

Mail Database Project

Christian Johnson & Dan Nusraty & Dylan McGill
Optimail

March 6, 2024

1 Contents

- 1.1 Functional Requirements
- 1.2 Non Functional Requirements
- 1.3 Use Case Diagram
- 1.4 Meeting Summaries
- 1.5 Individual Use Cases
 - 1.5.1 Dan
 - 1.5.2 Christian
 - 1.5.3 Dylan

Functional Requirements

- System will accept data entry
- System will record tracking number and addressed box number for incoming packages
- System will add entered information into sql database
- System will associate incoming packages with Cadet information based on addressed box number
- System will notify Cadet upon package arrival
- System will record package status (Picked up or not)
- Users can search database for packages
- System will display all packages matching search terms
- Users can easily update package status
- Developers will write code in an organized fashion, such that the system is easy to expand later.
- System will allow user to categorize packages (e.g. perishable, priority, regular)
- System will authenticate users with a login screen. Certain functionality will only be available to users with authentication
- System will record a history of package movement and status change
- System will provide reporting tools to the user
- System will feature a status dashboard to show totals and informational breakdowns.

Non Functional Requirements

- Will not misassociate packages
- Will allow package entry, given necessary data, within 5 seconds
- Will be easily navigable, with all system functions available within 5 clicks

- ## Use Case Diagram



Meeting Summaries

Meeting 1 - 30JAN2024

- Decided on division of labor
- Agreed on general project scope
- Began formulating Functional Requirements

Meeting 2 - 01FEB2024

- Created Use-Case Diagram
- Finished Functional Requirements
- Started Non Functional
- Started individual Use Cases

Meeting 3 - 02FEB2024

- Polished Use-Case Diagram
- Completed Requirements
- Finished Individual Components

Individual Use Cases

UC01 - Retrieve Package (Dan)	
Scope	Package Notification System
Level	User Goal
Primary Actor	Cadet
Stakeholders and Interests	<p>Cadet: The cadet wants a simple and effective way to get their package</p> <p>Employee: wants a simple and effective way to find and deliver necessary packages.</p>
Preconditions	Cadet receives an email indicating a package is ready
Postconditions	Cadet leaves the mailroom with their package. Mailroom staff updates the database, package is marked as delivered.
Main Success Scenario	<ol style="list-style-type: none"> 1. Cadet receives an email notifying them of a package 2. Cadet arrives at mailroom and requests package 3. Mailroom conducts "Find Package/ Pickup Package" to retrieve the package. 4. Cadet takes custody of their package from mailroom staff.
Extensions	<p>1A. Cadet does not see notification email (did not receive, or simply didn't notice)</p> <p>1Ai. In case of a database issue, mailroom staff should be notified.</p> <p>1Aii. Cadets should resolve issues with their own email themselves</p> <p>1Aiii. In either case, the mailroom will still have the package; the cadet must then manually check whether a package is there.</p> <p>2A. If the cadet does not arrive at the mailroom, the package will be retained indefinitely either until it is retrieved or the addressee graduates.</p> <p>3A. If the mailroom fails to locate the package, they must check logs and records that are separate from this system in order to locate it.</p>
Special Requirements	The cadet must receive a package, and be willing to go to the mailroom to pick it up.
Technology and Data Variations	Touchpad to sign for package
Frequency of Occurrence	Nearly Continuous

UC02 - Find Package (Christian)	
Scope	SQL Mail Database
Level	User Goal
Actor	Mailroom Staff
and Interests	Mailroom Staff: Want efficient and simple query methods Cadets: Want staff to find their package quickly
Precondition	Mailroom has package Package properly stored in database Mailroom has correct Cadet info for search
Postconditions	Package information updated in database
Main Success Scenario	1. Cadet arrives at mailroom 2. Mailroom staff enters Cadet info 3. all relevant results are displayed 4. Mailroom staff retrieves package 5. Cadet receives package and leaves 6. Database updated
Extensions	3a. No results, mailroom staff checks the email sent to the cadet (should contain information to find the package manually)
Special Requirements	None
Technology and Data	None
Frequency	Nearly Continuous
Open Issues	None

UC03 - Add Package (Dylan)	
Scope	SQL Mail Database
Level	System goal
Primary Actor	Mailroom Staff
Stakeholders and Interests	Mailroom Staff: Want efficient and streamlined storage of packages Cadet: Wants timely and accurate notification of package receipt
Precondition	Package has been physically received by the mailroom staff
Postconditions	Package information has been added to SQL Database Email notification has been sent to Cadet Package has been stored appropriately
Main Success Scenario	<ol style="list-style-type: none"> 1. Mailroom staff scans the package 2. Automated system scans the package and reads tracking number/box number 3. Package status is updated in database along with timestamp and date 4. System generates and sends an email to Cadet 5. Staff stores the package in appropriate area/box number
Extensions	<ol style="list-style-type: none"> 1a. Invalid/incomplete information <ol style="list-style-type: none"> 1. Mailroom staff notified, providing option to manually input information 3a. Database upload failure <ol style="list-style-type: none"> 3. Mailroom staff notified, given guidance on resolving the issue 4a. Email notification failure <ol style="list-style-type: none"> 4. Mailroom staff notified, given guidance on resolving the issue <p>Cancel Operation: Mailroom staff may cancel the operation at anytime</p>
Special Requirements	Secure database is used to protect cadet security
Technology and Data	empty
Variations List	<ol style="list-style-type: none"> 1a. Automated scanning system 3a. SQL Database 4a. Email notification system
Frequency of Occurrence	Regularly: Anytime the mailroom receives a package
Open Issues	<p>Ensure seamless integration with current scanners</p> <p>User training</p> <p>Systems ability to handle high volume of packages during highly busy times</p>