**Project Part One**

**CSCI 467**

**Due Date 11/07/2022 by 11:59 pm**

**By**

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| **Preface** | **Readership***:*  Includes system engineers, system owners, client engineers.  **Rationale:**  This iteration of the program is the first of its kind. It is the base version that will potentially be improved with future updates.  **Version:**  Version 1.0.0  **Summary of changes in version:**  This is the first iteration of the program. |
| --- | --- |
| **Introduction** | **Need for the system:**  This system is needed so that internet customers can place and pay for orders online instead of relying on mail orders.  **Brief system functions description**  Customers will have a catalog of products presented to them through the custom ordering program via the internet. The system will have a custom order cart, a credit card payment portal, tools to help the clients with packing and shipping of the orders, and a tracker to keep inventory stock numbers.  **Business/Strategic objective**  The objective of this system is to allow customers to use the program to place and pay for orders online. This system is to be implemented to replace the current physical mail-in ordering system used by the client. This should allow for a greater customer base and easier access to the products offered from the company. |
| **Glossary** | Catalog- A complete list of items, typically one in alphabetical or other systematic order.  Inventory- The goods and materials that a business holds  Database - Information/data stored and organized electronically.  Interface – Interaction points between the user and machine.  WAN- A wide area network, a telecommunications network that extends over a large geographic area.  LAN- A local area network, a collection of devices connected together in one physical location  Authorization number- generated passcode required to transfer an Internet domain name between domain registrars  ID- Identity document, to identify individuals  Polymorphism- provision of a single interface to entities of different types or the use of a single symbol to represent multiple different types.  Functional requirements – define what a product must do and what its features and functions are.  Non-functional requirements - Describe the general properties of a system. |
| **User requirement definitions** | **User requirements:**   * A catalog of all products with available search engine and filters for the customer   + Each product has a display name, description, price, quantity tag.   + Keep track of current inventory * First interface: a shopping card, credit card payment system   + Automatically calculate and compute shipping, handling, and other miscellaneous charges if there is any   + Send order confirmation to email once the order is paid for with order number   + Confirms with an authorization number of the credit card payment   + Services to allow the customer to keep track of order status, packing and shipping of the order. * Second interface to allow workers to print packing lists for successful orders, pack and ship the items then update the order status. * Third interface: for the user at the receiving desk in the warehouse, allowing the user to:   + Add delivered products to inventory with the part number, description, quantity. * Fourth interface: administrative interface that allows managers to:   + Set and update shipping, handling, and other miscellaneous charges (if any) for each weight bracket or an order, as well as the weight brackets themselves.   + A search and display system to view all past and current orders.     - The search can be based on range, order status (authorized, shipped) or price range.     - Display the complete order detail for the selected order.   **Non-functional requirements:**   1. Product:  * The system should be available 24/7 * Intuitive and refined-looking interfaces * Ensure personal data and information are well–protected. * Works and interfaces with the company’s existing legacy database.  1. Organizational:  * Consistent designs across all interfaces * Allow employees to authenticate themselves using each individual unique IDs  1. External:  * Comply with national laws * Shall not disclose any personal information of the customers apart from their names and order reference number to the public, or of the employees except to system administrators or personnel with the appropriate security clearances. |
| **System architecture** | **Multi-tier client–server architecture:**  **Tier 1:**  User interface: will allow the user to order auto parts if they give the appropriate information and they get a confirmation email when the order goes through.  **Tier 2:**  Workstation Interface: Print packaging lists for completed orders. After Successful packing and shipping the order is recorded in order status and an email is sent to the customer confirming the order has been shipped.  Receiving desk Interface: When orders have been delivered, they are added to inventory, however this does not contain all the information of the products in inventory.  **Tier 3:**  administrative interface: This interface can view all orders with all the information stored on it. Order can be searched based on various details; data range, status, and price range. |
| **System requirements specification** | **Functional requirements:**  System requirements - The system needs to hold information about every part such as part number, description, weight, picture, price for each product, and customer orders. It also needs to confirm each purchase with an authorization number. The system also needs to keep track. There are four interfaces: one for the user, one for the warehouse to update, label, package and confirm that it has been shipped. Receiving desk Interface to basically confirm the items have been delivered and keep track of items that have been delivered. Administrative interface to see directly into the database,  **Non-functional requirements:**  System requirements - Presuming that there needs to be minimal downtime and secure system for lower maintenance cost and longevity of the system. |
| **System models** | See Diagram Below, It is a Data flow Model |
| **System evolution** | When the system is coded data objects models will use polymorphism for faster and easier future changes to the system. There will be a template for documentation for more consistency within code. We will create a separate system to include prototyping to see how the proposed changes would affect our system. We will also include authenticators for people with access to important interfaces. |
| **Appendices** | * The user interfaces shall be made compatible with any standard web browsers such as Microsoft Edge, Opera, Google Chrome, Firefox to allow the customers to access the system. * All hardware requires connection to the internet since this is a system that must be run over the internet. As such, hardware such as Modem, WAN, LAN, Ethernet connection cable are required. * The system shall communicate with the company’s existing legacy database and provide customers with intuitive interfaces to interact with each other. |
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