
Software Requirements Specification

for

Masterpiece Market

Version 1.0 approved

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02/10/2025

1. Introduction

1.1 Purpose

The purpose of this document is to show the software requirements specification for Masterpiece Market. It will provide an explanation of the features and design of the web application. It will be a way to show and communicate our design plans so that everyone can fully understand the specifications, requirements, and design of our web application.

1.2 Document Conventions

This document uses Times font for the headers and subsections. The major headers are size 18 and the subsections are size 14. The contents of those subsections are in font 11. The margins for this document are 1 inch.

1.3 Intended Audience and Reading

This SRS is intended for the development team, including a team lead and software engineers, project stakeholders, users, testers, and documentation writers. This SRS is organized to provide a clear flow of information such that readers and intended audience can locate and understand what is relevant to their own and the product's needs.

It is suggested that all readers take note of '2. Overall Description', which provides context of the product, a summary of major functions and characteristics, and the operating environment. Moving forward, the development team, testers, project stakeholders, and documentation writers will find that '3. System Features' reflect the intended product functionality with detailed descriptions. The development team and testers should also consult '4. Other Nonfunctional Requirements', to confirm the product's quality, security, and performance.

1.4 Product Scope

The application that is to be created is an online shopping system. It will perform functions that will allow users to both purchase and sell items online. Since art is handmade, this will allow users to sell what they have made and supply the marketplace. It will be based on a simplistic design that will allow users to easily navigate it. This would allow users to be efficient and spend their time viewing the product instead of seeing products they do not want.

1.5 References

Lam M., *Project Topic: An e-commerce platform*, 14, 14 Jan. 2025
https://canvas.msstate.edu/files/12264692/download?download_frd=1

Judy T., et al, "Software Requirements Specification for Y", 10 Sep. 2023,
<https://canvas.msstate.edu/courses/153572/files/12264681?wrap=1>

Mutarevic J., et al, "Software Requirements Specification for Current See", 07 Mar. 2013,
<https://canvas.msstate.edu/courses/153572/files/12264653?wrap=1>

2. Overall Description

2.1 Product Perspective

While our website may be like other sale websites and marketplaces, our website is a new standalone product that will allow users to both make sales and purchases on products. We will be building this software from the ground up with a frontend and backend. The front-end will allow users to interact with products and sale posts. The backend software will handle all of the data and databases needed for the user and the product they select. The front end will be made with Django and Python, and it will interact with SQL for data. SQL will be the backend software that will be used to store data and be used by the admins of the website. This product was meant to be designed for the Introduction to Software Engineering at Mississippi State.

2.2 Product Functions

Masterpiece Market will provide several functions; each is listed below.

- Maintain data associated with inventory (a collection of art pieces)
 - An art piece has a title, an artist, and a price
 - The inventory will keep track of the stock/quantity of each art piece
- Maintain records for many customers
 - A customer has a username, password, email address, and mailing address
 - Anyone may sign up for a customer account
- Show a listing of all available art pieces
 - Art pieces will be displayed in ascending alphabetical order (A-Z) by title
 - Each art piece list will display its title, artist, and price
- Allow customers and admin to log in and out of the system
- Shopping Cart Functionality
 - Anyone can add one or more art pieces to the shopping cart.
 - Shopping cart will not allow multiple pieces of one art piece.
- Checkout Functionality
 - Checkout is only available to a logged-in customer. A user is prompted to login before proceeding to checkout
 - Collect a 16-digit credit card number for payment
 - Log the transaction
- Allow admin to specify a stop-order for any art piece
 - Each art piece has a stop-order status (on or off).
 - An art piece may be subject to a stop-order to cease sales for the following reasons:
 - The piece has sold out
 - The quantity of the piece is nearing a sales threshold specified by admin.
 - Any art piece may be subject to a stop-order.
- Notify admin when an art piece sells out.
- Admin can block products/users.

2.3 User Classes and Characteristics

- **Customers**

Frequency- Regular use

Functions Used - Browse products, add to cart, checkout, track orders, leave reviews

Technical expertise – Basic internet user, familiar with navigating a web browser

Security level – Low (limited to shopping)

- **Sellers**

Frequency - Moderate to frequent

Functions used - Manage inventory, process orders, view sales reports

Technical expertise - Moderate (familiar with online selling platforms)

Security level - Elevated (can manage their store)

- **Admins**

Frequency - Frequent

Functions used - Manage users, oversee transactions, monitor system performance

Technical expertise - Advanced (system management, security protocols)

Security level – Highest (full access and control)

2.4 Operating Environment

Masterpiece Marketplace will be written in Python on VSCode. It will be developed and run using the Django framework. Masterpiece Marketplace will use a MySQL database for storage and management.

As a web application, it should be accessible through all forms of devices, browsers, and operating systems.

2.4.1 Python

Python is an interpreted, object- oriented programming language that can be used for a variety of tasks including:

- Web-Development
- Data Analysis
- Software Testing

Python is open-source, meaning it is freely usable and distributable. Below, is a link to download.

<https://www.python.org/downloads/>

2.4.2 Visual Studio Code

VS Code is a free, open-source code editor that allows users to write and edit code. It features extensions, allowing developers to write in various languages, and IntelliSense, and Git Support.

<http://code.visualstudio.com/download>

2.4.3 Django

Django is a free, open-source Python web framework that assists developers in building web applications.

<https://www.djangoproject.com/download/>

2.4.4 MySQL

MySQL is an open- source relational database management system.

<https://www.mysql.com/downloads/>

2.5 Design and Implementation Constraints

There will be constraints within our software due to the small scale we will be hosting on. We will be focused more on the design and functionality of the web application. This will be our priority instead of upscaling this website. Security will go through Django's built in protection and it will interact with python and mySQL.

Language: Python using Django

Database: mySQL

Server: Django

3. System Features

3.1 User Account creation and login

3.1.1

Allow new users to create an account.

Use Case: Account Creation

User Class: New accounts

Allow new users to log in to their existing account.

Use Case: Account Login

User Class: Registered Accounts

3.1.2 Functional Requirements

- System prompts user for username and password in specific spots.
- The system will ask for and validate email and check if it has been used before. It will show a message if it is invalid.
- The system will store the user's information.
- The system will have a login page.
- It will check the user's login information with the already registered information.

3.2 Creating Sale Posts

3.2.1

Allow existing accounts to create a post of what they would like to sell.

Use Case: Sale creation

User Class: Registered Accounts

3.2.2 Functional Requirements

- Users can create a post of what they would like to sell.

3.3 Purchasing posted items

3.3.1

Allow existing accounts to purchase items other users have posted

Use Case: Purchase

User Class: Registered Accounts

3.3.2 Functional Requirements

- Users can purchase an item.

3.4 Messaging Sellers

3.4.1

Allow customers to login and message the sellers they want to buy from

Use Case: Messaging

User Class: Registered Accounts

3.4.2 Functional Requirements

- Users can inquire about the art they want to buy

- This can only occur between a logged in user to ensure secure messaging
- Doing this they can negotiate price, shipping, or discuss the art.

3.5 Reviewing Sellers

3.5.1

Allow customers to login and leave a review from the seller they have purchased from

Use Case: Review

User Class: Registered Accounts

3.5.2 Functional Requirements

- Users can review the product quality and shipping from the seller.

3.6 Admin Privileges

3.4.1

Allow Admin to manage users' accounts if needed

Use Case: Manage Users

User Class: Admin

Admin can view all transactions on the web application

Use Case: View transactions

User Class: Admin

3.3.2 Functional Requirements

- Admin can view all registered users and sellers.
- Admin can edit and delete profiles if needed.
- Admin can block users from the website.
- Admin can view purchase histories and payments.

4. Other Nonfunctional Requirements

4.1 Performance Requirements

- Masterpiece Market is dependent on Django hosting the server locally. The response times are limited to what the Django servers can handle.

4.2 Safety Requirements

Masterpiece Market will require users to login to make sales and purchases. This will ensure we do not leak user information and posts.

4.3 Security Requirements

- Masterpiece Market is designed with an aim of supporting limited users at one time. Each user can sign in and sign out using his/her respective password. The passwords are hidden from other users and cannot be accessed by anyone other than the correct user. The User IDs and passwords are protected in a secure SQL database. This database can be accessed by admin.

4.4 Software Quality Attributes

Masterpiece Market will be readily available because it will be hosted locally. It will be usable from all web browsers. Masterpiece Market will be simple to understand interface that makes the application easy to navigate for users.

5. Other Requirements

Databases will be managed by the admin. This will be handled either when the page is refreshed, or an action prompts an update.