

## The Cellar Door

# Final Design Document November 30, 2019

COSC 304 Final Project
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#### **Section 1: Mission Statement**

This project aims to provide an efficient and user-friendly database for consumers to shop for wine using a relational database and user interface programmed in Java. Our goal is to optimize search queries so that the customer can quickly and easily find any product sold by the wine store.

#### **Section 2: Executive Summary**

The wine industry is expanding at unprecedented levels in the Okanagan valley. In the last decade, many wineries use consumer-facing systems for online sales that are either outdated, inefficient, or not intended for the wine industry. We aim to provide an interface for wineries that will allow consumers efficiently to access any product that a winery might offer through the winery's website, and provide the ability for the user to access up to date and comprehensive information and specifications on any wine.

This will be achieved by modelling our database using the entity relationship model and constructing a UML diagram. The UML will be the basis of a relational database written in SQLServer, allowing for efficient, optimized, and fast search queries. The user interface will be coded in Java, allowing user access through the winery's website using JSPs and/or servlets. Customers will have their own login credentials, storing their contact information in the database for the winery's use. A standard shopping cart feature will allow the user to add or remove items and see their subtotal before placing an order. With SQLServer database implementation, the shopping cart will be saved in the database and will remain tied to the user until an order is placed or the user is removed from the system (allowing for a user to logout and bring up their shopping cart the next time they login). Implementing a SQLServer database through JDBC will also allow concurrent access from multiple customers and/or employees of the winery. The review feature will allow customers to leave a review for any product in the online shop, and allow customers to read reviews left by others. The

system will accept any payment method accepted by the winery, allowing flexibility from store to store.

Using the JDBC API's three-tier user-client architecture will protect the database from malicious attacks since the database is not directly accessible by the interface. Furthermore, using prepared statements in Java will safeguard against SQL injection attacks. Using constraints in the database, login credentials, and implementing customer, wineshop employee and developer views will prevent both malicious and unintended deleterious alterations to the database.

With the lack of efficient online store solutions for wineries in the Okanagan, our system will provide an invaluable service for Okanagan wineries. The customer-friendly interface and easy-to-use backend system will help with both increasing online sales and reducing the administrative overhead for winery teams, allowing winery staff to focus on what's most important: making incredible, world-class wines.

#### **Section 3: System Features**

Final Overall System	Category	Possible	Points	Comments / Code Files
Features		Points		
Documentation (10 total p	ooints)	•		
Executive Summary (up	Core	2		See above
to 1 page)				
System Features (2	Core	2		Current section
pages)				
Walkthrough with	Core	6		See Section 4
screenshots (up to 10				
pages)				
Hosting (5 total points)	•	•	•	
Running on cosc304 or	Core	5		https://cosc304.ok.ubc.ca/66122573/tomcat/final/index.jsp
external server				
Main/Home Page (up to 14	4 total point	s)	•	
Search for a product by	Core	1		Search on header.jsp and listProd.jsp
name				

Browse products by	Core	1	listProd.jsp organizes items by category id
category			
List products (by	Core	1	listProd.jsp
search/browse)			
List products with image	Core	1	product.jsp
Page header with menu	Basic	1	header.jsp
Page header shows	Basic	1	header.jsp
current logged in user			
Improved UI (user- friendly, images, etc.)	Basic	2	-Implemented Bootstrap 4 and css in WebContent/css/custom.css -Created an image carousel -Created cards as links to listProd.jsp, login.jsp, and newCustomer.jsp
Shopping Cart (up to 9 to	L tal points)		<u>                                       </u>
Add to shopping cart	Core	1	addcart.jsp
View shopping cart	Core	1	showcart.jsp
Update quantity (with data	Basic	2	showcart.jsp
validation)			
Remove item from	Basic	1	showcart.jsp
shopping cart			
Improved formatting/UI	Basic	1	Link to shopping cart on header
(e.g. in header bar)			
Cart stored in database between sessions	Basic	3	Cart is loaded from customer database on login (validateLogin.jsp), then saved on logout (logout.jsp)
Checkout (up to 9 total po	pints)		
Checkout with customer id	Core	1	order.jsp (note: we stopped using checkout.jsp and ask the user to input their userld and password before checking out)
Product Detail Page (up to			
Product detail page and item description	Core	1	product.jsp
Product detail has an	Core	1	product.jsp
image			
Product detail has an	Core	1	product.jsp (note: the way we set up the site, uploaded
image from database			images will go straight to the db, and indeed all of our images are from the db. However, image URLs are supported as well)
User Accounts/Login (up			
Create user account page	Basic	3	newCustomer.jsp
Create account with data validation	Basic	3	newCustomer.jsp (all fields required, email validation at html input level, check for whether user id already exists in the db)

Login/logout	Core	2	login.jsp, validateLogin.jsp, logout.jsp, header.jsp
Register user/Forgot	Advanced	4	Register user: newCustomer.jsp
password email			No forgot password email functionality
Page listing all orders for	Core	1	customerOrder.jsp
user			
Product Reviews (up to 5	total points	)	
Ability to enter a review	Basic	2	product.jsp
on a product			
Display product review on	Basic	1	product.jsp
product detail page			
Administrator Portal (up t	o 21 total po	oints)	
Secured by login	Core	1	validateLogin.jsp; If user that logs in has admin privileges, the admin portal shows up on the header and is accessible. If not, the portal does not show up on the header and the pages will redirect to login
List all customers	Core	1	listCustomer.jsp
List report showing total	Core	1	listOrder.jsp
sales/orders			
Add new product	Basic	2	addProduct.jsp; option to add an image file to be sent to the db
Update/delete product	Basic	2	Update: updateProduct.jsp; we felt that deleting a product from the db was not a useful feature for our store
OR: Upload a photo to	Advanced	4	addProduct.jsp and updateProduct.jsp
database for product			
Database System/Genera	ĺ		
User interface and navigation/usability		Up to 5	Bootstrap formatting, automatic display/hide of options based on login (login, admin, your information, logout), basic theme of site
Others (your suggestions)		Up to 5	The automatic hiding/showing of different user options based on login status (logged out, logged in as customer, logged in as admin), use of icons in header, search bar in header, carousel on home page, use of custom logo for header and as watermark on images, our hilarious and informative product descriptions
Total: (out of 50 with			
maximum of 10 bonus			
marks. i.e. 60 points out			
of 50 is max.)			

The Cellar Door is an online wine shop that allows users to create accounts, build carts from a wide selection of products, and place orders. The shop is hosted on the Computer Science 304 server and users who visit are

greeted with a carousel of pictures taken by group member Barret Jackson. The home page contains links to the product list, the login page, and the sign up page, all accompanied by more wine-related pictures and a short piece of flavour text. This site review will explain the major features of the Cellar Door, and give insight as to how they were implemented.

If the products link is selected from the home page, the user will be brought to a list of all products hosted on the Cellar Door, organized by category. This page features a search bar which can also be found at the top right corner of the website at all times. Upon clicking a product, the user will be brought to a page featuring a picture of the product in question, as well as the product id, price, and a short product description. Each picture features a watermark of the Cellar Door logo, which can also be seen on the top left of the website, acting as a link to the homepage. Users can add the product to the shopping cart, return to the list of products, or leave a review for other users to see accompanied by a rating from 1 to 5.

Upon adding an item to the cart, the user will be shown what is currently in their cart. At this point they can update the quantity of items they would like to purchase (if a quantity of 0 is entered, the product will be removed from the cart.) Furthermore, through the inCart relation, the carts are saved to the database and linked to the user by their userld. This means that users can create a cart, log out, and later log back in to find their cart unchanged from how they left it. When an order is placed, the user is asked to enter their account information before the shopping cart is emptied and the user is brought to a page giving them their order reference number and a link back to the home page.

When logged in as a customer, the header of the website is updated with a link that will display the customer information. If, however, a user is logged into an account with admin permissions, an additional option labelled "Admin" will appear. Clicking this displays a drop down menu with various options. Admin accounts can choose to view a page listing of all orders made, a page that lists the sum of money made each day, and a page listing all registered accounts including drop down. They can also choose to upload a new product to the

database by entering a name, price, description, category, and representative image. Finally, admins can update an existing product by changing its existing values.

The visual design of the page was done using bootstrap formatting. The page was created using a primarily grey color palette to impart a classy feel, including a grayscale CSS on the homepage for all images. At the top of the website, the header bar contains links to the product list and shopping cart which are accessible on all pages. Furthermore, the header dynamically changes depending on the status of the user. If a user is not logged in, a "Login" button will appear that displays a drop down which allows users to log into their account. When logged in, the header will remove the "Login" button and replace it with a link to a page displaying the users personal information. A welcome message containing the logged in users name will also appear alongside a log out button. If the logged in user is also an admin, the previously mentioned "Admin" button will appear as well.

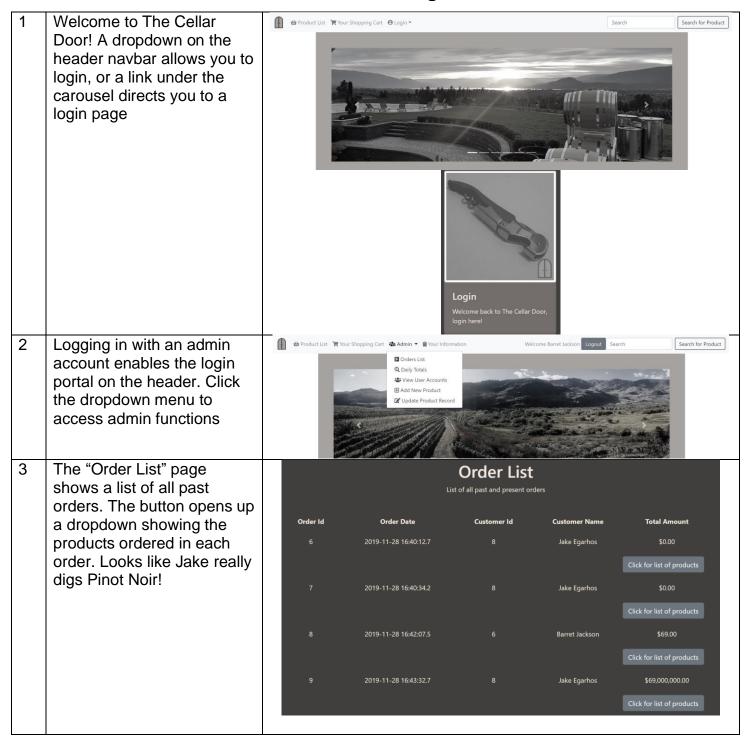
Although the current site functions on a basic level, many new features and security measures will need to be implemented before this site could go live. Features which will be implemented in the future are adding payment options, giving the customer the option to specify a billing address and a shipping address on checkout, updating a logged in user's cart in the database in real time (rather than upon logging out), and expanding admin options such as providing a toggle button on the "Active Users" page that would allow an admin (or perhaps only the site owner) to grant or revoke admin privileges from any user. Regarding security, implementing cryptographic hashing on a user's password using randomly generated hash salts unique to every user, and changing how form data is passed to the server to prevent script injections are top priority. Another way to improve security is to eliminate user ids and passwords and allow the user to login using either their Facebook or Google accounts.

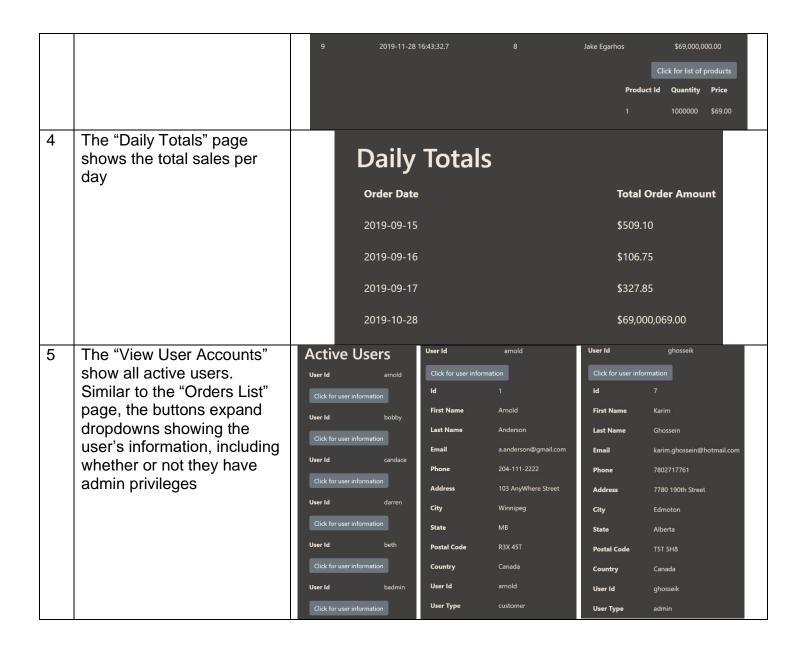
#### Section 4: Walkthrough

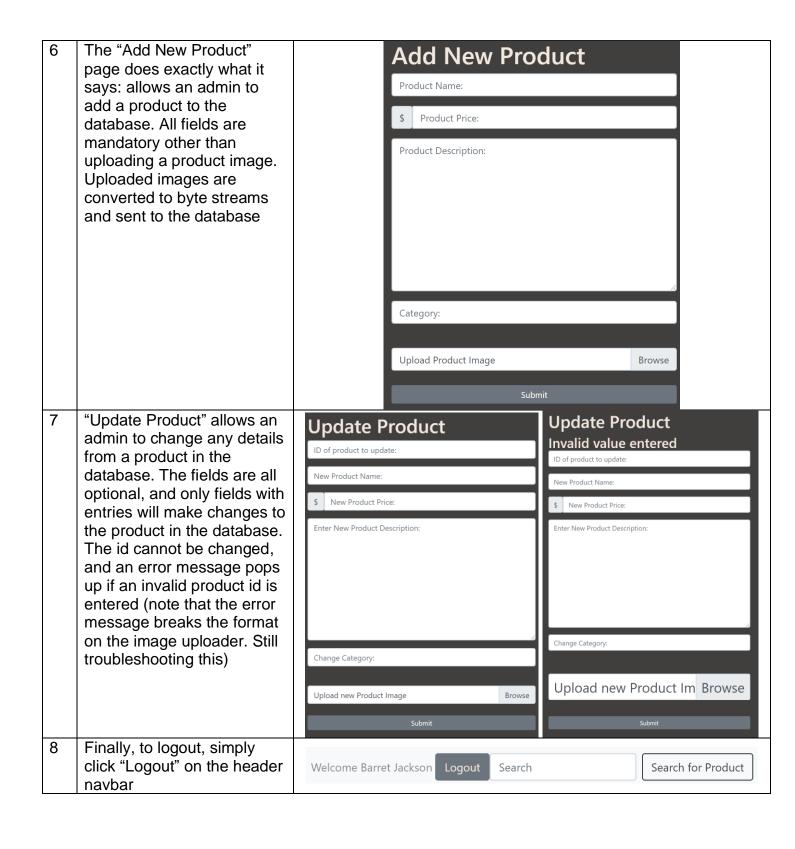
To follow along, access the website at

https://cosc304.ok.ubc.ca/66122573/tomcat/final/index.jsp

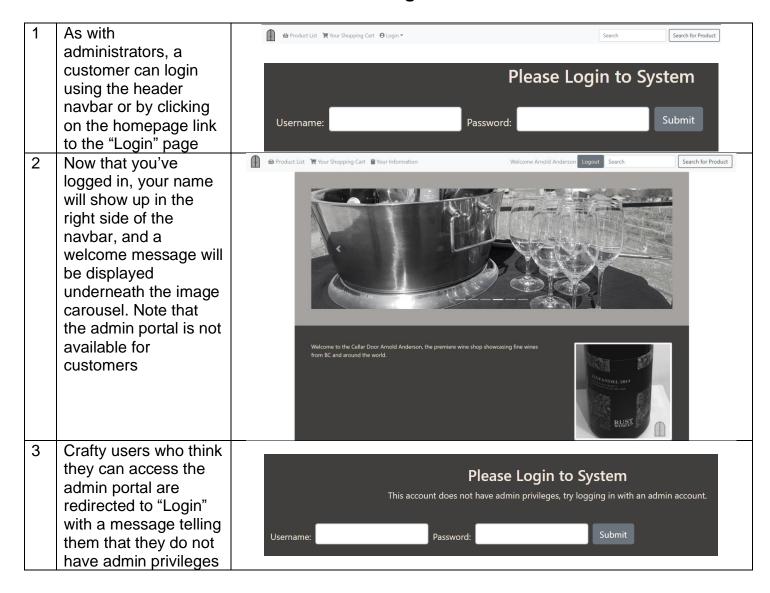
#### **Subsection 4.1: Administrator walkthrough**



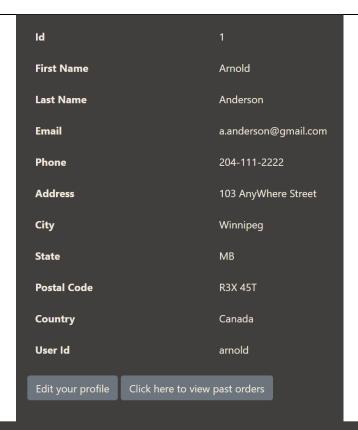




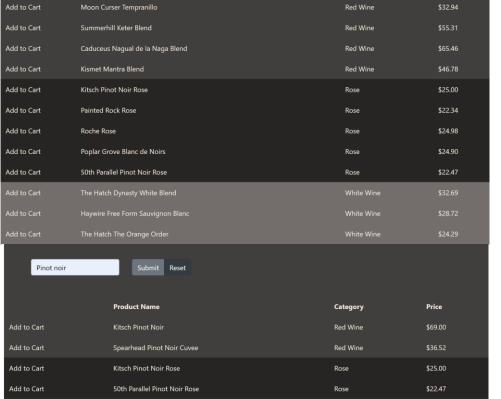
#### **Subsection 4.2: Customer walkthrough**



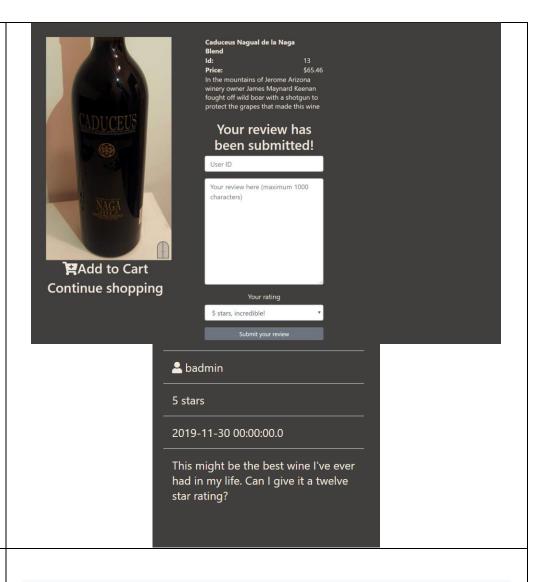
The "Your Information" button on the navbar links to a page showing the customer information for the current user (note that although there is a button called "Edit your profile", this feature has not been implemented yet) and an option to view past orders (more on this later!)



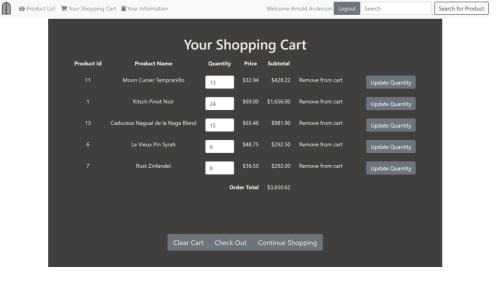
5 Let's start shopping! Click on either the "Product List" button in the navbar, or the link on the homepage. The "Product List" page has a list of all products organized by category. The user can either browse through the page or search by product name in the search form on the page or in the navbar



Clicking on the name of the product brings you to the "Product" page. On the left is an image of the wine from the database (if it exists), an image from a URL (if it exists), an option to "Add to Cart", an option to "Continue Shopping, the wine's name, id, and price, a short description, an option to add a review, then a list of reviews below organized by the user who left the review.



Let's order some wine! Clicking "Add to Cart" brings you to the shopping cart. Looks like Arnold is having a party! A user can change the quantity of items in their shopping cart by inputting a different value and clicking "Update Quantity." The subtotals and Order Total update automatically. Inputting a quantity of zero or clicking "Remove from cart"



removes the item from the user's cart. Clicking "Clear Cart" removes all the items from the user's cart. Finally, logging out of your account automatically saves your cart to the database so that it can be retrieved the next time you login (remember to logout!) 8 Let's put in Arnold's order for his party. Clicking on "Check Out" sends us to the order page. Just in case you leave a Login to complete the transaction: large order in your Username shopping cart and leave your computer alone for a few Password minutes, the system asks you to confirm your login details before checking out (or to create a new Or sign up for an account! account if you don't have one already. Don't worry, your shopping cart will be carried over when you login).

9 Party time! Arnold's order has gone through and will be shipped out soon.
He's given a reference number and his name and customer number are displayed underneath a table of the products he's ordered

Your order:						
Product Id	Product Name	Quantity	Price	Subtotal		
11	Moon Curser Tempranillo	13	\$32.94	\$428.22		
	Kitsch Pinot Noir	24	\$69.00	\$1,656.00		
13	Caduceus Nagual de la Naga Blend	15	\$65.46	\$981.90		
	Le Vieux Pin Syrah		\$48.75	\$292.50		
	Rust Zinfandel	8	\$36.50	\$292.00		
			Order Total	\$3,650.62		

Order completed, will be shipped soon!

Your order reference number is: 12

Shipping to customer: 1 Name: Arnold Anderson

Return to homepage

10 Let's take a look at Arnold's past order in his "Customer Orders" page. Similar to "Order List" in admin, this page lists all past orders; however, since Arnold is a customer, he only gets to see his orders.

Order List All of the orders that Arnold Anderson has ever placed.							
Order Id	Order Date	Customer Id	Customer Name	Total Amount			
12	2019-11-30 17:21:02.7		Arnold Anderson	\$3,650.62			
				Click for list of products			
			Product	ld Quantity	Price		
				24	\$69.00		
					\$48.75		
					\$36.50		
			11	13	\$32.94		
			13		\$65.46		

11 Let's logout and sign up a new customer account. Under the "Login" dropdown on the navbar, click "create a new account here!" or click on the card for creating a new account on the homepage



### **9** Sign up

What's that, you want to join the club? Come on in, everyone is welcome!

