

---

## Product Requirements Document

### Submission 1 Specification

**Agora**

SWEN90007 SM2 2022 Project

Student Name	Student ID	UniMelb Username	GitHub Username	Email
Daniel Blain	831953	dblain	djblain	<a href="mailto:dblain@student.unimelb.edu.au">dblain@student.unimelb.edu.au</a>
Christopher Byrnes	747295	byrnesc	chrisbyrnes	<a href="mailto:byrnesc@student.unimelb.edu.au">byrnesc@student.unimelb.edu.au</a>
Gonzalo Molina	1085253	gmolina	GonzMol	<a href="mailto:gmolina@student.unimelb.edu.au">gmolina@student.unimelb.edu.au</a>
Mengjiao Wei	1242147	mengjiaow1	mengjiaowei	<a href="mailto:mengjiaow1@student.unimelb.edu.au">mengjiaow1@student.unimelb.edu.au</a>

---



---

SCHOOL OF  
**COMPUTING &  
INFORMATION  
SYSTEMS**

---

## Revision History

Date	Version	Description	Author
2/8/2022	01.00-D1	Initial Use Case Diagram	Daniel Blain, Christopher Byrnes, Mengjiao Wei, Gonzalo Molina
7/8/2022	01.00-D2	Initial Domain Model Diagram	Christopher Byrnes
7/8/2022	01.00-D3	Updated Domain Model Diagram	Daniel Blain, Christopher Byrnes, Mengjiao Wei, Gonzalo Molina
7/8/2022	01.00-D4	Initial draft for Actors and Use Cases	Mengjiao Wei, Gonzalo Molina
10/8/2022	01.00-D5	Initial description of Domain Model	Daniel Blain
10/8/2022	01.00-D6	Updated Domain Model Diagram	Daniel Blain, Christopher Byrnes, Mengjiao Wei
10/8/2022	01.00-D7	Updated Use Case Diagram	Christopher Byrnes
12/8/2022	01.00-D8	Updated Actors and Use Case	Mengjiao Wei
13/8/2022	01.00-D9	Updated Use Cases	Mengjiao Wei, Gonzalo Molina
14/8/2022	01.00-D10	Updated description of Domain Model	Daniel Blain
14/8/2022	01.00-D11	Proof-reading/grammatical updates of use cases; document formatting	Daniel Blain
14/8/2022	01.00-D12	Updated Terms, Use Cases, Domain Model Diagram	Daniel Blain, Christopher Byrnes, Mengjiao Wei, Gonzalo Molina
14/8/2022	01.00	Finalised document for submission	Daniel Blain, Christopher Byrnes, Mengjiao Wei, Gonzalo Molina

## Contents

<b>1. Introduction</b>	<b>4</b>
1.1. Proposal	4
1.2. Target Users	4
1.3. Conventions, Terms and Abbreviations	4
<b>2. Actors</b>	<b>5</b>
<b>3. Use Cases</b>	<b>6</b>
3.1. Use Case Diagram	6
3.2. Use Cases	
<b>4. Domain Model</b>	<b>13</b>
4.1. Domain Model Description	13
4.2. Domain Model Diagram	14

## 1. Introduction

### 1.1. Proposal

This document specifies the marketplace system 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 explains the concept of some important terms that will be used throughout this document. These terms are detailed alphabetically in the following table.

Term	Description
Admin	Special User responsible for overseeing the system's use and managing Listings and Users; short-hand for Administrator
Auction Good	A Good which multiple site users may place a bid on to try and acquire the item; the Good is sold to the user who places the highest bid
Bidding	The act of placing a bid on an Auction good
Buyer	A Marketplace User who purchases Goods
Co-seller	A nominated User which co-manages a Listing created by a Seller
Fixed Price Good	A Good, or Goods, to be sold at a single, non-negotiable price
Good	A product detailed for sale in a Listing
Listing	An entry for a product to be sold as it appears on the Marketplace site
Marketplace	The digital storefront proposed in this document, for buying and selling physical Goods
Order	A purchase, complete or incomplete, of a Good, detailing payee and shipping details
Seller	A Marketplace User who creates Listings for Goods to be sold
User	An individual, or business, registered with the Marketplace system, who can use its services to purchase or sell Goods

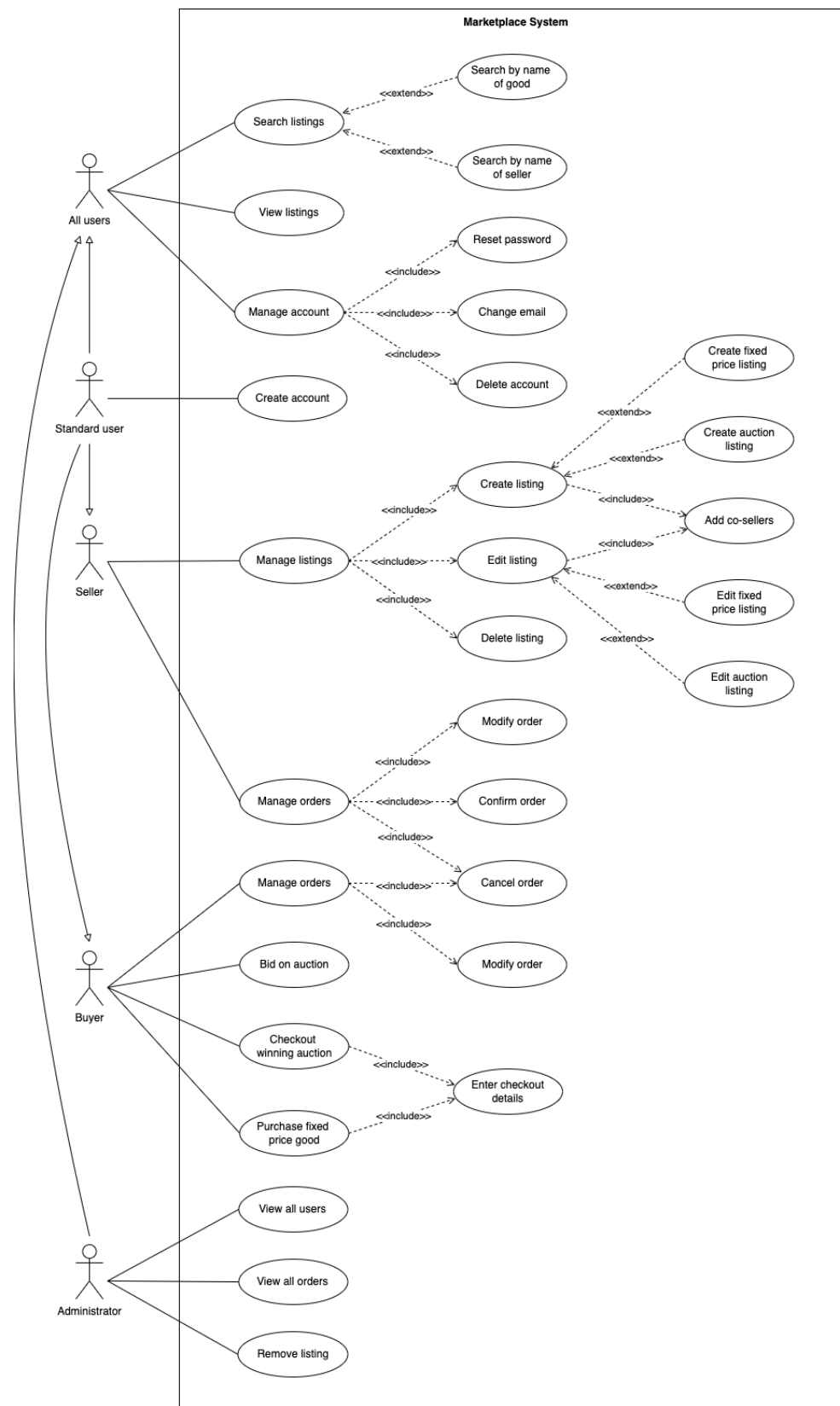
## 2. Actors

---

Actor	Description
Administrator	Manages User accounts and Listings; only one Administrator exists for the Marketplace system
All users	Refers to Buyers, Sellers, and Administrators collectively
Buyer	User who purchases Goods via Listings on the Marketplace
Seller	User who creates Listings for Goods that they want to sell
Standard User	Refers to Buyers and Sellers collectively

### 3. Use Cases

#### 3.1. Use Case Diagram



### 3.2. Use Cases

Each use case contains the name, actor, and basic flow describing the sequence of actions performed to achieve the use case. Included and extended use cases are referenced using underlined text.

#### Use Case 1: Search listings

**Actor:** All users

**Basic Flow:**

When all users open the marketplace, the existing listings are displayed on the homepage. At the top of the homepage is a search bar where users input search keyword(s). After entering search keyword(s), a subset of matching listings is displayed on the current page.

#### Use Case 2: Search by name of good

**Actor:** All users

**Basic Flow:**

All users Search listings by name of good to find relevant listings with certain keywords in the title of the listing. After the user inputs the keyword(s) they want to search, all active listings that contain the keyword(s) in their title are displayed on the current page.

#### Use Case 3: Search by name of seller

**Actor:** All users

**Basic Flow:**

All users Search listings by seller name to filter listings posted by the same seller. After the user searches for the seller's name, the active listings created by that seller are displayed on the current page.

#### Use Case 4: View listing

**Actor:** All users

**Basic Flow:**

When all users open the marketplace website on their browser, a list of active listings is displayed on the homepage without login required. The listings are sorted by most recently created by default.

#### Use Case 5: Manage account

**Actor:** All users

**Basic Flow:**

All users log into the system with their email and password to manage their account. Using the navigation bar, they open the account management page, where they have the ability to Reset password, Change email, or Delete account.

#### Use Case 6: Reset password

**Actor:** All users

**Basic Flow:**

In the account management page, all users select the reset password option and move to the reset password page. From there, they input their email address, current password, and new password, then confirm the new password and select reset password. After the user sends a change password request, they can log in with their new password.

**Use Case 7: Change email****Actor:** All users**Basic Flow:**

In the account management page, all users select change email and move to the change email page. From there, they input their current email address, password, and new email, then confirm the new email and select change email. After the user sends a change email request, their current email is updated on the account management page.

**Use Case 8: Delete account****Actor:** All users**Basic Flow:**

In the account management page, all users select delete account and move to the delete account page. They input current login credentials with email and password, then select delete account. After the user sends the delete account request, the account and all the order history under the account is deleted, and they are logged out automatically.

**Use Case 9: Create account****Actor:** Standard user**Basic Flow:**

Standard users need to create an account to purchase products in this system. To create an account, the user provides a username, email address, password, and then confirms the password. After the create account button is clicked, the user is able to log into the system with their login credentials.

**Use Case 10: Manage listings****Actor:** Seller**Basic Flow:**

The Seller logs into the system with their email and password to manage a listing. After successfully logging into the system they navigate to the Manage Listing page. Here the Seller is presented with the options to Create listing, Edit listing and Delete listing.

**Use Case 11: Create listing****Actor:** Seller**Basic Flow:**

In the Manage Listing page, the Seller clicks the create listing button to open the listing editor. They provide a title, description of goods, condition, category, location and can Add co-sellers. After the Seller finishes entering all the details for the listing, they click the create button and the listing is displayed on the page.

**Use Case 12: Create fixed price listing****Actor:** Seller**Basic Flow:**

During the process of Create listing, the Seller chooses to create a fixed price listing, which directs them to the Create Fixed Price Listing page. In addition to the base listing details, the Seller also provides a fixed price and stock. After they finish entering all the details for the fixed price listing, they click the create button and the listing is displayed in the system.



**Use Case 13: Create auction listing****Actor:** Seller**Basic Flow:**

During the process of Create listing, the Seller chooses to create an auction listing, which directs them to the Create Auction Listing page. In addition to the base listing details, the Seller also provides a starting price, starting time and duration. After they finish entering all the details for the auction listing, they click the create button and the listing is displayed in the system. If they enter a quantity greater than one, a separate auction is created for each good.

**Use Case 14: Add co-sellers****Actor:** Seller**Basic Flow:**

The Seller clicks the Add Co-seller button and provides the registered email address of another user to add them as a Seller for the listing. Co-sellers have the same permissions as Sellers when managing listings and orders.

**Use Case 15: Edit listing****Actor:** Seller**Basic Flow:**

In the Manage Listing page, the Seller is presented with every listing they have created in the system. To edit a particular listing, they navigate to that listing and select the edit listing option, where they can edit the listing title, description, condition, category, location and Add co-sellers. After the Seller finishes editing the details, they click the update button to update the current listing.

**Use Case 16: Edit fixed price listing****Actor:** Seller**Basic Flow:**

During the process of Edit listing, the Seller selects a fixed price listing they wish to edit. In addition to the base details, they can also edit the fixed price and stock.

**Use Case 17: Edit auction listing****Actor:** Seller**Basic Flow:**

During the process of Edit listing, the Seller selects an auction listing to edit. In addition to the base details, they can also edit the starting price, starting time and duration. Auction listings are only editable if no bids have been placed on the listing.

**Use Case 18: Delete listing****Actor:** Seller**Basic Flow:**

In the Manage Listing page, the Seller identifies a listing which they have decided to delete from the system. The Seller navigates to the listing which presents the Seller with a button they click to remove the listing. The seller confirms the action by responding to the automated message from the system. After the delete listing action is completed, the listing is removed from the system.

**Use Case 19: Manage orders****Actor:** Seller**Basic Flow:**

The Seller logs into the system with their email and password to manage an order. After successfully logging into the system the Seller navigates to the Manage Orders page. Here the Seller is presented with all orders for goods they have listed. The Seller has the option to Modify order, Confirm order, and Cancel order.

**Use Case 20: Modify order****Actor:** Seller**Basic Flow:**

In the Manage Orders page, the Seller selects an order they wish to modify. From here, they can decrease the number of goods in the Order. After they confirm the change, the order details are updated in the system.

**Use Case 21: Confirm order****Actor:** Seller**Basic Flow:**

In the Manage Orders page, the Seller identifies an order they wish to confirm. The Seller navigates to that order and confirms it, after which the order is marked as complete and cannot be modified by any user.

**Use Case 22: Cancel order****Actor:** Seller, Buyer**Basic Flow:**

In the Manage Orders page, the Seller or Buyer identifies an order they wish to cancel. Once the order is selected, they are presented with the option to cancel the order. They confirm this action by responding to the automated message from the system, and the selected order is marked as cancelled.

**Use Case 23: Manage orders****Actor:** Buyer**Basic Flow:**

The Buyer logs into the system with their email and password to manage an order. After successfully logging into the system the Buyer navigates to the Purchase History page. Here the Buyer is presented with all orders they have made in the system, the Buyer then has the option to Cancel order and Modify order.

**Use Case 24: Modify order****Actor:** Buyer**Basic Flow:**

In the Purchase history page, the Buyer selects an order they wish to modify. From here, the Buyer increases or decreases the number of goods placed in the order and confirms the change.

**Use Case 25:** Bid on auction**Actor:** Buyer**Basic Flow:**

The Buyer logs into the system with their email and password to bid on an auction. After they log in, they browse through the listings and select a good they wish to bid on. Once the item is selected, they are directed to the listing details page where they enter a bidding amount which is greater than either the item's starting price, or the current highest bid if there are existing bids.

**Use Case 26:** Checkout winning auction**Actor:** Buyer**Basic Flow:**

Once an auction has finished, the Buyer with the winning navigates to the listing where they Enter checkout details to complete the purchase of the good.

**Use Case 27:** Enter checkout details**Actor:** Buyer**Basic Flow:**

The Buyer provides the first name, last name, address, and phone number of the receiver to complete the checkout process. After the checkout is completed, the order is created in the system.

**Use Case 28:** Purchase fixed price good**Actor:** Buyer**Basic Flow:**

The Buyer logs into the system with their email and password to purchase a fixed priced good. After they log in, they browse through the fixed price listings in search of what they want to purchase. Once they find a good they would like to purchase, they select the listing, click the Buy Now button and Enter checkout details to complete the purchase.

**Use Case 29:** View all users**Actor:** Administrator**Basic Flow:**

The Administrator logs into the system with their email and password to view all users of the system. From the homepage, they use the navigation bar to access the View all Users pages, where they are presented with a list of all registered users of the system.

**Use Case 30:** View all orders**Actor:** Administrator**Basic Flow:**

The Administrator logs into the system with their email and password to view all orders present in the system. From the homepage, they use the navigation bar to access the View all Orders page, where they are presented with a list of all orders in the system and their corresponding statuses.

**Use Case 31:** Remove listing**Actor:** Administrator**Basic Flow:**

After the Administrator logs into the system, they are met with the homepage which contains all active listings. After finding an inappropriate listing, the Administrator navigates to the listing and clicks the Remove Listing button. They confirm the action by responding to the automated message from the system, after which, the listing is removed from the system.

## 4. Domain Model

---

### 4.1. Domain Model Description

A summary of the system entities, attributes, and business rules, based on the Application Domain of the Marketplace System, is shown below:

- The **Admin** *views all Users* and also *views all Orders*;
- The **Admin** and all **Users** *provide Account Details*;
- The **Admin** *manages* all **Fixed Price Listings** and **Auction Listings**;
- For **Fixed Price Listings** and **Auction Listings**, one or more **Users** are responsible for *selling* the good(s);
- A **Bid** can be *placed by* a **User**;
- An **Order** is *placed by* a *buying User*;
- An **Order** *contains* either a **Fixed Price Listing** or an **Auction Listing**;
- **Fixed Price Listings** can have multiple of a sale item in stock;
- **Checkout Details** are *provided for* an **Order**, and can be shared amongst multiple **Orders**;
- An **Order** *has* a current Status, which can be one of the following:
  - **Pending**,
  - **Complete**, or
  - **Cancelled**;
- **Auction Listings** have a starting price, start time and an end time for which the auction runs;
- **Auction Listings** *track* **Bids** placed on them;
- **Fixed Price Listings** and **Auction Listings** *are described by* a set of **Listing Details**;
- **Listing Details** contain the sale item's Condition, *declared as* **New** or **Used**; and
- **Listing Details** determines what Category the product *belongs to*, which can be one of:
  - **Electronics**,
  - **Home and Garden**,
  - **Clothing and Accessories**,
  - **Entertainment**,
  - **Health and Beauty**,
  - **Sports**,
  - **Toys**,
  - **Pets**, or
  - **Other**.

**Entities** of the system are stated in bold text; key entity attributes are stated in underlined text; important *associations* between entities are stated in italicised text.

## 4.2. Domain Model Diagram

