
Software Requirements Specification

for

E-commerce platform

Version 1.0

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Introduction to Software Engineering

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1. Introduction

1.1 Purpose

The purpose of this document is to present a detailed description of the E-commerce platform created by members of Group 13 for the CSE 6214 class. It will explain the purpose and features of the system, the interfaces of the system, what the system will do and the constraints under which it must operate. During the entire project, this document will serve as reference point for all activities related to the project.

1.2 Document Conventions

This document uses Times New Roman font throughout the document. Headings are bold, size 18, and sub-headings use bold, size 14. All other parts of the document not mentioned above are size 12 font. Line spacing is 1.15 point. Standard one-inch margins are maintained throughout the document.

1.3 Intended Audience and Reading

This document is intended for teachers, students, and other faculty of CSE 4214. Others interested in the specifics of the e-commerce platform are welcome as well. Our team suggests anyone interested in the matter read this document in a sequential order.

1.4 Product Scope

This e-commerce platform is a web application that allows users of different roles to login in with their credentials to search, compare, buy, and return different types of products from different sellers. Sellers can add, sell, and receive payments for their available products, while admin can approve/block new user accounts and products, and oversee different user actions.

1.5 References

- Django
 - <https://www.djangoproject.com/>
- Python
 - <https://www.python.org/>
- MySQL
 - <https://www.mysql.com/>

2. Overall Description

2.1 Product Perspective

This software being built is a new self-contained product. Subsequent versions of this application will be created based on specific requirements provided by the customer (TA).

2.2 Product Functions

- Users with different roles (buyer, seller, administrator) should be able to log in to their accounts, perform various actions, and log out.
- A buyer should be able to search, compare, buy, and return different types of products from different sellers.
- A seller should be able to add, sell, and receive payments for their available products.
- An administrator should be able to approve or block new user accounts and products and oversee different user actions.

2.3 User Classes and Characteristics

All users are assumed to have enough proficiency with the basic technology needed to engage with the site, including a mouse and keyboard, monitor, computer, and the Internet.

Guest Buyer – This class of user will use the site to search for a specific product, to compare products, to browse products, and to buy products. We expect that this type of user will fall into one of three categories: new user, irregular user, or user with privacy concerns. New users are considered potential registered users, and their initial experiences with the site are a high priority. Otherwise, the satisfaction of this group is of low priority.

Registered Buyer – This class of user will use the site to search, compare, browse, and buy products, as well as leave reviews. They are expected to use the site more frequently, to buy more products at a time, and to buy at regular intervals. Quality-of-life features, such as fast checkout, will be important to maintaining the loyalty and happiness of this group. Their satisfaction is a high priority.

Registered Seller – This class of user will use the site to advertise and sell their product(s). This user should be able to add new products to the site, along with any details such as price and description. They should also be able to receive payments, to edit their product information, and to remove products. This class of user is expected to be “business minded.” Their satisfaction is a high priority.

Administrator – This class of user will engage primarily with the “backend” of the platform and will be responsible for running and managing the site. This user is expected to have much more technical proficiency than the other users. This user will approve/block new user accounts, will approve/block new products, and will generally monitor the site and user actions. The satisfaction of this group is a high priority.

2.4 Operating Environment

This E-commerce platform will operate as a website supported by common browsers such as Edge, Firefox, Chrome, and Safari. The backend of the software will need to operate within a server-like environment, *i.e.*, on a mainframe computer running a server OS. The frontend of the software will need to operate on an average laptop and desktop computer running a common OS such as Windows.

The frontend of this application will be created primarily using HTML, CSS, and JavaScript.. The backend will use the Python framework Django and phpMyAdmin. The database to hold all information or data will be handled by MySQL.

2.5 Design and Implementation Constraints

Design:

- Frontend Language: HTML, CSS, and JavaScript
- Backend Languages: Python (with Django) and PHP (with phpMyAdmin)
- Database: MySQL

Constraints:

- Application must run on Edge, Firefox, Chrome, and Safari.
- User must login with created and validated login credentials.
- Users can only purchase items that have only been listed on the platform.

3. System Features

3.1 System Feature 1 – Login based on role

3.1.1 Description and Priority

At the login page, new users will have the option to sign up for an account based on role. The roles available are Buyer, Seller, and Admin. After a user creates an account based on role, they will be able to sign in the next time they visit the

application using the credentials they created. This feature is a high priority for this application.

3.1.2 Stimulus/Response Sequences

Stimulus	Response
New user clicks sign up	Application opens a page that new user inputs information to sign up based on role
Returning user click logon	Application allows user to input logon credentials and grants them access after authentication
User clicks logout	Application must close page and end user session

3.1.3 Functional Requirements

REQ-1: Application should display logon page where a new user can create an account, or a returning user can login using registered credentials.

REQ-2: Application should end user session when the user clicks logout.

3.2 System Feature 2 – Buyer Activities

3.2.1 Description and Priority

At the buyer page, the buyer should be able to search for items, compare, buy, and return items. This feature is a high priority for this application.

3.2.2 Stimulus/Response Sequences

Stimulus	Response
Buyer should be able to search for items based on some requirement.	Application should display items based on specified requirements by buyer
Buyer should be able to compare items based on some requirement.	Application should display compared items based on specified requirements by buyer
Buyer should be able to buy items	Application should process buy request of buyer
Buyer should be able to return items	Application should process buy request of buyer

3.2.3 Functional Requirements

REQ-1: Application should display items based on specified requirements by buyer.

REQ-2: Application should display compared items based on specified requirements by buyer.

REQ-3: Application should process buy request of buyer.

REQ-4: Application should process buy request of buyer.

3.3 System Feature 3 – Seller Activities

3.3.1 Description and Priority

At the seller page, the seller should be able to add, sell and receive payments for items sold. This feature is a high priority for this application.

3.3.2 Stimulus/Response Sequences

Stimulus	Response
Seller should be able to list items	Application should display items listed by seller for sale
Seller should be able to add items to listed items for sale	Application should allow seller add items to already listed items for sale
Seller should be able to receive payments for items sold	Application should charge buyers for items bought and credit seller account with money received.

3.3.3 Functional Requirements

REQ-1: Application should display items listed by seller for sale.

REQ-2: Application should allow seller add items to already listed items for sale.

REQ-3: Application should charge buyers for items bought and credit seller account with money received.

3.4 System Feature 3 – Admin Activities

3.4.1 Description and Priority

The admin should be able to approve/block new user accounts and products and oversee different user actions. This feature is a high priority for this application.

3.4.2 Stimulus/Response Sequences

Stimulus	Response
Admin should approve/block new user accounts and products	Application should display a page and provide admin ability to approve/block new user accounts and products

3.4.3 Functional Requirements

REQ-1: Application should display a page and provide admin ability to approve/block new user accounts and products.

4. Other Nonfunctional Requirements

4.1 Performance Requirements

As an e-commerce platform, the software needs to be designed with responsiveness and robustness in mind; users should not have to wait longer than several seconds to see search results, for payments to be processed, to see or post reviews, to login, to add products to the site, *etc.* This is a priority for the software. Response times should be as fast as possible, preferably less than 1.0 s. Anything over 10 s is considered unacceptable and should be an irregular occurrence.

The platform also needs to be able to operate when there is increased traffic to the site. Additionally, the platform should be sufficiently scalable to meet a growing number of registered users. This means the database should be able to handle a large and increasing amount of user data.

4.2 Safety Requirements

A system for reporting products or sellers should be implemented. This reporting system should include several options that can be processed automatically, such as “unsafe, unreliable, inaccurate, fraudulent, *etc.*”, as well the option to leave a comment. This reporting system should also incorporate the ability to report incomplete deliveries, offensive/defamatory comments and reviews, or general customer feedback.

4.3 Security Requirements

Standard Internet security protocols should be implemented, including the use of password-protected accounts and SSL. The ISO/IEC 27001 standard will be used as a guide. Best practices concerning passwords, such as minimum length and character usage, should be enforced. Multi-factor authentication (MFA) is desired but is not a priority for Version 1.0.

The use of SSL and similar security measures are a must for the payment system to be secure and trustworthy. On the backend, standard security measures, such as encryption and regularly scheduled backups, should be implemented to maintain the security and privacy of user information stored in the database.

4.4 Software Quality Attributes

The software should exhibit the following attributes: ease of use, reliability, security, and robustness. These qualities are a top priority.

The user interface (UI) needs to be easy to navigate and easy to use in order to facilitate customer satisfaction and continued use of the site. The UI should be intuitive and feel “natural” to users. Aesthetic aspects such as colors, sounds, *etc.* should not detract from user experience. This is a top priority, as the user experience is central to the success of the site.

The site needs to be reliable for both buys and sellers: product features should work as intended and as described; feature names and icons should be intuitive and provide functions that would be expected by an average user.

Since the primary focus of the site is exchange of goods for payment, security must be another top attribute along with robustness. Site downtime and security risks should be minimized to the greatest extent possible. This attribute should conform to the security requirements of Section 4.3.

A secondary priority is flexibility. Since new features are expected to be added in the future, and old features are expected to be reworked, the software must be designed with flexibility and modularity in mind.