

COMP 491: Senior Seminar

Requirements Document:

User Requirements
System Requirements

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0. Project Objective

0.1 Goal

The purpose of this system is to provide Brand New Windows with a system that will enable the business to keep records of past jobs completed and produce customizable estimates for future jobs. This system will allow the user to perform the same operations already used in current business practices, such as on-site pricing estimates, recording customer demographics, and window order forms.

Rationale: Brand New Windows would like to eliminate any paper copies that have to be managed, while allowing for a higher level of organization. The business will then be able to enter all of a customer's information into the database, such as the type of windows that they desire, along with the measurements. This will facilitate presenting the customers with an estimate for the entire job, as the current prices for Brand New Windows' services can be obtained without manual computation or having to make calls to their windows distributor.

1. User Requirements

1.1 Customer Functionality

1.1.1 Add a Customer

Whenever a new or potential customer is dealt with, the user will be able to enter the following information:

1. Last Name
2. First Name
3. Street Address
4. City
5. State
6. Zip
7. Phone
8. Fax

Rationale: The new or potential customer will exist in the database, which will allow a user to easily find contact information for the customer even if an order has never been placed with the business.

1.1.2 Modify a Customer

In the case that a customer's contact information should change, the following information will be available to edit:

1. Last Name
2. First Name
3. Street Address
4. City
5. State
6. Zip
7. Phone
8. Fax

Rationale: This will allow a user the capability to keep up-to-date records of any customer's contact information.

1.1.3 Deactivate a Customer

If Brand New Windows chooses to stop doing business with a particular customer, a user will be able to mark the customer as being inactive by utilizing this functionality.

Rationale: If certain circumstances arise, such as Brand New Windows no longer wishing to do business with a particular customer, then they will have the ability to mark the customer's contact information in their database to designate this request.

1.2 Order Functionality

1.2.1 Create an Order

Whenever a customer wants to place an order with Brand New Windows, the user will enter in the following information:

Customer Contact Information (see Section 1.1.1) must be entered first.

Customer Shipping Information:

1. Street Address
2. City
3. State
4. Zip
5. Phone
6. Directions/Comments

*Customer Shipping Information will be copied from Customer Contact Information if the user indicates that it is the same for both sets of information.

Order Information:

1. Order Date
2. Quantity
3. Series
4. Style
5. Install
6. Width
7. Height
8. Color Option
9. Glass Option
10. Grid Option
11. Screen Option
12. Labor
13. Discount Percent

* The Order Information options 2 through 11 will be unique for each particular configuration of a window. The user will have the capability to enter multiple unique configurations of characteristics 2 through 11.

Rationale: These specified pieces of information that the user must enter are in direct correspondence with the current paper version of Brand New Windows' order form.

1.2.2 Modify an Order

In the case that an order needs to have its contents adjusted, the user will have the capability to edit the following information from a preexisting order:

Customer Contact Information (see Section 1.1.2):

Customer Shipping Information and Order Information (see Section 1.2.1):

Rationale: This will allow a user the capability to keep up-to-date records of any customer's order.

1.2.3 Deactivate an Order

If an order must be cancelled, a user will be able to mark it as being inactive by utilizing this functionality.

Rationale: If certain circumstances arise, such as a customer no longer wishing to have an order with Brand New Windows, then the user will have the ability to mark the order as inactive.

1.3 Item Functionality

1.3.1 Add a New Item

This functionality allows a user to enter a new item offered by the distributor along with its corresponding attributes. When adding a new item, the user will enter the following information:

Windows & Patio Doors:

1. Series
2. Style
3. Minimum Width
4. Maximum Width
5. Minimum Height
6. Maximum Height
7. Maximum United Inches
8. Color Option
9. Glass Option
10. Grid Option
11. Screen Option
12. Unit Price

Patio Doors Only:

1. Rough Opening
2. Number of Panels

Rationale: Brand New Windows wants to have the capability to offer the latest models of windows and patio doors to their customers. Whenever the distributor offers a new window or door, the user can add the attributes of the item to the database for use in order processing.

1.3.2 Modify Existing Item

Whenever a user needs to edit or add to any of the attributes of an existing window or door in the database, the following information is available for adjustments:

(See Section 1.3.1 for attributes available for modification)

Rationale: The distributor for Brand New Windows may offer new options for a window or patio door, such as a new grid style. The user wants to have the capability to offer the latest upgrades to their customers, so this will allow them to modify any of the attributes of an item in the database.

1.3.3 Deactivate Existing Item

If an existing item is no longer offered, such as a discontinued style of window, a user will be able to mark the item as being inactive by utilizing this functionality.

Rationale: The distributor for Brand New Windows may discontinue a certain window or patio door that is currently stored in the database, so the user must have the capability to mark the item in their database as being inactive. This will ensure that a contractor will not be able to add discontinued items to an order.

1.4 Reports

The system will provide the user with the capability of running reports. This feature allows the user to enter certain criteria, depending on the specific report, to search the database for data pertaining to the requested information.

1.4.1 Customer Search Reports

Whenever the user wants to search the database for data pertaining to a particular customer's name, they will be able to enter the following information to run a customer search report:

1. Last Name
2. First Name

Rationale: The user may want to query the database to see all of the customer contact information that corresponds to a particular customer. This report returns all of the customer contact information outlined in Section 1.1.1.

1.4.2 Item Information Reports

Whenever the user wants to search the database for attributes of a particular item, they will be able to enter the following information to run an item information report:

1. Series
2. Style

Rationale: The user may want to query a particular item in the database in order to see all of the attributes available for that item. This report returns all of the information outlined in Section 1.3.1

1.4.3 Previous Install Reports

Whenever the user wants to search the database for data pertaining to a particular item that has been installed for a customer, they will be able to enter the following information to run a previous install report:

1. Series
2. Style

Rationale: The user may want to run a report for a particular series and style of a window or patio door in order to see where that item has previously been installed. This may be done if a potential customer wants to see specific jobs completed by Brand New Windows. This report returns all of the information from an order form that has that particular queried type of item on it.

1.4.4 Date Reports

Whenever the user wants to search the database for orders placed on a certain date, they will be able to enter the following information to run a date report:

1. Date

Rationale: The user may want to run a report to see order information pertaining to a specified date.

1.4.5 Customer Order Reports

Whenever the user wants to search the database for orders placed by a certain customer, they will be able to enter the following information to run a customer order report:

1. Last Name
2. First Name

Rationale: The user may want to run a report to see all of the orders placed by a particular customer.

2. Non-Functional Requirements

2.1 Operating System and Software Requirements

The operating system on the user's PC must be able to run Microsoft Access 2003. Microsoft Windows 2000 Service Pack 3 (SP3) or later and XP are the recommended operating systems. The recommended system requirements for basic functionality are as follows:

1. Pentium 300-megahertz (MHz) processor
2. 128 megabytes (MB) of RAM
3. At least 3 gigabytes (GB) of available space on the hard disk

Rationale: These requirements will ensure that the Microsoft Access database will run efficiently even with high volumes of data. Additionally, Brand New Windows is currently running these minimum requirements, so the system was set up with this in mind.

3. System Requirements

1.1.1 Add a Customer

Function: Add customer information

Description: A form is displayed allowing a user to enter the appropriate information for a new customer.

Requires: Write access to the database.

Input: Last Name
First Name
Street Address
City
State
Zip
Phone
Fax

Output: New customer information is placed into the Brand New Windows database.

Pre-Condition: None.

Post-Condition: All information is stored in the database.

1.1.2 Modify a Customer

- Function:** Modify customer information.
- Description:** A form is displayed allowing a user to edit the appropriate information for a specified customer.
- Requires:** Read/Write access to the database.
- Input:** See Section 1.1.1
- Output:** Modified customer information is stored in the Brand New Windows database.
- Pre-Condition:** The customer information that needs modification exists in the database.
- Post-Condition:** All modified information is stored in the database.

1.1.3 Deactivate a Customer

- Function:** Deactivate customer information.
- Description:** A form is displayed allowing a user to choose the appropriate customer to deactivate.
- Requires:** Read/Write access to the database.
- Input:** Last Name
First Name
- Output:** None.
- Pre-Condition:** The customer information that needs to be deactivated exists in the database.
- Post-Condition:** The customer information is marked as inactive in the database.

1.2.1 Create an Order

Function: Order creation.

Description: Allows the user to compile an order form.

Requires: Read/Write access to the database.

Input: Customer Contact Information (see Section 1.1.1).

Customer Shipping Information:

1. Street Address
2. City
3. State
4. Zip
5. Phone
6. Directions/Comments

*Customer Shipping Information will be copied from Customer Contact Information if the user indicates that it is the same for both sets of information.

Order Information:

1. Order Date
2. Quantity
3. Series
4. Style
5. Install
6. Width
7. Height
8. Color Option
9. Glass Option
10. Grid Option
11. Screen Option
12. Labor
13. Discount Percent

* The Order Information options 2 through 11 will be unique for each particular configuration of a window. The user will have the capability to enter multiple unique configurations of characteristics 2 through 11.

Output: Pricing information is displayed on the order form.

Pre-Condition: Series and Style must already exist in the database for each input.

Post-Condition: Order form is stored in the database.

1.2.2 Modify an Order

- Function:** Edit an existing order.
- Description:** Allows the user to edit mistakes, typographical errors, updates, etc. to an order that exists in the database.
- Requires:** Read/Write access to the database.
- Input:** See Section 1.2.1
- Output:** Pricing information is displayed on the order form.
- Pre-Condition:** Order being modified must already exist in the database.
- Post-Condition:** Order form is stored in the database.

1.2.3 Deactivate an Order

- Function:** Deactivate an existing order.
- Description:** A form is displayed allowing a user to choose the appropriate order to deactivate from all orders corresponding to a specified customer.
- Requires:** Read/Write access to the database.
- Input:** Last Name
First Name
- Output:** None.
- Pre-Condition:** The customer's order information that needs to be deactivated exists in the database.
- Post-Condition:** All customer order information for the specified customer is marked as inactive in the database.

1.3.1 Add a New Item

Function: Add new item information

Description: A form is displayed allowing a user to enter the appropriate information for a new item.

Requires: Write access to the database.

Input: Windows & Patio Doors:

1. Series
2. Style
3. Minimum Width
4. Maximum Width
5. Minimum Height
6. Maximum Height
7. Maximum United Inches
8. Color Option
9. Glass Option
10. Grid Option
11. Screen Option
12. Unit Price

Patio Doors Only:

1. Rough Opening
2. Number of Panels

Output: New item information is placed into the Brand New Windows database.

Pre-Condition: None.

Post-Condition: All item information is stored in the database.

1.3.2 Modify an Existing Item

Function: Edit an existing item.

Description: Allows the user to edit mistakes, typographical errors, updates, etc. to an item that exists in the database.

Requires: Read/Write access to the database.

Input: See Section 1.3.1

Output: The edited item information is stored in the Brand New Windows database.

Pre-Condition: Item must already exist in the database.

Post-Condition: Item information is stored in the database.

1.3.3 Deactivate an Existing Item

Function: Deactivate an existing item.

Description: A form is displayed allowing a user to choose the appropriate item to deactivate.

Requires: Read/Write access to the database.

Input: Series
Style

Output: None.

Pre-Condition: The item information that needs to be deactivated exists in the database.

Post-Condition: All information for the specified item is marked as inactive in the database.

1.4.1 Customer Search Reports

Function: Search for customer information.

Description: Searches the database for data pertaining to a particular customer's name.

Requires: Read access to the database.

Input: Last Name
First Name

Output: Matching customer contact, shipping, and order information is displayed to the screen. Error message is displayed on the screen if the customer does not exist in the database.

Pre-Condition: None.

Post-Condition: Corresponding information is displayed. If the customer does not exist in the database, then an error message is output to the screen.

1.4.2 Item Information Reports

Function: Search for attributes of a particular item.

Description: Searches the database for attributes pertaining to a particular item.

Requires: Read access to the database.

Input: Series
Style

Output: Matching item information outlined in Section 1.3.1 is displayed to the screen. Error message is displayed on the screen if the item does not exist in the database.

Pre-Condition: None.

Post-Condition: Corresponding information is displayed. If the item does not exist in the database, then an error message is output to the screen.

1.4.3 Previous Install Reports

Function: Search for a particular item history.

Description: Searches the database for a particular item that has been installed for a customer.

Requires: Read access to the database.

Input: Series
Style

Output: Customer names, order dates, quantity ordered, and amount charged is displayed to the screen for the specified series and style combination entered. Error message is displayed on the screen if there is no history for the specified item in the database.

Pre-Condition: None.

Post-Condition: Corresponding information is displayed. If history for the item does not exist in the database, then an error message is output to the screen.

1.4.4 Date Reports

Function: Search for orders.

Description: Searches the database for orders placed on a specific date.

Requires: Read access to the database.

Input: Date

Output: Customer names, number of windows ordered, and prices of installments occurring on the specified date are displayed to the screen. Error message is displayed on the screen if there is no history for the specified date in the database.

Pre-Condition: None.

Post-Condition: Corresponding information is displayed. If history for the date does not exist in the database, then an error message is output to the screen.

1.4.5 Customer Order Reports

Function: Search for orders.

Description: Searches the database for orders placed by a specific customer.

Requires: Read access to the database.

Input: Last Name
First Name

Output: Order dates with corresponding quantity of windows ordered, series and style are displayed to the screen. Error message is displayed on the screen if there are no orders for the specified customer in the database.

Pre-Condition: None.

Post-Condition: Corresponding information is displayed. If an order for the customer does not exist in the database, then an error message is output to the screen.