
SOFTWARE REQUIREMENTS SPECIFICATION

for

Online Postage Ordering System

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Revision History

1. Team Moon Moon Needs No Revisions.
2. Team Moon Moon Never Makes No Mistakes.
3. Correction. Team Moon Moon “fails fast.” Isn’t that the new buzzword or buzzphrase?
4. The skeleton has been updated to reflect the actual requirements provided by Dr. Seaman.
5. It’s all really coming together now.

1 Introduction

1.1 Purpose

The purpose of this document is to present a detailed description of the specifications and the requirements for a postage printing website. It will explain the purpose and features of the system, the interfaces of the system, what the system will do, the constraints under which it must operate, and how the system will react to external stimuli. This document is intended for both the stakeholders and the developers of the system.

1.2 Project Scope and Product Features

The objective of this project is to create and implement a website for printing mailing labels containing USPS postage. The website will be used primarily by registered users. The website will allow users to:

- Create and maintain individual secured accounts
- Buy/print postage labels
- List postage purchase history
- Check account balance
- Calculate postage rates
- Track packages
- Request refunds
- Check if an address is valid

1.3 Definitions, Acronyms, and Abbreviations

At this time, there are no specialized terms in need of definition.

1.4 References

IEEE. IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specifications. IEEE Computer Society, 1998.

1.5 Overview

The next section, the Overall Description, of this document gives an overview of the functionality of the product. It describes the informal requirements and is used to establish a context for the technical requirements specification in the next chapter.

The third section, Requirements Specification, of this document is written primarily for the developers and describes, in technical terms, the details of the functionality of the product.

2 Overall Description

This chapter provides an overview of the software product from the perspective of the functions that the user is expected to have available to him.

2.1 Product Perspective

The overall idea is that the user may print pre-labelled postage from a website. The website provides an address verification service, and is licensed by the relevant governments to sell postage that the relevant governments postal services will honor. This makes obtaining and labelling postage much quicker than by traditional means, wherein one had to drive to the post office to obtain stamps, and had no way to verify the existence of any particular address. As well, the user can either add credit to the website or purchase postage on a one-off basis, and can access a record of all transactions made with the website.

DIAGRAM IN-PROGRESS.

2.2 Product Functions

The following subsections detail the various functions that the user of the software must be able to utilize.

2.2.1 Create An Account

The Create Account function shall allow a user to create a secure account. The account will track the users full name, mailing address, email address, credit card information, username and password, and the purchase history for up to two years.

2.2.2 Print Postage

The Print Postage function shall allow the user to print postage that has been purchased, *directly to a printer and NOT to a file.*

2.2.3 Buy Postage

The Buy Postage function shall allow the user to purchase postage, using available credit on their account, or by purchasing postage a la carte.

2.2.4 List Postage Transactions

The List Postage Transactions function shall allow the user to view a list of all of the postage labels that they have printed, including the information printed on the label, over the past two years.

2.2.5 Get Postage Balance

The Get Postage Balance function shall allow the user to obtain their current amount in their postage buying account.

2.2.6 Calculate Postage

The Calculate Postage function shall allow the user to enter a name, address, package type, mail class, and weight. The user shall then be able to see a calculated postage amount to ship their package.

2.2.7 Track/Confirm Package

The track/confirm package function shall allow users to enter in a tracking number to see the status of their package.

2.2.8 Login/Password Reset

The login function shall allow account members to enter their username and password. When verified with the system database, users will be able to access restricted functions. The login function shall provide users an option to reset their password.

2.2.9 Refund Request

The Refund Request function shall allow the user to enter a date and to select from a list any postage purchase made on that date that they wish to refund as long as it is not older than ten days old.

2.2.10 Validate Address

The Validate Address function shall allow the user to enter an address to verify its validity.

2.2.11 Logout

The logout function shall allow the account user to exit out of their account for security.

2.3 User Characteristics

Users are expected to be Internet literate and be able to navigate in a website.

2.4 Constraints

While the system does not have any restricting hardware or software constraints, the system does have some constraints on the user which are described in the 2.3 User Characteristics part of this document.

2.5 Assumptions and Dependencies

It is assumed that the end user:

- Has an Internet connection.
- Has a web browser able to display the website.
- Has a printer.

3 Specific Requirements

3.1 External Interface Requirements

IN-PROGRESS.

3.1.1 System Interfaces

IN-PROGRESS.

3.1.2 User Interfaces

IN-PROGRESS.

3.1.3 Hardware Interfaces

IN-PROGRESS.

3.1.4 Software Interfaces

IN-PROGRESS.

3.1.5 Communication Interfaces

IN-PROGRESS.

3.2 Functional Requirements

The following subsections describe, in detail, the requirements for the system in order to provide each function described in section 2.2.

3.2.1 Create an Account

1. The system requires, from the user, the following information: Full Name, Mailing Address, Email Address, Credit Card information, a unique username, and a password.
 - 1.1. Invalid data is prevented from being entered.
 - 1.2. The username and password should meet the specified criteria [TBD].
 - 1.3. If the selected username and password do not meet the criteria, the system shall ask the user to reenter a new username and password.

2. All provided information, entered by the user, should be stored in the system.

3.2.2 Print Postage

The system shall...

1. First, ensure...
 - 1.1. that there is a valid, logged-in user requesting the postage.
 - 1.2. that the user is authorized to print the postage.
 - 1.3. that the user's printer is available and functional.
2. Then, prompt the user to confirm the printing of the postage, showing current and subsequent account balances as necessary.
3. Then, once confirmation from the user is obtained, generate the postage on a special page, devoid of any other content, that the user may print. Ensure that the user is unable to print to a file.
4. Finally, upon detection of the completed print job, return the user to the "account status" page, where the successful print job is displayed in the list of transactions.

3.2.3 Buy Postage

The system shall...

1. First, ensure
 - 1.1. that there is a valid, logged-in user requesting to buy postage. Otherwise, redirect to the Log In function.
2. Then, provide the user with options of what sort of postage to purchase.
3. Then, upon the user selecting a package, query for the quantity of postage to purchase.
4. Then, upon obtaining the quantity, calculate the total cost and prompt the user for a purchase method, either through account credit or through a one-time payment.
 - 4.1. If the user wishes to utilize account credit, ensure that sufficient credit is available to cover the total cost. If there is enough credit, proceed to step 5. Otherwise, prompt user to add credit to their account or perform a one-time purchase.
 - 4.2. If the user wishes to purchase through a one-time payment, proceed to step 6.

5. Upon confirming that enough credit is available, request the address for the postage to be delivered to and pass this address to the validate address function. If the validate address function confirms the validity of the address, proceed to step 8. Otherwise, prompt again for a valid address.
6. Upon confirming that the user wishes to make a one-time payment, request the credit card information, either stored on the account or provided manually. Proceed to step 7.
7. Upon confirmation of the one-time payment details, request an address for delivery. Pass the address to the address verification function. If the address is valid, proceed to step 8. Otherwise, request a valid address.
8. Then, confirm the transaction details: amount, price, shipping destination.
9. Upon confirmation from the user, enter the transaction into the transaction ledger, schedule the postage for printing, and proceed to the Print Postage function.

3.2.4 List Postage Transactions

The system shall...

1. First, ensure that there is a valid, logged-in user requesting to view the Postage Transactions.
2. Then, provide a method for the user to select a start date and then an end date for which they would like to view the postage transactions.
3. Then, query the database, using the selected dates as the requirements, and will list any and all Postage Transactions that fall between the specified dates in descending order.

3.2.5 Get Postage Balance

The system shall...

1. First, ensure...
 - 1.1. that there is a valid, logged-in user requesting the postage balance.
 - 1.2. that the user is authorized to view the postage balance.
2. Then, find user account, and display postage balance in order for the user to see.

3.2.6 Calculate Postage

The system shall...

1. First, ensure that there is a valid, logged-in user requesting the postage balance.
2. Then, provide a method for the user to enter a Name,Address,Packaging type, mail class, and weight.
3. Then, calculate estimated shipping cost for the users package.
4. Finally, upon completion of calculation, display the estimated shipping costs.

3.2.7 Track/Confirm Package

The system shall...

1. allow the user to enter in a tracking number.
2. check the tracking number with the system database.
 - 2.1. if valid, display the current tracking information for the user to access.
 - 2.2. if invalid, inform the user that the tracking number is not in the system database. The user may enter a tracking number or the user may cancel.

3.2.8 Login/Password Reset

The system shall...

1. require a username and password from the user.
2. verify the username and password with the system database.
 - 2.1. If valid, the user will be granted access to the following functions:
 - 2.2. If the username is not located within the system database, the system shall inform the user that their username is invalid. The user may enter a different username or the user may cancel.
 - 2.3. If password is not valid for the username entered, inform the user that the password is invalid. The user many enter a different password or the user may cancel
3. allow the user to request a password from the system to be emailed to the registered user.
 - 3.1. The user can request a password from the system, provided the user gives the system a valid username from the system database.
 - i. If the username is not within the database, inform the user that their username is invalid. The user may enter a different username of the user may cancel.

- 3.2. The system shall randomize a password and send to the users accounts email in the system database.

3.2.9 Refund Request

The system shall...

1. First, ensure that there is a valid, logged-in user requesting to access the Refund Request function
2. Then, provide a method for the user to enter a date.
3. Then, query the database for any postage transactions made on that date.
4. Then, display a list of any and all postage transactions made on that date in descending order.
 - 4.1. mark those transactions that are eligible for refund by determining which transactions fall within the ten day window.
5. Then, provide a method for the user to select an eligible transaction to be invalidated and refunded.
6. Then, provide a method for the user to confirm the selection.
 - 6.1. mark the selected transaction as invalid.
 - 6.2. adjust the users Postage Balance to reflect the refunded amount.

3.2.10 Validate Address

The system shall...

1. First, provide a method for the user to enter an address to validate.
2. Then, query a database of addresses in an attempt to validate the entered address.
 - 2.1. If the address is not found in the database, attempt to find an address that is similar to the entered address.
 - 2.2. If a similar address is found, notify the user that the entered address is not found and display the similar address and ask the user to confirm the new address.
 - 2.3. If no similar address is found, notify the user that the entered address is invalid and prompt them to enter a new address.

3.2.11 Logout

The system shall...

1. immediately disable access to functions that require a registered user.

3.3 Performance Requirements

1500 people should be able to use web application simultaneously. System login/logout shall take less than eight seconds. Requests to Print Postage should be processed within 10 seconds. All other requests should be processed within 5 seconds.

3.4 Logical Structure of the Data

IN-PROGRESS. Assigned to Preston Maness (me). I'm still working on a good way to diagram everything.

3.5 Design Constraints

Constraints for the postage printing website include

- Able to support PC, Mac platforms.
- System logs out user after ten minutes of inactivity.
- System supports all web browsers.

3.6 Software System Attributes

The requirements in this section specify the required reliability, availability, security and maintainability of the software system.

3.6.1 Reliability

For the system to be reliable it will require a stable Internet connection. If service goes down, it should be restored within 20 minutes. The average failure rate should be less than 4% of all transactions.

3.6.2 Availability

The system should not be unavailable for more than 30 minutes within a 24 hour period, on average.

3.6.3 Security

Users access should be limited to their personal information only. Purchases should be handled through a secure server to ensure the protection of the users credit card and personal information.

3.6.4 Maintainability

Any updates or xes shall be able to be made on server-side only, without any requirements of the user.

3.6.5 Portability

Nothing required.