

COMP 354

Requirements for the project 354TheStars

Group 5

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Table 1: Group

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Table 2: Revision history

Version	Date	Changes
1.0	29th September 2018	completed requirements

Contents

1	Document Purpose	4
2	Project description	4
2.1	System Context	4

2.2	Project Scope	5
2.3	Business Goals	5
2.4	Personas	5
	Admin	5
	Buyer	5
	Guest User	5
	Seller	6
	PayPal	6
2.5	Functional Requirements	6
3	User-Stories	7
4	Glossary of Domain Concepts	10
5	Use Cases	11
5.1	Selling	11
5.2	Buying	14
6	Reference	17

List of Figures

1	System Context	5
2	Use Case Diagram 1: Online Shopping Website - Selling	11
3	Use Case Diagram 1: Online Shopping Website - Buying	14

List of Tables

1	Group	1
2	Revision history	1
3	Glossary of Domain Concepts	10
4	Use Case 1 - List items	12
5	Use Case 2 - Sell items	13
6	Use Case 3 - Purchase	15
7	Use Case 4 - Review	16

1 Document Purpose

The purpose of this document is to define requirements for the web application 354TheStars. This document may thus be used to orient the development of the application. It seeks to understand the requirements of the problem, formulate the necessary functions and properties needed to answer this problem and its requirements, and then test these functions against the requirements. Hence, it may be used by our users to specify the problem and its requirements, by the developers to understand what functions their system must implement, and what to test their system against. The primary audience for this document are the stakeholders of the project and the development team of the system, as well the project testers for fine-tuning their testing strategy.

2 Project description

2.1 System Context

Our system will mainly involve the user interacting with a web application interface. The user shall create an account to be able to buy or sell products, however user does not require to have an account for browsing the website. The user information will be stored in a remote database server. Users will not be able to create an account or login by using any social media platforms. It will discussed in more details in future version of this documentation.

Figure 1: System Context

2.2 Project Scope

354TheStars is planning to provide a worldwide platform, where various size of companies as well as individuals can sell or buy products. All of the available products shall be eligible for sale.

2.3 Business Goals

- **Compete with existing solutions**

We are not the sole developers of e-commerce applications by far. As such, if we want to attract users to our platform, we must be able to compete on the same playing field as these current platforms. It is because of that reason, we must, at the very least, provide a secure, easy to use, and performant platform.

- **Reduce service fee** We are aiming to empower businesses, and in order to do so, it is necessary to provide a great service and a competitive service fee.

2.4 Personas

Admin

The website administrator maintains the site and has access to manage all the products and users on 354TheStars. As a representative of the site, their duties include work with the programming that operates the platform, as well as making sure everything is running smoothly and according to the rules and code of conduct. This is the only role not operated or embodied by customers.

Buyer

Buyers represent one role of 354TheStars' registered users. Whether they are an individual or a business, they can search, filter and purchase items from sellers, which will be delivered to their preferred address. Moreover, they can also review the products they have acquired from the site and even provide pictures to depict their feelings and the state of the product received. Finally, buyers will be providing 354TheStars with revenue through a commission acquired from each purchase.

Guest User

Guest users are individuals or businesses that are casually visiting 354TheStars, or future buyers or sellers that have not yet registered themselves on the site. They have the same privileges as registered users (buyers and sellers) but making purchases or sales; therefore, for a guest user to complete an order or to start listing products, they must create an account.

Seller

Sellers represent the other possible role of our registered users. Whether they are an individual or a business, they can list products and provide a description, images, price and modify their available stock for sale. Lastly, sellers can also reply to reviews from buyers to better address their customers.

PayPal

PayPal is the only actor that is not embodied by a human. PayPal Holdings Inc. is an American company that operates a worldwide online payment platform. 354TheStars will be using PayPal's services to process money transactions needed for the purchase and sale of items on the site. They have no say in the activities or the decision-making process to maintain and manage 354TheStars, meaning the only relationship with the site will be of processing payments. Finally, this takes place by redirecting buyers to PayPal's website for them to input their payment and billing information to be processed.

2.5 Functional Requirements

This section will cover the functional requirements associated with the 354TheStars web application. These are the software capabilities that must be present in order for the user to carry out the services provided by the app or to execute the use cases.

- **Sell:** The system allows a registered user to add product and its details (price, description, image) to be able to sell the product.
- **Buy:** The system allows a registered user to buy a product. Also the buyer can review the purchased product after fifteen days.
- **Search:** The system allows both a registered user and guest user to browse and search through all the products.
- **Admin panel:** The admin panel allows the admin to manage, view, and edit user accounts and their information such as (username, email, address, phone number). The panel also allows the admin to manage, view and edit all the products in the website.
- **Purchase process:** The system provides a secure and safe online payment system for buyers. They can use their Paypal account to buy products from the website.

3 User-Stories

User-Story 1 (Admin)

As an admin:

- I should be able to create, manage and delete user accounts.
- I should have the options to view personal information of the users including:
 - Username
 - Email
 - Address
 - Phone Number
- I should be able to view and manage every single product that is posted in the website.
- The application should provide quality user experience when accessing and viewing account information of a user.

User-Story 2 (Buyer)

As a buyer:

- I should be able to sign up using:
 - Username
 - Email
 - Address
 - Phone Number
 - Password
- I should be able to edit my personal information.
- I should be able to see a product's detail including:
 - Image
 - Description
 - Price
 - Reviews
- I should have the ability to search for a product by:
 - Name
 - Category
- I should be able to filter and sort the search results based on:
 - Price

- Location
 - Reviews
- I should be able to pay with my PayPal account.
- I should get a confirmation email showing a successful purchase.
- I should be able to add up to three shipping addresses.
- I should be able to add a review to a product after fifteen days of purchasing the product.
- I should be able to see my orders history.

User-Story 3 (Seller)

As a seller:

- I should be able to sign up using:
 - Email
 - Username
 - Address
 - Phone number
 - Password
- I should be able to edit my personal info including:
 - Email
 - Address
 - Phone number
 - Password
- I should be able to add a product to sell.
- I should be able to edit a product's info including:
 - Price
 - Image
 - Description
 - Stock's count
- I should have the same ability as a buyer.

User-Story 4 (Guest User)

As a guest user:

- I should be able to browse through products.
- I should be able to search for a product by using:
 - Name
 - Category
- I should be able to filter and sort the search results based on:
 - Price
 - Location
 - Reviews
- I should be able to see a product's detail including:
 - Image
 - Description
 - Price
 - Reviews

4 Glossary of Domain Concepts

Table 3: Glossary of Domain Concepts

Expression	Definition
User	The person that is using the application and the main provider of requests to the system.
User Account	A data object containing user information. It also contains the various bank accounts that a user may have linked to the system.
Bank Account	A data object containing transactions linked with a specific bank account in a bank institution. One user account may have more than one bank accounts.
Transaction	Any kind of money exchange associated with a bank account.
Transfer	A type of transaction that occurs between two parties.
Deposit	A type of transaction where the owner puts money in his own bank account.
Withdrawal	A type of transaction where the owner of the bank account removes money from his balance.
Database	A local or online container which holds data in an organised, efficient manner.
Server	a computer that is accessible on a network, on which a database and/or system may be hosted. The bank institutions' databases will be hosted on here.
Object-Oriented Programming	A programming paradigm which separates entities into objects, and uses the concept of inheritance of properties, polymorphism of objects, encapsulation of objects. We use this paradigm for its maintainability and structural benefits.
MVC - Model-View-Controller Architecture	An architectural pattern which strictly separates components into the model (manages the data and logic), the view (output of the model), and the controller (handling input and passing it to the model or view).
Interface	A component of a system by which other entities (be it humans or other systems) may engage in an exchange of data with the system in question.
API - Application Programming Interface	A protocol or set of functions which serve as a method of communication to a software system. It is a type of interface, and the one by which our system will communicate with the banking institutions' databases.
DAO - Data access object	An object that provides an abstract interface to some type of database or other persistence mechanism.

5 Use Cases

5.1 Selling

The use case diagram below represents the Selling functionality of the Online Shopping Website. A detailed description of each use case follows.

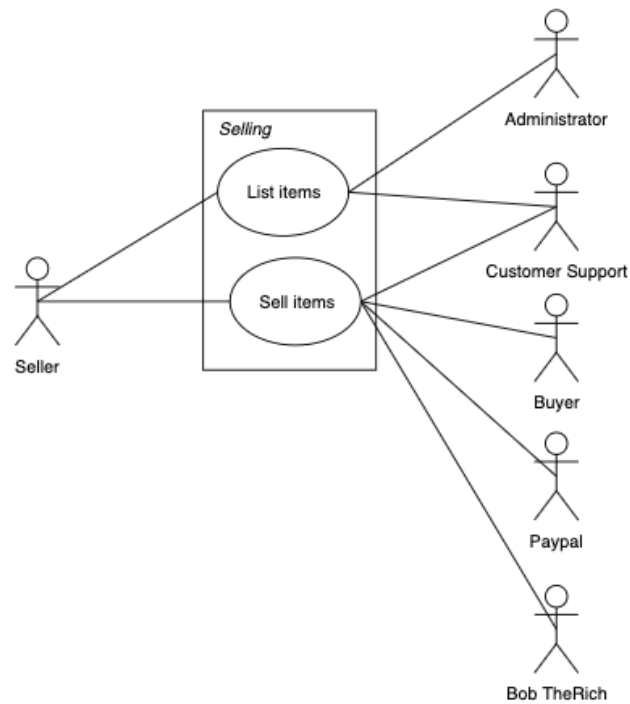


Figure 2: Use Case Diagram 1: Online Shopping Website - Selling

Table 4: Use Case 1 - List items

Action	List items
Case ID	UC01
Actors	Seller, Administrator, Customer Support
Summary	Seller completes all the information necessary to list an item and has the option to edit or delete it. The Administrator can manage all the listings information. In case of any issues, the Customer Support can be contacted.
Pre-Conditions	The user is registered as a legitimate seller.
Data	Product photo, product description, price, stock count.
Stimulus	Seller pressed on Add Listing/Edit Listing/Delete Listing Button
Response	<ul style="list-style-type: none"> • Add Listing/Edit Listing/Delete Listing dialogue appears. • Seller fills out all the information. • Listing added/edited/deleted successfully.
Exceptions	<p>(a) The required information is not filled out.</p> <p>(b) The description is over the character limit (100 characters).</p>
Priority	High
Open Issues	<p>(a) Should the Seller be able to preview the listing?</p> <p>(b) What happens if the item is illegal?</p> <p>(c) How do we check the quality of the photo?</p> <p>(d) How do we check the quality of the image?</p> <p>(e) How do we check if the seller is legitimate?</p>

Table 5: Use Case 2 - Sell items

Action	Sell items
Case ID	UC02
Actors	Seller, Buyer, Paypal, Bob TheRich, Customer Support
Summary	Seller accepts payment for the item from Buyer and pays Bob TheRich the 8% of the sale fee. The Seller can allow or disallow returns and set the time limit for returns. The Seller and Bob TheRich can access the sales history. In case of any issues, the Customer Support can be contacted.
Pre-Conditions	Seller, Buyer, and Bob TheRich must have a valid Paypal account.
Data	Paypal account information, sales data, returns option, time limit for returns, 8% fee, shipped items
Stimulus	Buyer paid for item(s)
Response	<ul style="list-style-type: none"> • Paypal transfers money from the Buyer account to the Seller Account and sends a confirmation. • Seller receives a sale notification by email. • The sale appears in the Seller's sales history. • Bob TheRich invoices the Seller for 8 • Seller pays Bob TheRich through Paypal. • Seller marks item as shipped.
Exceptions	(a) Confirmation from Paypal not received.
Priority	High
Open Issues	<p>(a) Should refunds be allowed? If yes, how should they be handled?</p> <p>(b) What happens if the sale appears in the sales history but not in the shipped items history after a predetermined amount of time?</p>

5.2 Buying

The use case diagram below represents the Buying functionality of the Online Shopping Website. A detailed description of each use case follows.

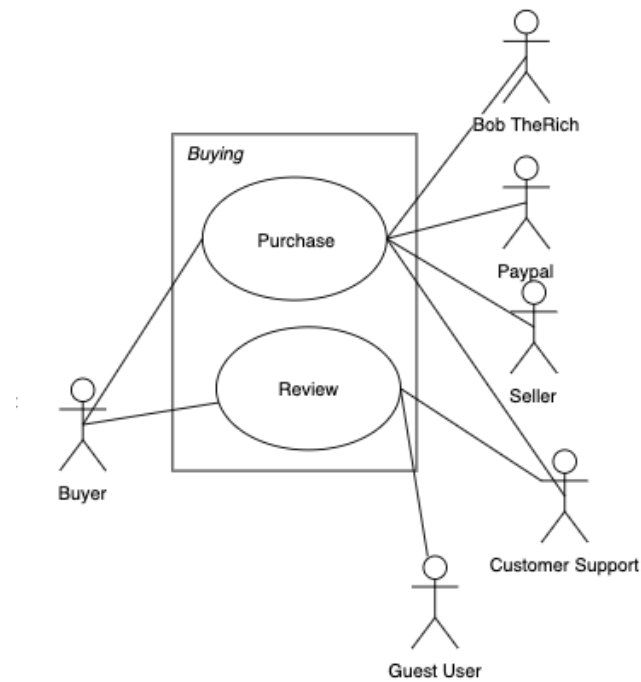


Figure 3: Use Case Diagram 1: Online Shopping Website - Buying

Table 6: Use Case 3 - Purchase

Action	Purchase
Case ID	UC03
Actors	Buyer, Seller, Paypal, Bob TheRich, Customer Support
Summary	The Buyer views the shopping cart, has the option to modify it, and pays for it. In case of any issues, the Customer Support can be contacted.
Pre-Conditions	<ul style="list-style-type: none"> • Buyer is a registered user. • Buyer has a valid Paypal account. • Seller contact is hidden.
Data	Purchase photo, purchase description, purchase quantity, purchase price per item, total purchase price, taxes, shipping fee, shipping address, Paypal account, receipt (Seller information, Buyer information, purchase date, purchase details, purchase price, taxes)
Stimulus	Buyer presses the Checkout Button.
Response	<ul style="list-style-type: none"> • Buyer views the shopping cart information and can modify it. • Buyer chooses the shipping option (standard or express). • Buyer chooses the shipping address. • Buyer pays the Seller for the purchase through Paypal. • Buyer views the confirmation screen. • Buyer receives a confirmation and receipt by email. • Order added to the purchase history.
Exceptions	<ul style="list-style-type: none"> (a) Any of the required information is missing or incorrect (b) Buyer exceeded the time limit to complete purchase (c) Buyer abandons the cart (d) Buyer didn't receive a confirmation screen
Priority	High
Open Issues	<ul style="list-style-type: none"> (a) What happens if the Buyer isn't allowed to purchase the product legally?

Table 7: Use Case 4 - Review

Action	Review
Case ID	UC04
Actors	Buyer, Guest User
Summary	Buyer leaves a review for a product previously purchased. In case of any issues, the Customer Support can be contacted.
Pre-Conditions	15 days must have passed since the Buyer's purchase of the product being reviewed.
Data	Review text, review photo, days since purchase, Buyer's username, rating (out of 5 stars)
Stimulus	Buyer clicks on the Add Review button
Response	<ul style="list-style-type: none"> • Buyer rates the product • Buyer adds review text • Buyer adds review photos (optional) • Buyer posts the review • Review appears on the product page for any Guest User to view
Exceptions	<ul style="list-style-type: none"> (a) 15 days haven't passed since the purchase (b) Buyer posted more than 5 photos per review (c) Review over the character limit (400 characters) (d) Any of the required information is missing
Priority	Medium
Open Issues	<ul style="list-style-type: none"> (a) Should the Buyer be able to preview the review? (b) How do we handle offensive reviews?

6 Reference

- User information: As our user and use-cases was based on feedback provided by our developers, our references lie mainly within our own team.
- Craig Larman - Applying UML and Patterns
- Greg Butler's course COMP 354 content
- [MIT Curricular Information System Software Requirements Document](#)
- [Carnegie Mellon Business Goals](#)
- [Use-Case: Oracle](#)