

Hoist Warehouse E-Commerce Website and Database

By

Michael Abrinica

Submitted to
the Faculty of the Information Engineering Technology Program
in Partial Fulfillment of the Requirements for
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Michael Abrinica

Date

Professor Russell McMahon

Date

James Sullivan, Department Head

Date

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Abstract

The Hoist Warehouse E-Commerce Website and Database was developed in order to establish Hoist Warehouse's presence on the Web and to create a more efficient database for accessing information. Up until now, Hoist Warehouse has relied on telephone, mailings, and brochures in order to generate sales and get information to their customers. It has yet to take advantage of the popularity and growth of the Internet and e-commerce. The Hoist Warehouse E-Commerce Website and Database is a user-friendly Website developed with Active Server Pages and SQL Server 2000 as a backend database. It allows customers to search the Hoist Warehouse product inventory, view details on the products, create and get price quotes on hoists, and place items in a virtual shopping cart in order to purchase them. The project also includes an administration page for Hoist Warehouse employees to add and delete products from the inventory database.

Hoist Warehouse E-Commerce Website and Database

1. Statement of the Problem

1.1. Definition of the Need

Hoist Warehouse, a reseller and manufacturer involved in the business of machine parts has relied on out-dated methods for generating new sales and reaching potential customers. They currently use mailings, brochures, and direct telephone marketing to reach current customers and potential new customers. In the Information Age we live in, their success has been hindered by lack of any presence on the Internet. As a result, they have missed out on many sales opportunities from customers who would like the convenience of searching for and ordering products online. In addition, Hoist Warehouse employees currently use a Microsoft Access database for accessing over 10,000 records. It is implemented very inefficiently to the point where queries run from a desktop application may take up to several minutes to complete. (6) After sitting down and speaking with a representative of Hoist Warehouse, I was informed of several needs that must be met.

1. Establish a Web presence, which includes a Website with the following:
 - a. Viewable product details
 - b. Searchable product inventory
 - c. Unit Builder for creating Hoists
 - d. Shopping cart, allowing customers to place items in a virtual cart and make a purchase online.

2. Redesign existing database. A more robust and efficient database is needed, therefore, SQL Server was chosen.

2. Description of the Solution

2.1. User Profile

The intended users for the **Hoist Warehouse E-Commerce Web Site and Database** will have varying degrees of IT literacy. At a minimum, every user is assumed to have basic knowledge of computers, including how to surf the Internet and use a Web browser, such as Internet Explorer. The project will include two different interfaces, one for customers and visitors of Hoist Warehouse's Web Site and one for the authorized employees of Hoist Warehouse, who will need to modify data in the database.

2.1.1. Customers and Visitors

Customers and visitors, who are interested in purchasing a product from Hoist Warehouse or are just browsing the Internet, will be the primary users of the Web Site. These users will have varying degrees of IT literacy. However, any user who visits the Web Site will only need basic Web surfing skills to use the Web Site.

2.1.2. Authorized Hoist Warehouse Employees

Authorized Hoist Warehouse Employees will be users specifically assigned to make modifications to the product database. These users will have Intermediate IT literacy and will be responsible for adding, editing, and removing products from the product database.

2.2. Design Protocols

2.2.1. Web Site Diagram

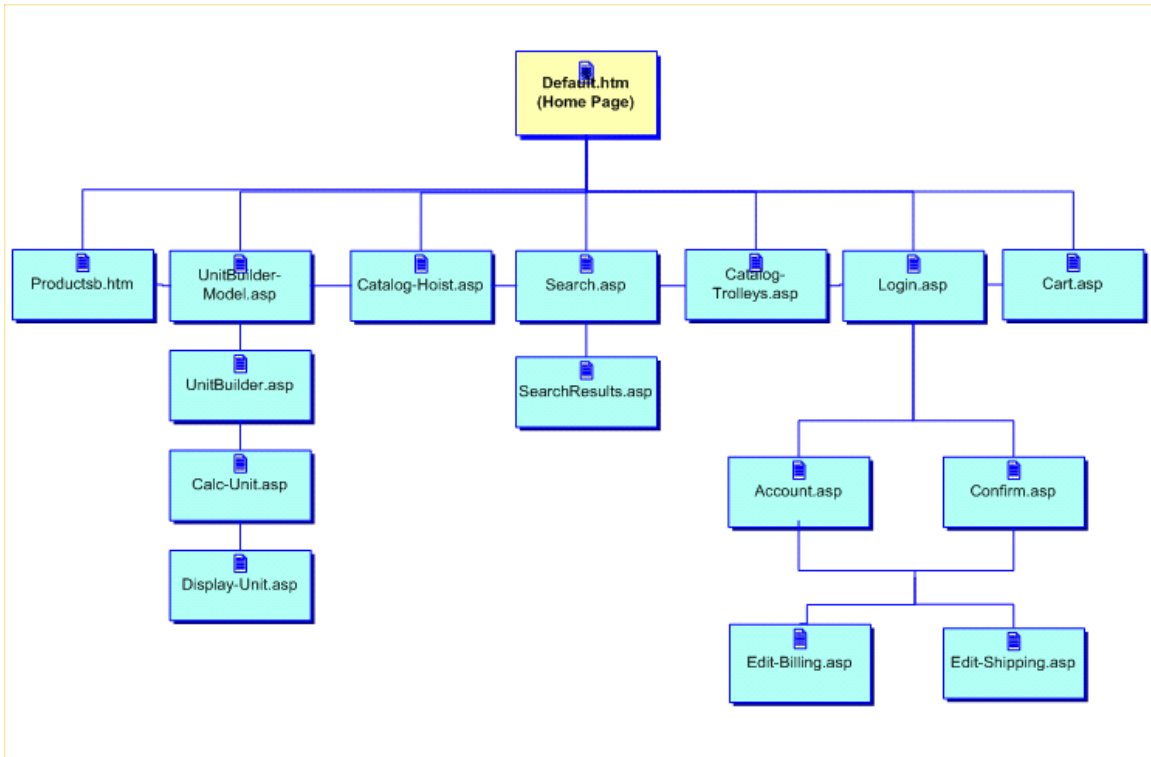


Figure 1. Hoist Warehouse Web Site Diagram

2.2.2. Colors

The Hoist Warehouse logo has a gold and black color scheme, so this same color scheme is used throughout most of the web pages in the project. The background color for each page is white, information headers have the color blue and standard informational text is black. Navigational links are black and have gold background and blue text when the user performs a mouse over on the link.

2.2.3. General Page Design

Most every page for the customers and visitors uses the template seen below with the logo streaming across the top, navigation area to the left, and certain key links (Home, Cart, Account, and Help) accessible from the top right above the main logo. The main content for each page is contained in the middle, below the main logo and to the right of the navigational structure.

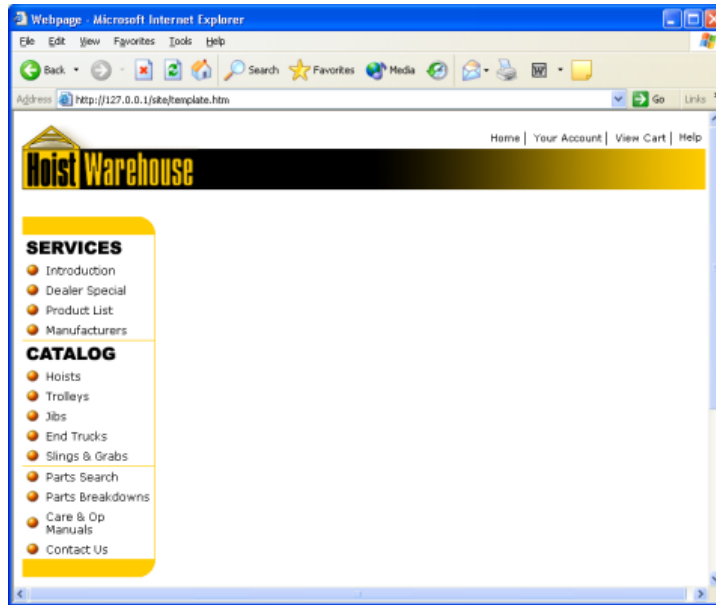


Figure 2. Sample Page

2.2.4. Database Design

The database is designed with SQL Server in order to optimize performance due to the large recordset (> 10,000 records). There are about 15 to 20 different tables in the database storing the following:

- Customer information
- Product inventory
- Sales
- Shopping cart
- Unit builder details
- Unit builder specifications chosen by customer

2.2.5. Unit Builder

The Unit Builder consists of a series of Web pages. First, the user will select a specific model hoist from a set of links. Then, there is a new page containing a series of drop-down boxes. The drop-down boxes each contain entries corresponding to options

for the specific hoist chosen. A Calculate button is also present to allow the customer to calculate the price of the built unit. The user also has the option to purchase the built unit.

3. List of Deliverables

1. Database designed in SQL Server 2000 containing product details, customer details, and orders.
2. User-friendly Web Site developed with ASP technology, with the following functionality:
 - a. Searchable product inventory
 - b. Viewable product details
 - c. Shopping cart and checkout.
 - d. Viewable order status via login
 - e. Unit Builder allowing customers to price quote hoists by picking and choosing different specifications for different models.
 - f. Administration page for Hoist Warehouse employees to add or delete items from product inventory.

4. Proof of Design

Because of the complexity of this project, it is necessary to verify the accurate completion of every module discussed in the deliverables. This next section details each aspect of the project and how it fulfills the deliverables promised. For each heading, there is a number and/or letter in parenthesis corresponding to the deliverable it fulfills mentioned in section 3 above.

4.1. Default (2)

The default home page contains some general information about Hoist Warehouse, including who they are, and what they do. There are also some images and information on product specials.



Figure 3. Default.htm – Homepage

4.2. Dealer Special, Product List, and Manufacturers (2)

This page is linked to from three different links from the Navigational structure, the “Dealer Special”, “Product List”, and “Manufacturers” links. Each link targets a specific portion of the page. This page provides information on specials being offered, a listing of the manufacturers, and a small list of some of the products.

SERVICES

- Introduction
- Dealer Special
- Product List
- Manufacturers
- Unit Builder

CATALOG

- Hoists
- Trolleys
- Parts Search
- Parts Breakdowns
- Care & Op Manuals
- Contact Us

Welcome to Hoist Warehouse

Thank you for visiting our site! Hoist Warehouse is a provider of parts and equipment for nearly every manufacturer of crane and hoisting equipment and accessories. We can help you identify the right equipment for your lifting application and research your hard to find replacement parts. Please feel free to browse our equipment [catalog](#) or call us at 1-800-331-5326. You can also e-mail or place an order online.

SPECIAL!

For OEM's and Dealers

We specialize in assisting small and medium sized hoist & crane service companies with their parts purchasing. We do the research and handle all the details- so you can focus on taking care of your customers. If you need it now or can't buy from the factory- call us and see how much you can save. We will negotiate an additional discount for your company in both parts and equipment.

Please e-mail or contact Luke Milton at **1-800-331-5326** to get your dealer discount.

FACTORY DIRECT DISTRIBUTORS FOR MANY LINES




Products

Brakes	Jib Cranes	Push Button
Bumpers	Lifting Devices	Radio Control
Controls & Motors	Load Positioners	Electrification
Crane Kits	Magnet Lifters	Hooks & Latches
Hoists	Overload Devices	Scales
Hoist Cables	ALL PARTS	Slings

Manufacturers

Abell Howe	Demag	Lift-All	Spanco
ACCO Wright	Detroit Hoist	LIFTTECH	Square D
Aeromotive	Duff-Norton	LO-HED	T.C. American
Allen Bradley	Dillon	Louden	Telemotive
AERO	Duct_O-Wire	Lynx	TUGIT
Budgit	Electromotive	P&H	US Monorail
Chester	Gleason Reel	R&M	US Safety Trolley
Coffing	Gorbel	Reuland	Walker Bux
CM	Ingersoll Rand	Saturn	Wampfler
Control Chief	Insul 8	Shaw Box	Whiting
Cutler Hammer	Harrington	Shepard Niles	Wright
Cleveland Tram	KONE	Siemens	Yale

Figure 4. Product List, Manufacturers, and Dealer Special

4.3. Search (2a)

Customers, who would like to search the product inventory, will use the search page. It includes the following for its interface:

- Text box for the user to input a search string

- Drop down box, allowing the user to specify a search by Item Number or Product Description
- Search Button to execute the search.
- Four radio buttons allowing the user to select one option for how input string will be searched in the product database:
 - Exact Match
 - Contains
 - Starts With
 - Ends With

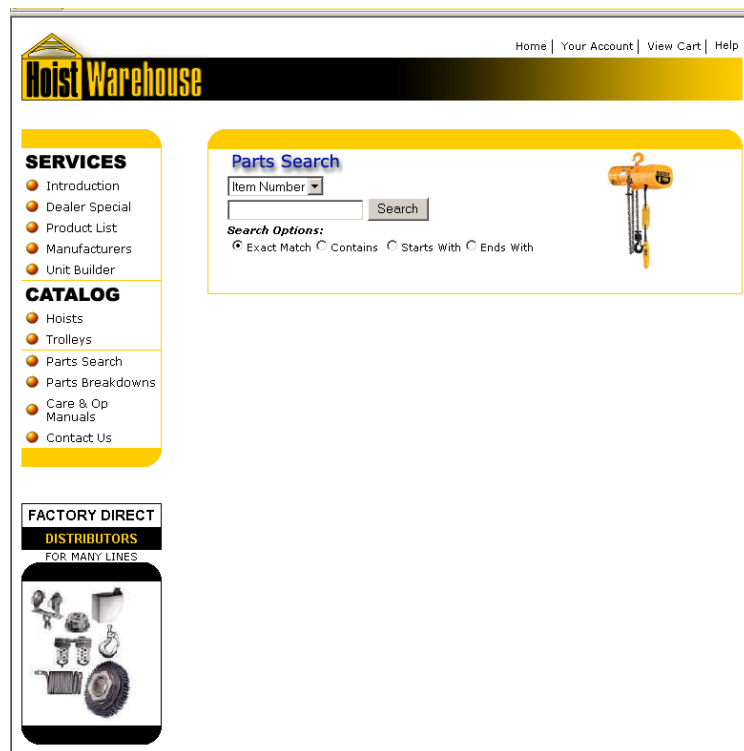


Figure 5. Search Page

4.4. Search Results (2a)

The search results page displays the results of the customer's product search. It contains a gold row header with the following text headers:

- Part # - Unique number of part

- Description – Name and description of product
- List Price – Displays actual list price
- Discount Price – Displays discounted price in red
- Availability – Allows user to add item to cart if available

The data corresponding to each product is displayed accordingly beneath each header column.

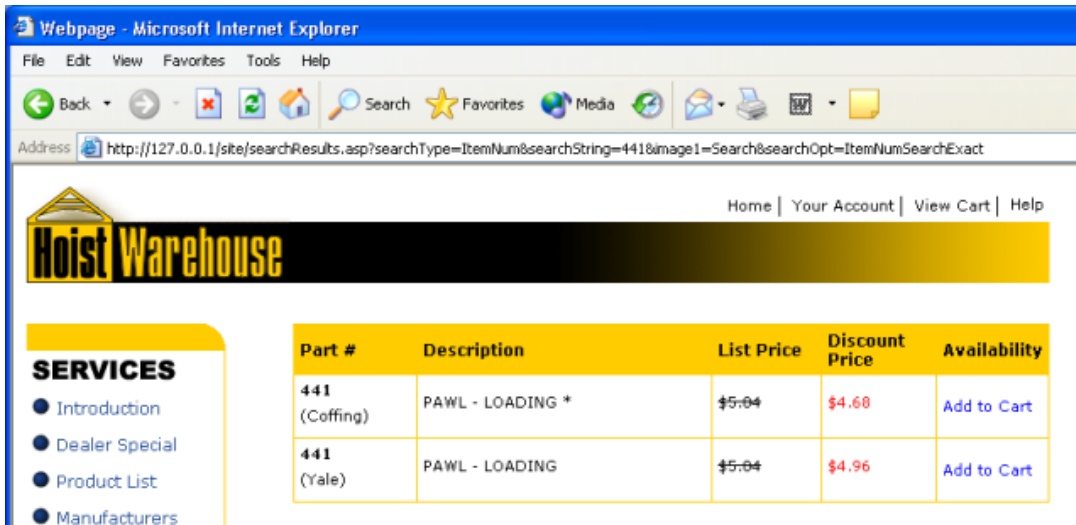


Figure 6. Search Results Page

4.5. Cart (2c)

The shopping cart page displays a listing of all the items the user has placed in the shopping cart. There is a header titled, “Your Shopping Cart”, followed by a table containing the following information:

- Quantity
- Product
- Availability
- Price
- Shipping

- Sub-Total

There are also buttons on the page to allow the customer to update contents of the cart as well as proceed to checkout and purchase the items in the cart.

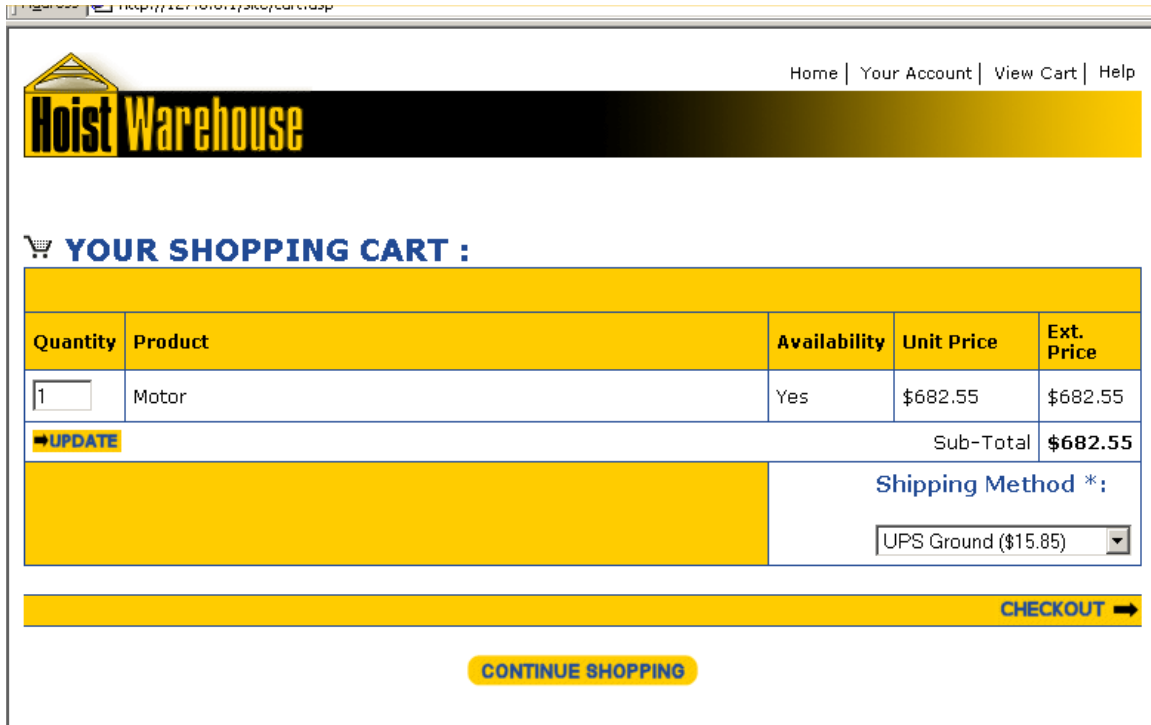


Figure 7. Shopping Cart Page

4.6. Account Login (2d)

If a customer has not signed in or created an account, the customer is brought to the login page when the checkout button is clicked from the Shopping Cart page. The customer has the option of signing in if he is an already existing customer or he can click on the “Create Account” button to create a new account.

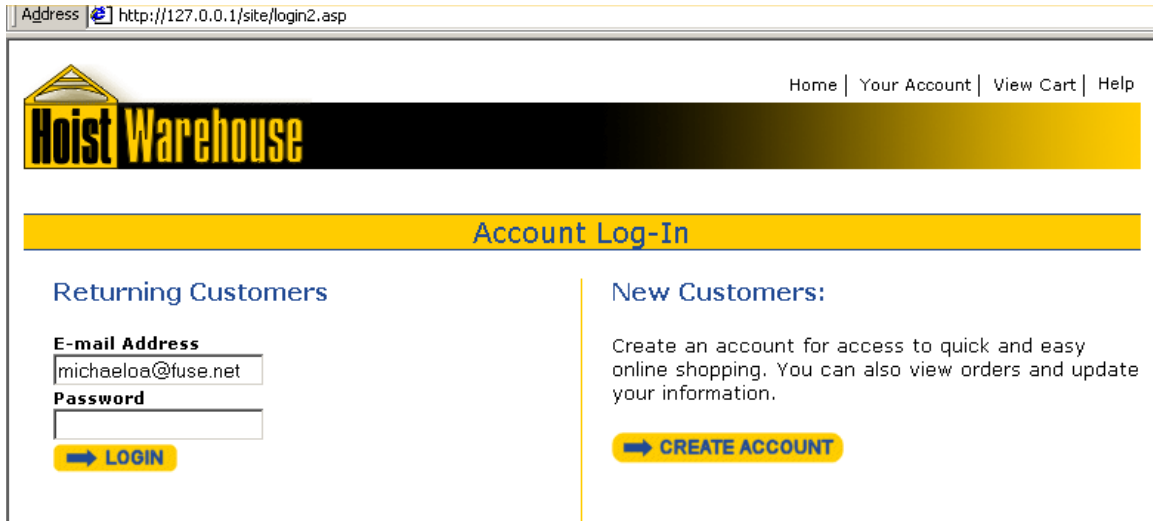


Figure 8. Account Login Page

4.7. Create Account (2d)

If the customer decides to create a new account by clicking on the “Create Account” button, he is brought to the Create Account page where he can fill in all his personal information and credit card information. The following fields are included on this page for filling out shipping and billing information:

- First and Last Name
- Company
- Address 1, 2
- City, State, Zip code
- Country
- Telephone and Fax
- Email
- Credit Card Number and Expiration Date

Address: http://127.0.0.1/site/account.asp

Home | Your Account | View Cart | Help

Hoist Warehouse

New Customers

Please fill out the information below in order to place an order with us.

* Indicates required field

Account Login

* Your E-mail address

* Choose a login password * Verify Your Password

Billing Information

* Payment Type * Credit Card Number
 Select Payment Type

* Expiration Date
 /

* First Name * Last Name

Company Name P.O. Number

* Address - Line 1

Address - Line 2

* City * State * Zip Code

* Telephone Fax

Shipping Information

Check here if same as billing

* First Name * Last Name

Done

Figure 9. Create Account Page

4.8. Order Confirmation (2d)

Once the customer creates a new account or logs in after placing items in the

shopping cart, he is brought to the order confirmation page, where his billing, shipping, and order information are displayed, along with the items he is purchasing.

Home | Your Account | View Cart | Help

Hoist Warehouse

Confirm Order

Your Order:	
Bill To: Mike Abrinica 1594 Yellowglen Drive Cincinnati, OH 45255 Visa 4231***** Exp: 12/2003 Edit Billing	44100 - Motor (ARO) Qty: 1 Price: \$682.55 Item Total: \$682.55 Sub-Total: \$682.55 Shipping: \$15.85 Total: \$698.40
Ship To: Mike Abrinica 1594 Yellowglen Drive Cincinnati, OH 45255 Edit Shipping	

* NOTE: Shipping costs will vary depending on weight of items(s) ordered.

PROCESS ORDER →

Figure 10. Order Confirmation Page

4.9. Edit Billing/Shipping (2)

From the Order Confirmation Page, the customer can choose to edit billing or shipping information by clicking on the appropriate links. The customer can then enter new information for the billing, shipping, or credit card information.

Home | Your Account | View Cart | Help

Hoist Warehouse

Edit Billing Info

Company:	<input type="text" value="P&G"/>	PO Number:	<input type="text" value="234231"/>
First Name:	<input type="text" value="Mike"/>	Last Name:	<input type="text" value="Abrinica"/>
Address 1:	<input type="text" value="1594 Yellowglen Drive"/>		
Address 2:	<input type="text"/>		
City:	<input type="text" value="Cincinnati"/>	State:	<input type="text" value="OH"/>
		Zip Code:	<input type="text" value="45255"/>
Telephone:	<input type="text" value="513-474-2594"/>		


Payment Type:	<input type="text" value="Visa"/>	Credit Card Number:	<input type="text" value="4231*****"/>
Expiration Date:	<input type="text" value="12"/>	<input type="text" value="2003"/>	

Figure 11. Edit Billing/Shipping Page

4.10. Account and Order Status (2d)

If an existing customer simply logs in without placing items in the cart, he is brought to his account information page. Here, the customer can see details on the most recent order, as well as billing and shipping information on file. The customer also has the option of editing billing and shipping information.

Home | Your Account | View Cart | Help



Welcome, Mike [Log-Out](#)

ACCOUNT INFORMATION

<p>Billing Information:</p> <p>Mike Abrinica 1594 Yellowglen Drive Cincinnati, OH 45255</p> <p>Visa 4231***** 12/2003</p> <p>Edit Billing</p>	<p>Shipping Information:</p> <p>Mike Abrinica 1594 Yellowglen Drive Cincinnati, OH 45255</p> <p>Edit Shipping</p>
--	---

Most Recent Order


Order Date: 2/7/2003

Item Number	Description	Quantity Ordered	Quantity Shipped	Unit Price	Ext. Price	Tracking/Pro #	Exp. Ship Date	Ship Date
H5210	PINS	1	0	\$0.91	\$0.91		2/12/2003	
H5217	PINS	45	0	\$0.22	\$9.90		2/12/2003	
7732E	1600 LB 2-Roller 25 ft/min	1	0	\$5,461.50	\$5,461.50		2/12/2003	
Sub-Total:		47	0		\$5,472.31			
					Shipping:			\$15.85
					Total:			\$5,488.16

Figure 12. Account and Order Status Page

4.11. Catalog (2b)

The catalog pages are a series of pages containing information on some of Hoist Warehouse’s most commonly ordered products. The pages consist of tables with a gold and silver color scheme containing specific information about the products.


Home | Your Account | View Cart | Help

SERVICES

- Introduction
- Dealer Special
- Product List
- Manufacturers
- Unit Builder

CATALOG

- Hoists
- Trolleys
- Parts Search
- Parts Breakdowns
- Care & Op Manuals
- Contact Us

Trolleys					
MFR.	CAP.	SPEED	MODEL	LIFT	LIST
Coffing	1	35 or 75 fpm	MT200-x-1	230/460v 3 phase OR 115/230v 1 phase	\$2,009.00
Coffing	1/2	35 or 75 fpm	MT100-x-1	230/460v 3 phase OR 115/230v 1 phase	\$2,009.00
Coffing	1/4	35 or 75 fpm	MT050-x-1	230/460v 3 phase OR 115/230v 1 phase	\$2,009.00
Coffing	2	35 or 75 fpm	MT400-x-1	230/460v 3 phase OR 115/230v 1 phase	\$2,009.00
Coffing	3	35 or 75 fpm	MT600-x-1	230/460v 3 phase OR 115/230v 1 phase	\$2,538.00

FACTORY DIRECT
DISTRIBUTORS
FOR MANY LINES




Figure 13. Catalog Page

4.12. Unit Builder (2e)

The Unit Builder consists of a series of Web pages, with option buttons and drop-down boxes. The customer can choose different options in order to build a specific hoist. The costs for each option are displayed along with the final price. The customer can also place the item in the shopping cart.

Unit Builder

Model	Capacity	Falls	Speed	Base Price
7714EL	1500 LB	2-SS Link	16 Ft/min	\$3,327.00

Control Type

- No Control
- Pull Chain
- Pendant (+\$375)
- 2 Mtr Pendant (+\$750)
- 3 Mtr Pendant (+\$1125)

Upper Suspension

- Lug/Adapter *
- Steel Snap Hook *
- Bullard Hook *
- Rigid Trolley (+\$750)
- Geared Trolley (+\$800)
- Motorized Trolley (+\$1590)

Lower Hook

- Steel Snap*
- Bullard (+\$138)

Lift

(\$58.00/ft past 10ft --Max=125ft)

Optional Features

Chain Basket

Fabric
 32ft Max
 (+\$122)

Piped Away Exhaust (+\$137)

Figure 14. Unit Builder

4.13. Help (2)

A link to a help page is located in the upper right corner of the screen above the logo. When clicked, the user is brought to a page discussing various help topics.

4.14. Administration Page (2f)

The administration page includes the Hoist Warehouse logo across the top, but does not contain the navigational structure seen by customers and visitors to the Web Site. This page contains two separate sections, one for adding products to the database, and another for deleting products.

The screenshot shows the 'Hoist Warehouse' logo at the top left. Below it is a yellow banner with the text 'Product Maintenance'. The page is divided into two main sections: 'Add Product' and 'Delete Product'. The 'Add Product' section contains a form with the following fields: 'Part #' (text input), 'Manufacturer:' (dropdown menu with 'ACCO Wright' selected and a text input for 'or Enter New Name:'), 'Part Description:' (text input), 'List Price: \$' (text input), 'Selling Price: \$' (text input), and 'Qty Available:' (text input). An 'Add Product' button is located at the bottom right of this section. The 'Delete Product' section contains a 'Part #' text input and a 'Delete Product' button.

Figure 15. Administration Page

4.15. Database Design (1)

The database is designed with the following tables and associated fields:

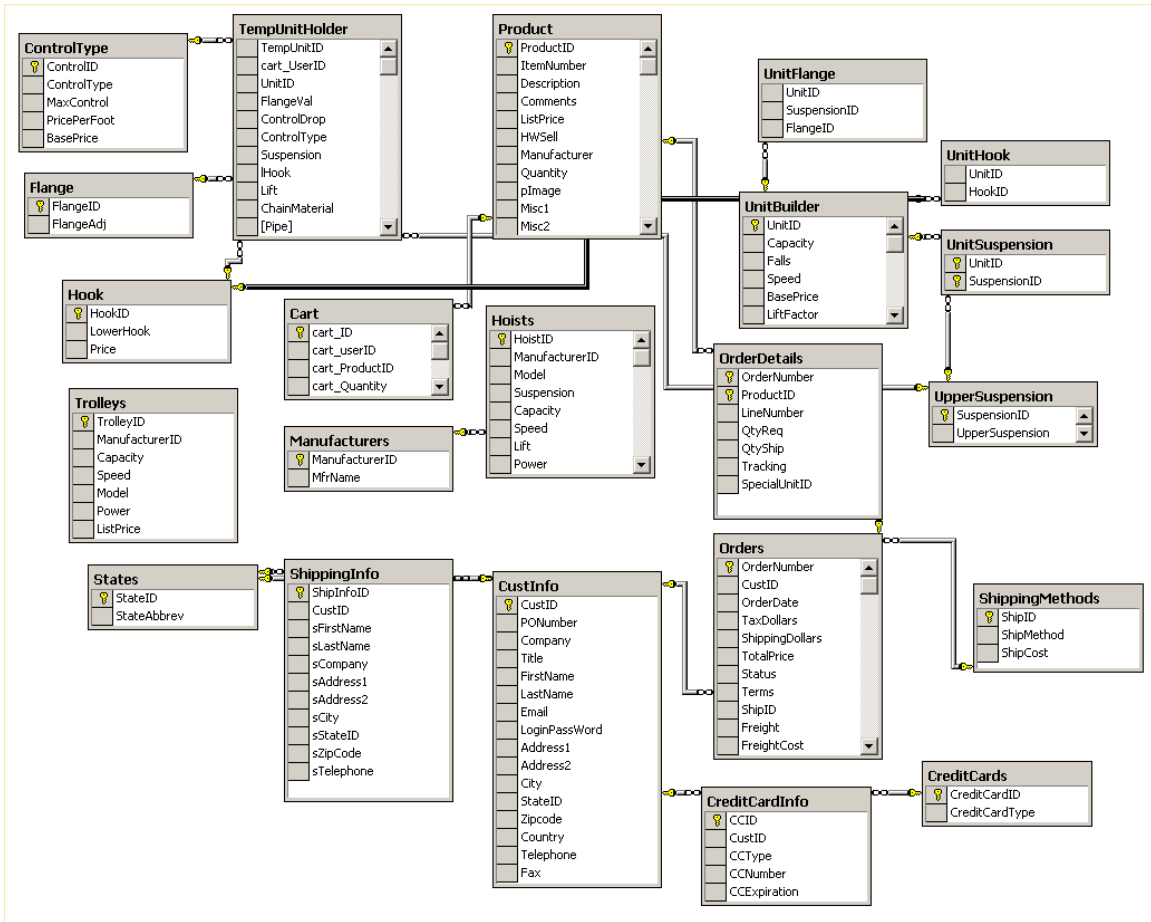


Figure 16. Database Entity Relationship Diagram

4.15.1. Cart

Temporarily stores shopping cart contents of each customer at Website.

4.15.2. CustInfo

Stores customer data for each customer who purchases from Hoist Warehouse.

4.15.3. Hoists

Stores specifications for different model hoists.

4.15.4. Manufacturers

Stores listing of all manufacturers Hoist Warehouse sells products of.

4.15.5. OrderDetails

Stores specific details on the orders each customer places.

4.15.6. Orders

Stores general information on each customer's order.

4.15.7. Product

Stores detailed information on each product Hoist Warehouse sells.

4.15.8. ShippingInfo

Stores shipping information for customers.

4.15.9. Unit Builder Tables (2e)

The Unit Builder involves data taken from several tables in the database. The tables are listed below.

- UnitBuilder – Stores data on specific model Hoists
- UnitFlange – Stores flange and suspension ID's associated with each Unit
- UnitHook – Stores hook ID's for each specific Unit
- UnitSuspension – Stores suspension ID's for each specific Unit
- UpperSuspension – Stores upper suspension values for each Suspension
- TempUnitHolder – Stores specific Unit specifications as created by the customer using the Unit Builder
- ControlType – Stores data on the Control used for the Unit
- Flange – Stores Flange Adjustment values for the Unit
- Hook – Stores information on the hook for each Unit

5. Testing Procedures and Results

In order to ensure successful completion of each module of the project, each module was tested along each step of the way. Each module was worked on one

component at a time and tested accordingly to be sure it worked. Testing was done by performing every task the end user could possibly perform when using this product. I documented the results, success or fail on a paper sheet, formatted similarly to the table seen below. If a failure occurred, I took necessary steps to review the module and make the appropriate corrections. I also had specific employees of Hoist Warehouse, run through using the module as if they were customers and inform me of their results.

(SAMPLE TEST REPORT)

Item	Test case #	Input	Expected output	Actual output	Pass/Fail	Reason for failure/success	Date
Search should yield listing of products	1	Trolley valve	Listing of products matching 'Trolley valve'	(Listing of products)	Pass		7/10/2002

Figure 17. Testing Results

6. Conclusions and Recommendations

This project has every portion completed in order to have a fully functioning E-Commerce Website. However, I recommend adding a few additional features, which can benefit the usage of this project. An interface for editing the items in the Unit Builder would be beneficial. Currently, there is a Web interface for adding and deleting products in the inventory database; however, this does not include being able to edit the contents of the Unit Builder. An order processing page would also be beneficial, allowing Hoist Warehouse employees to view current orders recently placed by customers and process them as complete. Currently, orders are created when a customer checks out and

completes an order, however, there is no interface for a Hoist Warehouse employee to complete the order or mark it as shipped or billed already. Since this is an E-Commerce Website, it is necessary to have security in place to ensure the privacy and integrity of data entered by customers at the site. The site and forms contain scripts for validating data, however, there is no security such as SSL that would prevent a hacker from successfully intercepting any data filled out on forms at the site. Since I didn't have direct access to the Web server hosting this site, I was not able to get SSL implemented. Before this site goes into production, I would recommend implementing the appropriate security on the Web server.

This site was developed using Microsoft Visual Interdev and ASP technology. However, Microsoft has done away with Interdev and ASP, replacing them both with the new .NET family of products. Since Interdev and ASP are no longer supported by Microsoft, and because .NET is proven to be far superior for development, I would recommend adopting .NET technology in the future when the time comes to upgrade the site.

Appendix A. Budget

Software	Cost (\$)
Microsoft SQL Server 2000 Enterprise Edition	\$19,999.00
Microsoft Visual Interdev	\$549.00
Total	\$20,548.00
<hr/>	
Hardware	Cost (\$)
Development Machine – Dell Dimension 8200 (4)	\$1678.00
Pentium 4 1.8GHz	
256MB DDR RAM	
40GB Hard Drive	
Web Server Hosting Web Site – Dell PowerEdge 500SC (4)	\$1589.00
Pentium III 1.1GHz	
512MB SDRAM	
40GB Hard Drive	
Database Server Hosting Production Database (4)	\$1911.00
Pentium III 1.4GHz	
1GB SDRAM	
120GB Hard Drive	
Total	\$5178.00
TOTAL COSTS:	\$25,726.00

Appendix B. Timeline

Project Start Date: Wed 2/27/02

Project Finish Date: Tue 3/11/03

Task_Data

Task_Name	Duration	Start_Date	Finish_Date
Research	35 days	Tue 1/8/02	Mon 2/25/02
Write Proposal	4 days	Tue 2/5/02	Sun 2/10/02
Present Proposal	1 day	Mon 3/11/02	Mon 3/11/02
Learn ASP (On Co-Op)	50 days	Mon 3/25/02	Fri 5/31/02
Design Sales Database In SQL Server	7 days	Thu 4/25/02	Fri 5/3/02
Design Framework for Web pages	44 days	Mon 5/6/02	Thu 7/4/02
Develop Database/Website Interaction	35 days	Thu 7/4/02	Sun 8/18/02
Write Senior Design II Report	11 days	Mon 7/15/02	Mon 7/29/02
Test Functionality/Document Results	14 days?	Fri 8/2/02	Sun 8/18/02
Present Working Prototype	1 day	Mon 8/19/02	Mon 8/19/02
Continue Developing Web Page Functionality	100 days?	Tue 8/20/02	Thu 1/2/03
Develop Unit Builder	15 days	Fri 1/17/03	Thu 2/6/03
Test and Refine Unit Builder	5 days	Fri 2/7/03	Thu 2/13/03
Develop Administration Pages	5 days?	Fri 2/14/03	Thu 2/20/03

Review/Test All Modules In Production	7 days	Thu 2/20/03	Fri 2/28/03
Refine, Correct and Enhance	6 days	Mon 3/3/03	Mon 3/10/03
Present Completed Project	1 day	Mon 3/17/03	Tue 3/17/03

Appendix C. Hardware

Various hardware was required to complete this project including a development machine for doing all the development work, a Web server, used to host the Web site, and a Database server, used to host the production database. For the development machine, I chose to use the Dell Dimension 8200. It provides superior performance for developing and testing applications and is reliable based on my own personal experience using it. To host the Web site, I chose the Dell PowerEdge 500SC. After reading reviews from *PC Magazine* (3), I determined this server would be the best choice for this business. It provides excellent performance and speed for a small to medium sized businesses like Hoist Warehouse at an affordable price. For the Database server, I also chose the PowerEdge 500SC, because of its performance and affordable price. However, the specifications are slightly different from the Web server, including a larger hard drive and more memory, which, are needed for the frequent queries, inserts and updates to the database when customers are at the Web site, placing orders.

Appendix D. Software

This project was implemented using a variety of different software technologies. The Web site implementation uses a set of files developed with Active Server Pages (ASP). ASP technology provides the necessary scripting/programming environment required to interface with the database for creating an order, and retrieving product information when a customer performs a search. Microsoft Visual Interdev was used to develop the pages. Since ASP is a Microsoft technology, Visual Interdev was the best choice as it's optimized for doing Web development with other Microsoft technologies.

The database implementation used Microsoft SQL Server 2000. The current database uses Microsoft Access and contains around 10,000 records. Query performance is very slow with Access, as it's not designed to handle databases of this magnitude. SQL Server 2000 serves as an excellent Database Management System (DBMS) for a database of this size. It provides much faster performance and allows for Stored Procedures to be used when a customer submits an order online or performs a search.

Appendix E. Testing Results

Date: 2/10/2003

Item	Input	Expected output	Actual output	Pass/Fail	Reason for failure/success
Search should yield listing of products	Trolley valve	Listing of products matching 'Trolley valve'	(Listing of products)	Pass	
Leaving fields blank when creating account	''	Error text in red indicating to input valid text	(Expected)	Pass	
Clicking on various navigational links	Click	Bring user to appropriate page	(Expected for most)/Error page for one	Passed for most/Failed for one page	Incorrect link
Create Account	Text	Message indicating account successfully created	(Expected)	Pass	
Login to Account	Email address and password	Account info page for correct login	(Expected)	Pass	
Configure Unit Builder	Click on radio buttons	Display Unit Builder contents chosen	Unit Builder contents are displayed	Pass	
Click on "Your Account"	Mouse click	Directed to login.asp	Directed to login.htm	Fail	Incorrect link

Appendix F. Usability Reports

This section contains the results of usability reports completed by various people. Each person used the Website just as a regular customer would and completed the usability report. Each usability report had the tester evaluate the Website based on several criteria, including navigational structure, clear organization, easy to find help, overall ease of use, and overall clarity of design. The first page is a blank usability report. The second page includes the average of all users' responses in one usability report.

BLANK USABILITY REPORT

Name:

User Computer Literacy: ___Low ___Moderate ___High

Ease of Use/Interface design

(rate each criterion on scale of 1 (poor) to 5 (excellent) or N/A (not applicable))

1 2 3 4 5 ___ N/A - Follows protocols for platform in use (i.e., Windows Interface, Browser Interface)?

1 2 3 4 5 ___ N/A - Program organized?

1 2 3 4 5 ___ N/A - Navigation within page?

1 2 3 4 5 ___ N/A - Icons and graphical symbols?

1 2 3 4 5 ___ N/A - Help available?

1 2 3 4 5 ___ N/A - Overall ease of use: what's the learning curve?

1 2 3 4 5 ___ N/A - Does it enable the user to do what the program is apparently designed to do?

Design Features

1 2 3 4 5 Clear interface

1 2 3 4 5 Good level of interactivity

1 2 3 4 5 Clear help

1 2 3 4 5 Use of color, icons, etc.

1 2 3 4 5 Satisfies intended use

Strengths:

Weaknesses:

Potential:

Overall Rating:

(Low) 1 2 3 4 5 (High)

Ease of Use/Interface design

(rate each criterion on scale of 1 (poor) to 5 (excellent) or N/A (not applicable))

4.8 - Follows protocols for platform in use (i.e., Windows Interface, Browser Interface)?

4.5 - Program organized?

5.0 - Navigation within page?

4.2 - Icons and graphical symbols?

5.0 - Help available?

4.9 - Overall ease of use: what's the learning curve?

5.0 - Does it enable the user to do what the program is apparently designed to do?

Design Features

5.0 - Clear interface

4.6 - Good level of interactivity

5.0 - Clear help

4.7 - Use of color, icons, etc.

5.0 - Satisfies intended use

Overall Rating:

5

Appendix G. References

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