordingly (e.g., order address) and then they click "save" to exit. The buyer is then able to view the modified order on the purchase history page.

Alternative scenario

[AF1] The item has been marked as processing before the buyer attempts to modify

The item has been marked as processing. The buyer selects the "modify the order" button. Then, a warning message pops up saying that the order could not be modified.

[AF2] The item has been marked as fulfilled before the buyer attempts to modify

The item has been marked as fulfilled. The buyer selects the "modify the order" button. Then, a warning message pops up saying that the order could not be modified.

3.7 Use Case 7: Seller Create a Listing

Actors

 Seller

Basic Flow

A seller logs into the Marketplace System to sell goods. After logging in, the seller goes to the user page and tries to create a new listing. The seller then enters the name, description, and quantity and chooses the listing as either a fixed price or an auction (If the auction is chosen, then the seller needs to set a starting price and an end date for the listing). Once all the required fields are entered, the seller submits the listing and waits for people to purchase it.

3.8 Use Case 8: Seller Edit a Listing

Actors

 Seller

Basic Flow

After creating a listing, the seller realised some details were not entered correctly. The seller then tries to find that listing by searching for the listing name. Once the listing is found, the seller then opens the edit listing view and tries to edit the listing (e.g. changing the price, description and quantity). After that, the seller saves the listing and the listing is successfully edited.

Alternative scenario

[AF1] Concurrency issue when two sellers try to edit the same listing at the same time

After creating the listing, two sellers from the same seller group realised some details were not entered correctly. Both sellers try to find that listing by searching for the listing name. Coincidentally, both sellers find the listing and try to edit it at the same time. Since the system does not allow more than one seller to edit the same listing at the same time, one of the sellers will get an error message saying that the listing is currently being edited by another seller and that seller will not be able to edit the listing unless the other seller has finished editing it.

3.9 Use Case 9: Seller Delete a Listing
Actors

Seller

Basic Flow

Due to the ongoing pandemic, the seller has been hit with a supply shock and is not able to provide stock for a listing. So, the seller has to take that listing down. The seller first tries to locate the listing that needs to be deleted, then the seller clicks on the 'Delete' button under that listing. A pop-up message appears asking the seller to confirm deleting the listing. The seller then clicks yes and the listing is successfully deleted.

Alternative scenario

[AF1] Accidentally deleted another listing

Due to the ongoing pandemic, the seller has been hit with a supply shock and is not able to provide stock for a listing. So, the seller has to take that listing down. The seller accidentally clicked on the delete button of a different listing when scrolling down the listings. Thankfully, a pop-up message appears and prevents the seller from deleting the wrong listing.

3.10 Use Case 10: Seller Modify an Order
Actors

Seller

Basic Flow

The seller has received an order that includes multiple quantities of the same product. During the pack-up process, the seller realised that they do not have enough stock to fulfil this order. So, the seller tries to modify the order by decreasing the quantity of that product that matches the remaining quantity. In this case, the seller can fulfil that modified order.

3.11 Use Case 11: Seller Cancel an Order

Actors

Seller

Basic Flow

The seller has received a new order. After checking the inventory, the seller realised that they did not have any stock left to fulfil that order. So, the seller then cancels the order by pressing the cancel order button. In this case, the buyer will be refunded and the order will not be fulfilled.

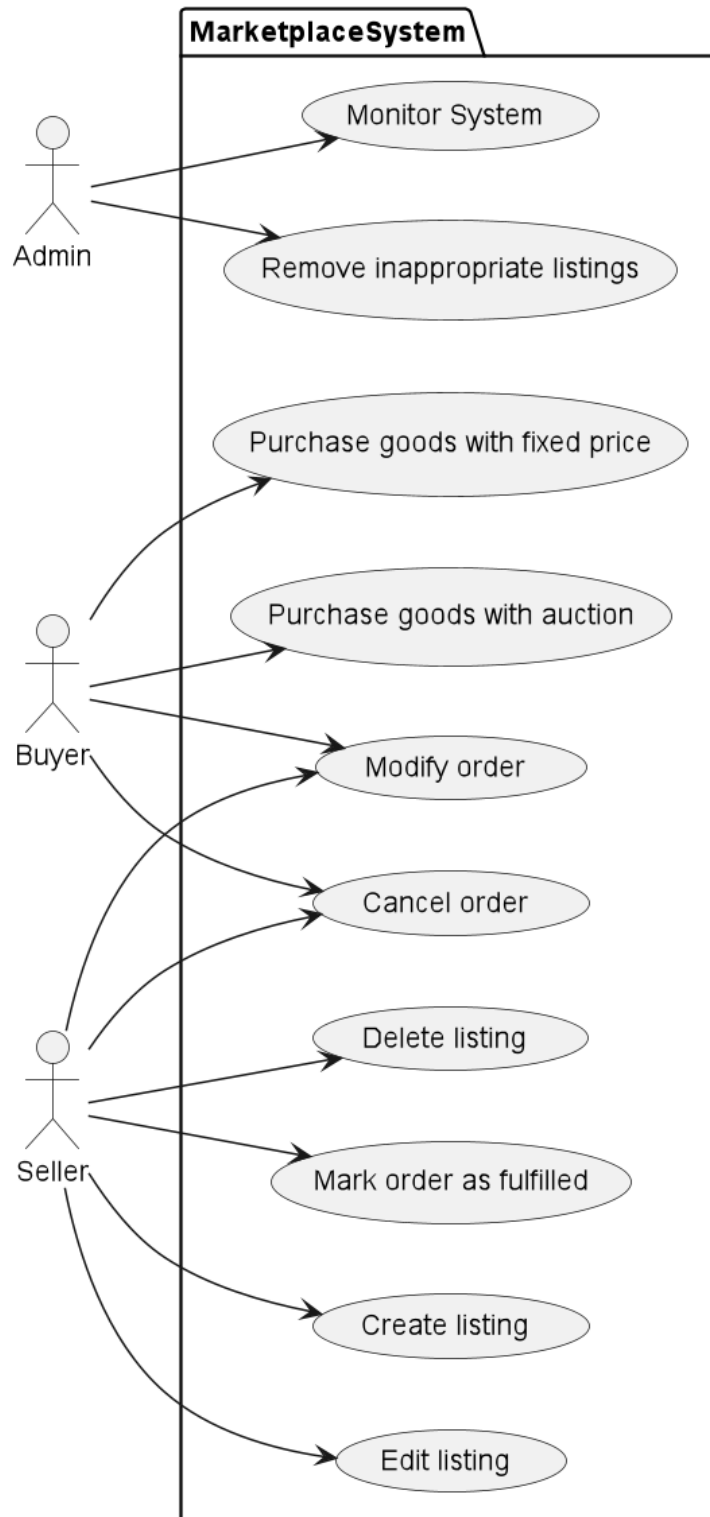### 3.12 Use Case 12: Seller Mark the Order as Fulfilled

Actors

Seller

Basic Flow

The seller has received a new order. After packing up the order, the seller then drops off the package at a post office. The seller then updates the order status to be 'Fulfilled'. In this case, the order is fully completed and no more actions can be taken for this order.

3.13 Use Case Diagram

The following use case diagram illustrates the interaction between the actors and the use cases.

4.   Domain Model

4.1   Domain Model Description

Based on the specifications provided for the Marketplace System Application, the system entities, attributes, and business rules can be summarised as:

- The **Admin** is a separate entity from other **User**s
- **Users** are a part of *at most one* **SellerGroup**
- **FixedPriceListing**s and **AuctionListing**s are created and managed by *only one* **SellerGroup**
- an **AuctionListing** records *at most one* highest bidding **User**
- **FixedPriceListing**s and **AuctionListing**s are for selling *only one* **Product**
- an **Order** records *only one* **SellerGroup** selling *only one* **Product** to *only one* Buying **User**
- An **Order** has *only one* **Status** at a time
- When no highest bidding **User** is recorded in an **Auction**, the price can be assumed to be the starting price set by the **SellerGroup**
- when an **Order** has a placed **Status**, all details of the **Order** may be changed
- When an **Order** has a processed **Status**, the order can only be cancelled by the **SellerGroup** or buying **User**, or fulfilled by the **SellerGroup**

Entities have been bolded; attributes have been underlined; and important *associations* have been italicised.

4.2 Domain Model Diagram