Software Requirements Specification

for

MW

Version 2.0 approved

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# Introduction

## Purpose

This document will provide a detailed description of the e-commerce platform MW Version 1.0. The sections of this document will contain definitions and explanations of this system and its features and functionality, including its functional and non-functional requirements. This Software Specification Requirements (SRS) document will only cover the functionalities of systems the system in MW Version 1. Further updates to the platform will be documented in future SRS documents.

## Document Conventions

This document follows a hierarchical numerical format. Section headings are structured using a numerical notation system. Main topics are denoted with a whole number (e.g., “x.”), and subtopics use an extended notation (e.g., “x.x”). The first number takes the value of its parent section, and the second number indicates the subtopic’s sequential position. The levels of hierarchy are additionally represented with font size. Large font size indicates main topics while a smaller font size indicates a sub-topic. Specific functional requirements are denoted “3.x.x.x” in section 3.

Appendices are at the end of the document and have no numerical notation. The Appendices are denoted alphabetically and are the same font size as the main headers in this document.

## Intended Audience and Reading

This document is intended for the full-stack developer of the e-commerce platform MW, the instructor and teaching assistant for the Mississippi State University course CSE 6214: Introduction to Software Engineering, and those that are interested in the requirements, scope, and functionality of the MW platform. For those familiar with the scope of the product, such as developers, sections 3-5 will be of interest. Sections 3-5 are System Features, Other Non-Functional Requirements, and Other Requirements, respectively. Sections 1 and 2, Introduction and Overall Description, are recommended to begin with for those unfamiliar with the platform.

## Product Scope

The MW platform is an e-commerce website. The platform will give the sellers a place to list, track, and sell their products. Customers will be able to purchase and view all the items listed by the vendors/sellers. The website will also have administrators that will watch over all actions done by the sellers and buyers to ensure safety throughout the platform. The admins have authority to approve/decline new users and product listings, along with rights to revoke access from sellers or users. MW will take a small percentage of the seller's revenue in return for giving businesses/sellers an outlet to sell their products.

## References

[1] Django Software Foundation. *Django: The web framework for perfectionists with deadlines* [Online]*.*  Available: <https://www.djangoproject.com/>

[2] Python Software Foundation. *Welcome to Python* [Online]. Available: <https://www.python.org/>

# Overall Description

## Product Perspective

MW is a new self-contained e-commerce platform. This platform is designed to fulfill the requirements of the Mississippi State University CSE 6214 course. The MW platform is to be a simplistic version of the e-commerce portion of Amazon. This product will not be used for commercial or monetary purposes. The MW platform is intended for use within Mississippi State University to fulfill the criteria to pass the CSE 6214 course.

## Product Functions

* Users can create an account with their email address.
* Users can log in and out of their accounts using their login credentials.
* Users are classified as a buyer, seller, or admin.
* Buyers can search for products.
* Buyers can compare products through sorting and filtering,
* Buyers can purchase products.
* Buyers can return products they previously purchased.
* Sellers can list products to sell.
* Sellers can sell and receive payment for their products.
* Admins can approve/block new accounts and products.
* Admins can oversee the actions of the buyer and sellers.

## User Classes and Characteristics

There are three user classes for the MW platform. All the user classes below must have a Username and Password to access MW. Incoming users will have to create their own Username and Password with their email address before having access to the platform. The three classes below are under the assumption that the user already has an account:

1. Buyer- ability to search, compare, buy, and return products.
2. Seller- ability to list, sell, and receive payments for products.
3. Admin- ability to approve/block new accounts and products and oversee the actions of buyers and sellers.

All mentioned user classes are essential to the functionality of this platform. No user class is more important than another.

## Operating Environment

The software will be running on [TBD-01] webserver utilizing Python 3.12, Django, and SQLite (Subject to Change). This software will be available through web browsers such as Google Chrome and Microsoft Edge. It is assumed the desktop operating system hosting the web browser is Microsoft Windows.

## Design and Implementation Constraints

Design:

* Front End: HTML and CSS
* Back End: Python 3.12 with Django framework
* Database: SQLite (Subject to Change)
* Server: AWS and Heroku

Constraints:

* Due to this software being for class requirements, no actions that require monetary spendings shall be taken.
* The platform must run on at least web browsers Google Chrome and Microsoft Edge.

# System Features

## User Registration and Authentication

3.1.1 Description and Priority

This feature will allow for account creation and account access.

Priority: High

3.1.2 Stimulus/Response Sequences

* **Stimulus**: A new user tries to log into the system.

**Response**: The system prompts the user to make a new account using an email.

* **Stimulus**: An account user enters the correct username and password to log in.

**Response**: The system uses the username and password entered to grant the user access to their account.

* **Stimulus:** An account user enters the incorrect username and/or password to log in.

**Response:** The system prompts the user to try again.

3.1.3 Functional Requirements

3.1.3.1 The system shall give fields for email, username, and password when creating a new account.

3.1.3.2 The system shall raise and error if emails and usernames are not unique to the system upon user registration.

3.1.3.3 The system shall only make accounts with usernames and passwords that have not been used in the system.

3.1.3.4 The system shall have a login page that requires the input of a username and password.

3.1.3.5 The system shall raise an error if a user inputs a username and password that do not match.

3.1.3.6 The system shall raise an error if the user inputs a username that does not exist in the system.

3.1.3.7The system shall notify the admin when a new account is created.

## Product Search

3.2.1 Description and Priority

This feature will allow users of the type buyer to search for products.

Priority: High

3.2.2 Stimulus/Response Sequences

* **Stimulus**: A buyer types an existing item name into the search bar.

**Response**: The system shows the item with the exact name.

* **Stimulus:** A buyer types in a word into the search bar.

**Response:** The system returns the products that fall within the searched word.

3.2.3 Functional Requirements

3.2.3.1 The system shall have a search bar for buyers to search for specific products.

3.2.3.2 The system shall return products that contain the searched word in the product name.

3.2.3.3 The system shall return a product if the searched word matches the product name.

3.2.3.4 The system shall return “No results” if no products match or contain the keyword.

3.2.3.5 The system shall return all products that fall in the searched category if a category is searched.

3.2.3.6 The system shall only display items that have a quantity of 1 or more.

## Product Filtering and Sorting

3.3.1 Description and Priority

This feature will allow users of the type buyer to filter through products so they can compare similar products.

Priority: High

3.3.2 Stimulus/Response Sequences

* **Stimulus**: A buyer selects (a) filtering option(s) and clicks ‘ok.’

**Response**: The system shows the products that fall within the filter(s).

* **Stimulus:** A buyer selects a sort option.

**Response:** The products are rearranged based on the sort option selected.

3.3.3 Functional Requirements

3.3.3.1 The system shall allow buyers to filter through products.

3.3.3.2 The system shall contain filters for different categories and price ranges.

3.3.3.3 The system shall return a list of products that fall within the selected filter options when the user selects ‘ok’.

3.3.3.4 The system shall return “No results” if no products that currently fall under the selected filters.

3.3.3.5The system shall give the option for buyers to sort products from “Highest to Lowest Price” and “Lowest to Highest Price.”

3.3.3.6 The system shall arrange products from “Highest to Lowest Price” if the user selects it.

3.3.3.7 The system shall arrange products from “Lowest to Highest Price” if the user selects it.

## Purchasing

3.4.1 Description and Priority

This feature will allow users of the type buyer to purchase products.

Priority: High

3.4.2 Stimulus/Response Sequences

* **Stimulus**: A buyer selects “Check Out”.

**Response**: The system gives the buyer fields to fill out.

* **Stimulus:** A buyer selects “Complete Order.”

**Response:** The system submits the order and notifies the seller.

3.4.3 Functional Requirements

3.4.3.1 The system shall require the buyer to input their Name, Street Address, City, State, Country, Zip code, Phone Number, Email Address, and Payment Information when the user clicks “Check Out.”

3.4.3.2 The system shall check the phone number field to ensure it is a 10-digit number.

3.4.3.3 The system shall not allow the user to click “Complete Order” until all fields are filled with accurate information.

3.4.3.4 The system shall notify the seller of the purchased product after the buyer clicks “Complete Order.”

3.4.3.5 The system shall not allow the user to click “Check out” if there are no items in the cart/selected to purchase.

3.4.3.6 The system shall require the seller to input the tracking information of the product once the package is shipped.

3.4.3.7 The system shall notify the buyer their package is shipped and give the buyer the tracking number for the package once the seller submits the information.

## Returns

3.5.1 Description and Priority

This feature will allow users of the type buyer to return products they have previously purchased.

Priority: Medium

3.5.2 Stimulus/Response Sequences

* **Stimulus**: A buyer selects “Request a Return.”

**Response**: The system gives the buyer fields to fill out regarding the product.

* **Stimulus:** A seller receives a “Return Request.”

**Response:** The system allows the seller to read over the request then accept or decline.

3.5.3 Functional Requirements

3.5.3.1 The system shall have a “Request a Return” option on the past purchases page.

3.5.3.2 The system shall have the following fields on the request a return page: Name, Date, Product Name, Condition of Product, Price, and Reason for Return.

3.5.3.3 The system shall not allow the buyer to submit the request until all fields are filled out.

3.5.3.4 The system shall send the “Return Request” to the seller once the buyer submits the form.

3.5.3.5 The system shall allow the seller to read over the request and accept or decline the request.

## Listing

3.6.1 Description and Priority

This feature will allow sellers to list products to MW to sell.

Priority: High

3.6.2 Stimulus/Response Sequences

* **Stimulus**: A seller clicks “Add New Listing.”

**Response**: The system outputs a form for the seller to fill out.

* **Stimulus:** A seller clicks “Submit New Listing.”

**Response:** The system sends the form to the admin.

* **Stimulus:** An admin approves a “New listing Form.”

**Response:** The system posts the product to the website and notifies the seller the product has been listed.

3.6.3 Functional Requirements

3.6.3.1 The system shall have a “Add New Listing” option for sellers.

3.6.3.2 The system shall have the following fields on the “New Listing Form”: Product Name, Product Description, Picture(s) of the product, Quantity, Categories, Price, Date, and Sellers Username.

3.6.3.3 The system shall not allow the seller to submit the request until all fields are filled out.

3.6.3.4 The system shall send the “New Listing Form” to the seller once the buyer submits the form.

3.6.3.5 The system shall allow the admin to accept or reject listing the product after reviewing the form.

3.6.3.6 The system shall list the product to the website and notify the seller if the admin accepts the “New Listing Form.”

3.6.3.7 The system shall not allow the admin to reject a “New Listing Form” without filling out the explanation field.

3.6.3.8 The system shall notify the seller if their “New Listing Form” is rejected.

3.6.3.9 The system shall display a product's Name, Description, Price, Picture, Quantity, Categories, and Sellers Name on the listing.

## Monitoring

3.8.1 Description and Priority

This feature will allow admins to monitor the activity of sellers and buyers.

Priority: High

3.8.2 Stimulus/Response Sequences

* **Stimulus**: An admin clicks on the “Seller Activity Page.”

**Response**: The system outputs a page consisting of “New Listing Forms”, a list of buyers, with a status of how many products they have sold and when they last logged in.

* **Stimulus:** An admin clicks “Seller Activity Page”

**Response:** The system outputs a page showing a list of all the buyers with a status of how many orders they have placed and when they last logged in.

* **Stimulus:** An admin sees strange activity from a buyer/seller and clicks “Ban Account.”

**Response:** The system will remove the users access to MW, so they can no longer log in.

3.8.3 Functional Requirements

3.8.3.1 The system shall have a “Buyer Activity Page” for admins.

3.8.3.2 The system shall have a “Seller Activity Page” for admins.

3.8.3.3 The system shall contain a list of “New Listing Forms” and a list of all the buyers along with how many products they have sold and the last time they logged in on the “Sellers Activity Page.”

3.8.3.4 The system shall contain a list of buyers along with how many orders they have placed and when they last logged in on the “Buyers Activity Page.”

3.8.3.5 The system shall allow the admin to remove any buyer’s or seller's access to the MW platform.

# Other Nonfunctional Requirements

## Performance Requirements

The MW platform will have a fast response time with the limitations of the webserver [TBD-04]. The majority of the functions, except ones of high complexity, will have a response time of 1 second or less.

## Safety Requirements

To access the MW platform as a seller, buyer, or administrator the user must login with his/her username and password. This ensures all activity can be linked to the specific account in which the action took place on. If there is any misuse detected, the account linked to the activity will be banned. Additionally, all administrators must accept and sign the conditions and regulations to have sight over other users. These conditions and regulations will deter the misuse of the administrative privileges, protecting the sellers and buyers.

## Security Requirements

All users must register and create a unique username and a password. The password must be at least 10 characters, including at least one number and a special character. This will protect the account from anyone other than the user. When entering his/her password during login, the characters of the password will be hidden, to protect the passwords from being seen by others. Payment information will also be hidden when entered to protect the payment method from also being seen.

## Software Quality Attributes

The software will have an intuitive interface, allowing the user to easily understand and use the platform. The software will have an accurate and current representation of what products are available (e.g., Users will not be able to see products that are sold out).

# Other Requirements

The database will be updated when any important action is submitted, such as listings, purchases, new account creations.

Appendix A: Glossary

**Django:** A high-level python framework that aids the creation of websites [1]. The latest deployed version is Django 5.1.6, which this platform utilizes.

**Framework:** A platform that includes reusable libraries, pre-written code, and tools to provide a foundation for software applications. For the MW platform, a web development framework will be used.

**Python:** A high-level object-oriented programming language. The most recent version is Python 3.13 [2]. This platform uses Python 3.12.

**SRS (Software Requirements and Specifications):** A document outlines and defines the functional and non-functional requirements, design, and standards for software. The document explains the scope of what the software will do and how it will perform.

Appendix B: Analysis Models

<sprint 2: Optionally, include any pertinent analysis models, such as data flow diagrams, class diagrams, state-transition diagrams, or entity-relationship diagrams.>

Appendix C: To Be Determined List

[TBD-01] - Section 2.4 Operating Environment – Missing the name of the webserver that will be used for MW.

[TBD-02] - Section 2.5 Design and Implementation Constraints – Missing the name of the webserver.

[TBD-04] - Section 4.1 Performance Requirements – Missing the name of the webserver.