

CSE 1320 Project Documentation

## Delivery Management System

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Mentor: Marika Apostolova

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**Intermediate** **programming** **CSE 1320**

**Student** **declaration:**

*We declare* *that:*

* *We* *understand* *what* *is* *meant* *by* *plagiarism*
* *The* *implication* *of* *plagiarism* *has* *been* *explained* *to* *me* *by* *our* *professor*
* *This* *assignment* *is* *all* *team* *own* *work* *and* *we* *have* *acknowledged* *any* *use* *of* *the* *published* *and* *unpublished* *works* *of* *other* *people.*

**1 Student** name, surname, ID and **signature:** **……………………......**

**2 Student** name, surname, ID and **signature:** **……………………......**

**3 Student** name, surname, ID and **signature:** **……………………......**

**4 Student** name, surname, ID and **signature:** **……………………......**

**Date:……..............................................**

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| **Class** **Code** **/** **Group** | CSE 1320 | |
| **Lecturer’s** **Name** | MARIKA APOSTOLOVA | |

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**Project Introduction**

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Description automatically generatedThe Delivery Management System is a command-line interface application designed to manage customer delivery information and fulfillment status. The system provides essential functionality for handling customer records, including address management, delivery status tracking, and customer information maintenance. This system is crucial for maintaining accurate customer delivery information and tracking delivery statuses efficiently.

**Project Description**

The primary goal of this project is to create a reliable and efficient system for managing customer delivery information. The system aims to:

* Maintain accurate customer delivery information
* Track delivery statuses in real-time
* Provide easy access to customer records
* Enable quick updates to customer information
* Ensure data persistence through CSV file storage

The system achieves these objectives through a menu-driven interface that allows users to:

1. Modify customer addresses
2. Update delivery statuses
3. View customer information
4. Add new customer records
5. Remove existing customer records

All changes are automatically synchronized with a CSV file, ensuring data persistence between sessions.

**Project Architecture**

A diagram of a software system

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**Programming Concepts Used**

**Structures**

* Implemented the Client structure to encapsulate customer data
* Uses member variables for customer name, address, zip code, phone number, and delivery status
* Demonstrates object-oriented principles in C

**File Operations**

* Implements CSV file reading and writing
* Uses fopen, fclose, fgets, and fprintf for file handling
* Ensures data persistence between program executions

**Dynamic Memory Management**

* Uses arrays to store client records
* Manages record addition and removal dynamically
* Implements proper memory handling

**String Manipulation**

* Uses strcpy, strtok, and strcspn for string processing
* Handles input validation and formatting
* Manages newline characters and string termination

**Control Structures**

* Implements a menu-driven system using do-while loops
* Uses switch-case for menu option handling
* Employs conditional statements for data validation

**Code Description**

A screen shot of a computer program

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Client Record Management:

This feature implements the core data structure and record management functionality.

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File Operations:

This feature handles data persistence through CSV file operations.

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Address Management:

This feature enables address updates with proper input handling and validation.

**System Testing**

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**Group members**

**Karthik Emani:**

Led the development of the core client management functionality and user experience:

* Designed and implemented the menu-driven interface system, including:
  + Main program loop logic
  + Menu option organization
* Developed essential client management functions:
  + DisplayClientInfo(): Created detailed client information display system with formatted output
  + AddNewRecord(): Built comprehensive client addition system with input validation
  + RemoveRecord(): Implemented client removal with array management and data integrity checks
* Implemented array management logic for client records
* Designed the client data display formatting and user messaging system

**Luis Arredondo:**

Focused on data structure design and file system operations:

* Designed and implemented the fundamental Client structure
* Created and populated the initial CSV file with test data
* Developed the file operation system:
  + CSV file reading and writing functionality
  + Data persistence logic
* Implemented address and delivery management features:
  + ChangeAddress(): Address modification system
  + ChangeDeliveryStatus(): Delivery tracking functionality
  + UpdateCSVFile(): File synchronization system
* Created string manipulation utilities for data processing
* Created input validation and error handling systems

**Conclusion**

The Delivery Management System effectively delivers a robust solution for managing customer delivery information. It provides essential functionalities, including maintaining accurate customer records, updating delivery statuses, and ensuring data persistence and reliability. This system lays the foundation for seamless operational management and enhances the overall efficiency of customer service processes.

**Future Works:**

1. Implementing a graphical user interface
2. Adding search and filter capabilities
3. Implementing data encryption for sensitive information
4. Adding support for bulk operations
5. Implementing user authentication and authorization
6. Adding reporting and analytics features
7. Implementing backup and recovery systems
8. Adding support for multiple data storage formats

The system provides a solid foundation for future enhancements while meeting current requirements for customer data management and delivery tracking.