



# Loyalty Rewards System

---

CIS 3343

PoinTech



## Contents

Sponsor Decision Regarding Systems Proposal .....	1
Final Problem and Requirements List .....	2
Requirements List .....	3
Required System Business Rule List .....	5
Required System Business Activity List .....	6
Required System Entity Relationship Diagram .....	7
Required System Data Dictionary .....	8
.....	9
Required System CRUD Matrix Use Case Scenarios .....	11
Required System Event Response Table .....	25
Required System Data Flow Diagram (DFD) .....	26
Required System Feasibility Analysis .....	29
Data Acquisition and Data Conversion Strategy .....	32
Initial Draft of Testing Plan for Application and Database Creation .....	34
Application Prototype .....	35
.....	43
Christine Steinhauer Reports .....	45
Luis Rodriguez Reports .....	49
Jaime Rodriguez Reports .....	55
Hamza Saeed Reports .....	58
Updated Listing of Authors per Deliverable .....	62
Complete List of References .....	64

## Sponsor Decision Regarding Systems Proposal

### Acceptance of Proposal

With this acceptance of this proposal, PoinTech is authorized to proceed with services for this project, as described in the project proposal section.



The Cellar Door's Representative Signature

11/2/22

Date of Acceptance



PoinTech's Representative Signature

11/2/22

Date of Acceptance



## Final Problem and Requirements List

### Client Background

The Cellar Door is a local Katy winery aiming to provide excellent quality service, food, and wine. After approaching the client, we discovered they use a manual customer metrics system without a central data source. Although their manual system works, it is very time-consuming for the employees to do everything by hand, which is inefficient.

### Main Problems

The Cellar Door lacks an automated rewards system to update their customer's reward membership status. With the current manual system, The Cellar Door must complete time-consuming manual work to keep up with their rewards program, such as transporting data from paper sources to excel and crunching numbers by hand to keep their customers rewards updated.

The main problems the current system include:

- No central data persistent source to run customer metrics
- Manually updating customer's rewards status
- Calculation errors due to updating rewards by hand
- The winery is unable to tell when the most recent update of the membership rewards has occurred
- The customers must call or go up to the winery to see their rewards status



## Requirements List

Rank	Requirement Description	n)	Cur Lev	Req Lev	Comments	Key Description
<b>Mandatory Requirements</b>						
1	Automation of the member signup process	y	low	high		See ERD, Point adjustment
2	Computer analysis of client to determine if it meets minimum requirements to sustain our system	y	high	high		See ERD, Customer
3	All data needs to be stored safely and securely	y	medium	high		
4	Build a database on-premise in the form of mini server	y	low	medium		
5	Create and test the system before putting the system into place	y	medium	high		
6	The foundation of the database will be Excel. The system must be able to read and write Excel documents	y	medium	medium		
7	Set a unique primary key to every member of the wine club such as ID	y	medium	high		See ERD, Customer
8	Membership registration must be available online	y	low	high		
9	System needs to have permission-based roles assigned to all users of system	y	low	medium		See ERD, Admin
10	Migration of data from old system to new system	y	medium	medium		
11	Once a user submits information in the sign-in section of the website information must be stored on the database	y	low	high		
12	When a customer is prompted to input information at the store his relevant data must be called properly	y	medium	high		
13	Customer must have the ability to input their information such as Phone number or name through the form of keyboard	y	low	medium		
14	Manipulation of customer points and discounts must be allowed only to manager level users	y	low	medium		See ERD, Admin
15	Must have a user input interface for those with the permissions allowed to create and insert new discounts and offers as they wish	y	low	medium		See ERD, Admin
16	Automate the calculations of points earned and points rolled over to next month	y	medium	high		See ERD, Point adjustment
17	Make sure the rewards points are accumulated every month	y	high	high		See ERD, Point adjustment
18	Train current staff and managers on how to use our system	y	medium	high		
<b>Key Requirements</b>						
1	Create a clean and simple user interface for both members and employees for ease of use and minimize mistakes	y	medium	high		
2	The business side of the system must have a proper design for navigation	y	low	high		
3	Analyze the general business functions and their database needs	y	low	high		
4	Build resilience into our system to make sure all data is kept safe and accessible	y	low	high		
5	Create a system strong enough to be able to handle multiple users signing up and accessing data simultaneously	y	medium	high		
6	Present the different membership types and their benefits received to the customer, along with the spent dollar point earned ratio	y	medium	high		See ERD, Wine club customer membership
7	Only required information such as customer Address, Email, Phone Number, Name should be asked for. No additional information pertaining to the customer	y	high	high		
8	Identify all data types that are going to be used and how to use them to our advantage	y	low	medium		
9	The system must have tags to represent each discount	y	low	medium		See ERD, benefits
10	Implement input, processing, and output controls (data validation). Test to ensure basic data validation is in place (for example, member photo)	y	low	high		
11	System user management and authentication - Create separate user accounts for the winery employees to login. Different levels of role access	y	low	medium		See ERD, Admin
12	Define user login parameters: password requirements (minimum length, complexity, how often it needs to be changed)	y	low	medium		
13	Define backup procedures. Database backups and offline backups. How often will database backups run, will they be run automated or manual	y	low	medium		
14	Allow the system to be able to be changed or added to with relative ease	y	low	high		
15	Maintainence schedules for maintaining the program	y	low	medium		
16	Ensure system has a user activity audit trail, a system log of all administrative and user actions that have occurred. This will be helpful when trying to troubleshoot	y	low	medium		
17	Evaluate where, how and where we can improve our system	y	low	medium		
<b>Desirable Requirements</b>						
1	Get the winery name out to more potential customers	y	medium	high		
2	Develop reports – 1) Member listing by membership level, 2) Member listing by location, 3) List of members whose membership is ending soon	y	low	high		See ERD, Customer
3	Counter or tracker that shows the age of membership status	y	low	medium		
4	Digital receipt of points accumulated and used	y	low	high		
5	Have built in analytics to show reports regarding customer subscription and other metrics	y	low	high		
6	In-store sign-up Kiosk	y	low	medium		
7	Built in marketing system to allow members to be reminded of rewards/offers they have	y	low	medium		See ERD, benefits
8	Use customer data to put the most popular redeemed rewards as the first thing seen by the customer	y	low	medium		See ERD, benefits
9	Implement a member referral link system that current members can share and both the member and recipient both get benefits from	y	low	medium		See ERD, benefits
10	Use customer data to send reminders of events that may be held at the winery	y	low	medium		
11	Send redeemable items to loyal customers that have held membership status for some time	y	low	medium		See ERD, benefits
12	Track customer birthdays and send coupons as birthday gifts to encourage business	y	low	medium		See ERD, benefits
13	Have filtered views for any metrics and information	y	low	medium		
14	Coupon Management System to motivate customers to return	y	low	medium		
15	The theme of the overall system must match the business desired color scheme	y	low	medium		
16	Allow 24/7 access for customers and employees to access user accounts	y	low	medium		
17	Sign-up authentication from users such as digital signature as a precaution	y	low	medium		
18	Allow membership cancelation from users account as an option	y	low	medium		See ERD, Customer
<b>Dropped Requirements</b>						
1	Allowing wine club members to log on to the website and update their credit card information on file	n	low	medium	out of scope	
2	Work to retain existing customers	n	low	medium	would already be accomplished through implementation	
3	Get customers to keep coming back	n	low	medium	would already be accomplished through implementation	
4	Build positive relationships	n	low	medium	would already be accomplished through implementation	





## Required System Business Rule List

- Verify customer age to vet out underage individuals
- Give customer service that stands above that of other establishments
- Provide customers with food and drink samples if asked
- Make sure the entire customer area is clean
- Apply customer discounts where required



## Required System Business Activity List

### Daily Business Activities

- Count the registers contents at opening and closing
- Actively encourage customers to sign up for the wine club

### Monthly Business Activities

- Consider all related factors and calculate employee wages for the month
- Take stock of the remaining inventory
- Updating customer data and new wine club members in the records

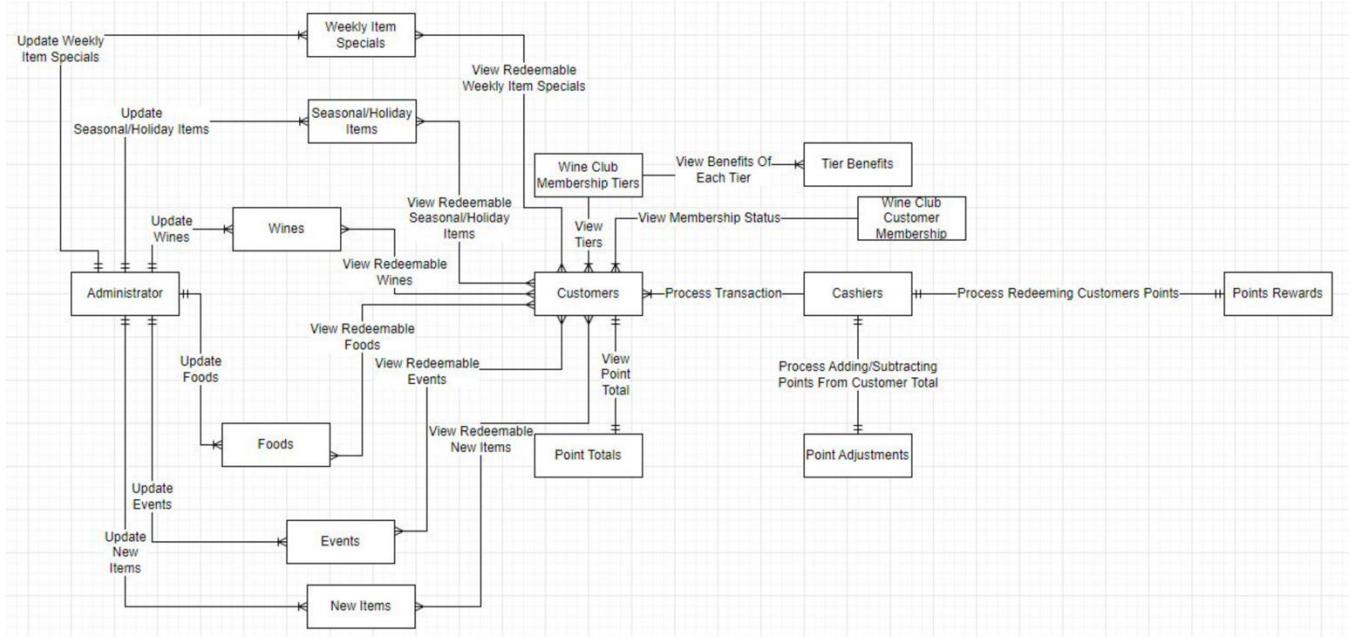
### Quarterly Business Activities

- Making note of quarterly business profit margins
- Discuss the competition in the local area and their effects on the business
- Work out solutions to help improve the business

### Yearly Business Activities

- Calculate the total profits at the end of the year
- Discuss the expected profits and goals for the coming year
- See if the prior set out goals were met, and discuss why they weren't met if they weren't satisfied

## Required System Entity Relationship Diagram





## Required System Data Dictionary

New Items	Entity which will contain all related information for new items that the business wants to hold.	item_name	varchar	40	Y	N
		item_price	int	10	Y	N
		item_type	varchar	20	N	Y
		item_age	int	10	N	Y
		item_points	int	10	Y	N
Points Total	Entity meant for containing information of all customers points and the transactions done for the customer. Such as points gained and etc.	points_current	int	10	Y	N
		points_gained	int	10	Y	N
		points_total	int	10	Y	N
Customers	Contains Customer information meant for identification and maintaining distinction between various customers and to better consolidate customer information.	cust_name	varchar	40	Y	N
		cust_id	int	10	Y	N
		cust_address	varchar	255	N	Y
		cust_phoneNum	varchar	10	N	Y
		cust_points	int	10	N	Y
		cust_discounts	varchar	10	N	Y
Wine Club Membership Tier	Entity meant to store the values for all different membership tiers.	Mem_Tier	varchar	60	Y	N
Tier Benefits	Entity that stores information of what benefits are provided for each tier.	Benefits	varchar	60	N	Y
Customer Membership	Entity that contains the current membership status of the customer.	cust_membership	varchar	20	Y	N
cashiers	Entity that contains the various cashiers that are registered into the system and their identification.	cashier_name	varchar	30	Y	N
		cashier_id	int	10	Y	N
Point adjustments	Place to store information regarding all point adjustments	point_adjustments	int	10	N	Y

Entity Name	Entity Description	Col Name	Data Type	Length	required Y/N	Nullable Y/N
Weekly Item specials	This is a entity that is related to containing all the required information required of any weekly special items that the business wants to add.	item_name	varchar	40	Y	N
	This contains all information such as name, the type of item, age and points that this item provides.	item_price	int	10	Y	N
		item_type	varchar	20	Y	N
		item_points	int	10	Y	Y
		item_age	int	10	Y	N
Wines	This is a entity that is related to containing all the required information required of all the current wines that the business has in stock	wine_name	varchar	40	Y	N
		wine_price	int	10	Y	N
		wine_type	varchar	20	N	Y
		wine_age	int	10	Y	Y
		wine_points	int	10	Y	Y
Administrator	A table dedicated to permissions and what permissions each member who has access to the system.	Admin_name	varchar	40	Y	N
		Admin_level	varchar	40	Y	N
Foods	Entity which contains all information regarding the food items on the menu. Information contains the price and the point value it contains.	item_name	varchar	40	Y	N
		item_price	int	10	Y	N
		item_type	varchar	40	N	Y
		item_points	int	10	Y	N
Events	Entity that contains any of various events and sales that the business may want to run and this is the designated place to store all information regarding that.	event_name	varchar	40	Y	N
		event_id	int	10	Y	N
		event_type	varchar	20	Y	N
		event_value	int	10	N	Y





Download Customer CRUD Matrix

Activity	weekly item specials	seasonal/holiday items	wines	administrator	foods	events	new items
membership account creation				CRUD			
manual input to excel	RU	RU	RU	CRUD	RU	RU	CRUD
Point of Sale	R	R	R	CRU	RU	R	R
Manually checks excel	R	R	R	R	RU	R	R
Payment process and print receipt							
Adding or removing points	RU	RU	RU	CRUD	RU	RU	RU
WC membership Tiers	customers	Point totals	Cashiers	Tier benefits	WC Customer Membership	points rewards	points adjustments
CRUD	CRUD		CRUD	RU	CRUD		
CUD		CUD	CRUD		RU	CRUD	CRUD
R	R	RU	CRU	R		R	R
RU		RU	R		R	RU	RU
	R					R	R
	R	CRUD	CRUD			CRUD	CRUD



## Use Case Scenarios

Vijay Kolla

<b>USE CASE NAME:</b>	Customer requests to end his membership with the business	
<b>ACTOR(S):</b>	Customer	Winery employee/manager.
<b>DESCRIPTION:</b>	Customer comes to the business requesting to end his membership for whatever reason they may have.	
<b>REFERENCES</b>		
<b>TYPICAL COURSE OF EVENTS:</b>	<b>Actor Action</b>	<b>System Response</b>
	1. Employee will log into the membership portal.	2. Employee will be presented with the portal home page.
	3. Employee will navigate to the member list section	4. Employee will proceed to choose the option of deactivating the customer membership and removing customer payment information.
	5. Employee will enter a note on reason of why the membership is being deactivated by asking the customer.	6. Customer information regarding payment and other sensitive information will be removed from the system and then the list will be updated to show the current new member list.
<b>ALTERNATE COURSES:</b>	1. Employee does not have the permissions to access to login to update the member list.	2. Instead of the membership holding customer being there a relative might be the one requesting it and due to not having direct confirmation the membership is not cancelled.
<b>PRE-CONDITION:</b>	1. Employee has an account with permissions to edit the membership list	2. Customer is an actual member of the program and not a random individual.
	3. Stable internet connection for the system to properly update the database in real time.	
<b>POST-CONDITION:</b>	The business has successfully deactivated the customer membership and the customer will not be charged monthly	
<b>ASSUMPTIONS:</b>	1. The person requesting deactivation of the membership is the actual customer and not anyone else.	2. The person the customer is talking to for the process of deactivating membership is staff which has the required permissions to access and modify the membership status.

<b>USE CASE NAME:</b>	Customer accesses website and signs up as a member	
<b>ACTOR(S):</b>	Customer	
<b>DESCRIPTION:</b>	Customer decides to become a member of the wine club is notified of their ability to sign up through the website and is going to do so.	
<b>REFERENCES</b>		
<b>TYPICAL COURSE OF EVENTS:</b>	<b>Actor Action</b>	<b>System Response</b>
	1. Customer will navigate to the business website.	2. Customer will proceed to navigate to the sign up section.
	3. Customer will be asked to create an account on the website. Website will also validate information.	4. Customer will be prompted to enter their information and payment information.
	5. System will check if all the information is entered correctly.	6. Once all the information is entered the customer will receive confirmation that their account and information has been set up and that they are now a member.
<b>ALTERNATE COURSES:</b>	1. Customer does not have credentials to create an account and will be unable to login in online and will have to come to the winery.	2. Customer accesses the wrong businesses website and creates an account unrelated to the winery.
<b>PRE-CONDITION:</b>	1. Customer has proper internet connection.	2. Customer is able to access the website and access the login page.
<b>POST-CONDITION:</b>	Once the customer has submitted everything they will become a member of the winery.	
<b>ASSUMPTIONS:</b>	1. Customer has all the valid information required to create an account.	2. Customer has the money to pay for the monthly membership.





Alec Villarreal



Use Case Name:	Access Website sign-up	
Actor(s):	User	
Description:	User accessing website to sign-up for program	
References		
Typical Course of Action:	Actor Action	System Response
	Step 1: The use case is initialized when the user opens the website sign-up page.	Step 2: Display the website sign-up page and directs the user to the sign-up.
	Step 3: Ask user for information needed.	Step 4: Validate the information received.
	Step 5: Complete sign-up process.	Step 6: Give the user a confirmation of sign-up.
Alternate Courses:	Alt-step 1: The user navigates to the incorrect sign-up page. Alt-step 2: Navigate the user to the proper drop-down. Alt-step 3:	
Pre-condition:	The website is available for the public to access.	
Post-condition:	The user establishes that they have signed-up.	
Assumptions:	The website and the sign-up page are available and working.	

Use Case Name:	Validate Sign-up Information	
Actor(s):	User	
Description:	The website will validate the information put in by the user.	
References		
Typical Course of Action:	Actor Action	System Response
	Step 1: The user will fill in all inputs with proper information.	Step 2: The system will check each input to see if it meets the requirements.
	Step 3: If all input fields are correctly formatted proceed to sign-up else ask user to re-enter and repeat the process.	
Alternate Courses:	Alt-step 1: The user missed an input field. Alt-step 2: The system will ask the user to re-type the field. Alt-step 3: The User advances too soon. Alt-step 4: the Website will bring user back.	
Pre-condition:	The user can input into the desired fields.	
Post-condition:	The user either responds to the corrections needed or the system moves forward to the next process.	
Assumptions:	The user can respond to the errors appropriately.	



## Jaime Rodriguez

USE CASE NAME:	Viewing Membership Points	
ACTOR(S):	Customer	
DESCRIPTION:	Allows customers to view their current and lifetime accrued points	
REFERENCES		
TYPICAL COURSE OF EVENTS:	Actor Action	System Response
	1. Customer enters username and password into system	2. System grants access
	3. Customers log-in is successful and goes to page that displays points	4. System loads page and displays users current and lifetime points
ALTERNATE COURSES:	1. Customer credentials are wrong, leading to unsuccessful log-in. Customer tries again. 2. System database server is down and cannot display points; customer will be asked to try again later.	
PRE-CONDITION:	Customer knows their log-in credentials	
POST-CONDITION:	Customer log-in is successful and can continue to view points	
ASSUMPTIONS:	Customer is a current member and knows their credentials	

USE CASE NAME:	Updating Customer Information	
ACTOR(S):	Customer	
DESCRIPTION:	Allows customer to update their information on the app	
REFERENCES		
TYPICAL COURSE OF EVENTS:	Actor Action	System Response
	1. Customer enters username and password	2. Credentials match and grant successful log-in
	3. Customer goes to settings to update personal information	4. System asks for information that needs to be changed
	5. Customer makes changes	6. System updates database and gives customer confirmation that it has been changed
ALTERNATE COURSES:	1. Customer credentials dont match leading to unsuccessful log-in. System asks customer to try again. 2. Customer decides the information on file is already correct and doesnt update anything.	
PRE-CONDITION:	Customer knows their log-in credentials	
POST-CONDITION:	Customer log-in is successful; customer proceeds to update information	
ASSUMPTIONS:	Customer is a current member	



## Hamza Saeed

USE CASE NAME:	Get award points	
ACTOR(S):	Customer as the initiator; server as the secondary actor	
DESCRIPTION:	Customer with membership earns award points for purchasing a product	
REFERENCES		
TYPICAL COURSE OF EVENTS:	Actor Action	System Response
	1. Customer with membership comes with a product to the server	2. Server scans product and shows the customer price and tells customer how much points they will earn
	3. Customer pays for product	4. Server acknowledges payment
	4. Customer takes the item	5. Server hands the receipt and acknowledges the earned award points
	6. Customer leaves with item	
ALTERNATE COURSES:	Customer comes to server with product, but the scanner is not working Server shows the customer price, but customer doesn't have sufficient amount of payment Server shows the customer price, but customer doesn't have a membership Customer takes the item, but the machine does not print receipt Customer takes the item, but the points are not awarded	
PRE-CONDITION:	Customer needs membership	
	Customer needs sufficient payment	
POST-CONDITION:	Customer receives item with earned award points	
ASSUMPTIONS:	Customer already has membership	

USE CASE NAME:	Use awards points	
ACTOR(S):	Customer as the initiator; server as the secondary actor	
DESCRIPTION:	Customer use their award points to redeem merchandise	
REFERENCES		
TYPICAL COURSE OF EVENTS:	Actor Action	System Response
	1. Customer with membership comes with a product to the server	2. Server scans product and shows the customer price and tells customer how much points the product costs
	3. Customer tells server they wish to use their points	4. Server acknowledges that customer has sufficient points, and deducts points for said product
	4. Customer takes the item	5. Server hands the receipt and acknowledges the deducted award
	6. Customer leaves with item	
ALTERNATE COURSES:	Customer comes to server with product, but the scanner is not working Server shows the customer amount of points needed, but customer doesn't have sufficient points Server shows the customer amount of points needed, but customer doesn't have a membership Customer takes the item, but the machine does not print receipt Customer takes the item, but the points are not deducted	
PRE-CONDITION:	Customer needs to have sufficient points	
POST-CONDITION:	Customer receives item with deducted award points	
ASSUMPTIONS:	Customer already has membership	



Christine Steinhauer



<b>USE CASE NAME:</b>	Disabling Customer Membership	
<b>ACTOR(S):</b>	Winery employee	
<b>DESCRIPTION:</b>	A customer has refused to pay their membership fee, so the winery will disable the account.	
<b>REFERENCES</b>		
<b>TYPICAL COURSE OF EVENTS:</b>	<b>Actor Action</b>	<b>System Response</b>
	Step 1: The employee logs into the winery's reward system.	Step 2: The winery's homepage of the rewards system is displayed.
	Step 3: The employee goes to the list that contains the member's profile information and selects the account to disable.	Step 4: The system sends a confirmation to the employee about the account they selected.
	Step 5: The employee confirms their selection.	Step 6: the selected customer's account is disabled, and the list of memberships is updated.
<b>ALTERNATE COURSES:</b>	Alt-step 1: The employee used the wrong login information Alt-step 2: The system might not be functioning correctly, making it difficult for the employee to use.	
<b>PRE-CONDITION:</b>	The employee must have access to the system	
<b>POST-CONDITION:</b>	Winery has suspended the customer's rewards membership	
<b>ASSUMPTIONS:</b>	The winery notified the customer about removing access to their membership due to a lack of payments, the employee knows how to operate the system, the winery will keep the account information for audit/reinstatement purposes.	



<b>USE CASE NAME:</b>	Membership Suspension	
<b>ACTOR(S):</b>	Customer	
<b>DESCRIPTION:</b>	A customer wants to suspend their membership account for the next 3 months	
<b>REFERENCES</b>		
<b>TYPICAL COURSE OF EVENTS:</b>	<b>Actor Action</b>	<b>System Response</b>
	Step 1: The customer logs onto the website to access their account.	Step 2: The customer's membership account home screen is displayed.
	Step 3: The customer goes to their payment information page and selects the option to suspend their rewards membership.	Step 4: The system asks how long they would like to suspend their membership.
	Step 5: The customer selects that they want to suspend their account for the next 3 months.	Step 6: The system asks the customer to confirm their decision.
	Step 7: The customer confirms their suspension.	Step 8: The system updates the billing period for the customer.
<b>ALTERNATE COURSES:</b>	Alt-step 1: The customer doesn't have a stable connection to access their account. Alt-step 2: The customer uses the wrong information to log in and is displayed an error screen. Alt-step 3: The system is failing, and the customer cannot access their account information.	
<b>PRE-CONDITION:</b>	The customer must have a membership account	
<b>POST-CONDITION:</b>	The customer's account is suspended for the next 3 months	
<b>ASSUMPTIONS:</b>	The customer regularly pays their fee for their membership account	



## Tyler Therriault

Use Case Name:	Storing Customer Wine Club Membership Information	
Actor(s):	Customer	
Description:	Storing customer information regarding a purchased wine club membership.	
References		
Typical Course of Action:	Actor Action	System Response
	Step 1: Once the customer has their information validated and submitted, it is sent to the business database.	Step 2: Database receives customer information, creating a new entry in the system for said customer.
Alternate Courses:	Alt-step 1: System is down, preventing the information from being received, sending an error message back. Alt-step 2: Customer attempts to buy a membership with information already used by another customer. Alt-step 3:	
Pre-condition:	Customer has filled out the requisite form.	
Post-condition:	Customer now has a wine club membership of a specific tier.	
Assumptions:	Customer is going through this process in a browser on an electronic device.	



Use Case Name:	Redeeming Points <u>For</u> Wine	
Actor(s):	Customer	
Description:	Exchanging stored points for wine.	
References		
Typical Course of Action:	Actor Action	System Response
	Step 1: Customer specifies a bottle of wine they'd like to get with points.	Step 2: Cashier deducts the points from the customers total and gives them the requested bottle of wine.
	Step 3: Customer receives bottle of wine and is happy they didn't have to pay for it.	
Alternate Courses:	Alt-step 1: Customer may not have enough points to exchange for the bottle of wine. Alt-step 2: The system might be down, preventing the cashier from viewing the customers total and making the necessary point deduction.	
Pre-condition:	Customer is at the register in the wine bar and has a wine club membership.	
Post-condition:	Customer now has a bottle of wine received via point exchange, with their total reflecting the deduction.	
Assumptions:	Customer knows the bottle of wine they want to redeem with points.	



## Luis Rodriguez

<b>Use Case Name:</b>	Member Upgrade Membership	
<b>Actor(s):</b>	Customer, Employee	
<b>Description:</b>	A customer wants to upgrade their Cellar Door membership from Regular Gold to Premium Platinum.	
<b>References</b>		
<b>Typical Course of Action:</b>	<b>Actor Action</b>	<b>System Response</b>
	Step 1: The customer logs in to the website and clicks option to upgrade membership.	Step 2: System displays the membership upgrade page.
	Step 3: The customer goes to the Membership Upgrade page and selects the Premium Platinum membership.	Step 4: Website displays the differences in membership privileges and the monthly prices.
	Step 5: The customer selects the Continue button.	Step 6: Website asks customer for confirmation that they want to upgrade their membership for an additional charge. Website informs the customer that this membership upgrade will take place after the next billing cycle (2 <sup>nd</sup> of each month).
	Step 7: Customer clicks upgrade acknowledgement box then submits	Step 8: The system displays and confirmation that their membership has been upgraded to Premium Platinum and sends a confirmation email to the customer.
		Step 9: System updates member profile and sends notification to employee of customer's membership change.
<b>Alternate Courses:</b>	Alt-step 1: The user cannot login to their account on the website. Alt-step 2: The user has not been paying their membership. Alt-step 3: The website is not available or is not functioning properly.	
<b>Pre-condition:</b>	The user has a Regular Gold membership and a login ID and password.	
<b>Post-condition:</b>	The user has a Premium Platinum Membership.	
<b>Assumptions:</b>	The Membership Upgrade page has the most up-to-date prices.	



<b>Use Case Name:</b>	Wine Rewards System Reports	
<b>Actor(s):</b>	Winery Employee	
<b>Description:</b>	The employee generates a report for analysis.	
<b>References</b>		
<b>Typical Course of Action:</b>	<b>Actor Action</b>	<b>System Response</b>
	Step 1: The employee signs in to the winery's rewards system.	Step 2: System displays the Winery's rewards website.
	Step 3: The employee navigates to the reports page of the website.	Step 4: The system displays a list of reports available.
	Step 5: The employee selects the report they would like to run.	Step 6: The system asks which time period they would like to run it for.
	Step 7: The employee specifies the time period they want to run.	Step 8: The system displays the report results and an option to export.
	Step 9: The employee exports the report and specifies where to save the file on the workstation.	Step 10: The system exports the file.
<b>Alternate Courses:</b>	Alt-step 1: The employee is unable to login. Alt-step 2: The employee provides an invalid date range for the report. Alt-step 3: The website is not working properly	
<b>Pre-condition:</b>	The employee has a login to the website.	
<b>Post-condition:</b>	The user has exported and saved locally a copy of the report for their analysis.	
<b>Assumptions:</b>	The employee has an objective for the report and what they would like to analyze. Enough data exists in the system to display report results. The system has all the necessary reports that the employees need for their analysis.	



## Required System Event Response Table

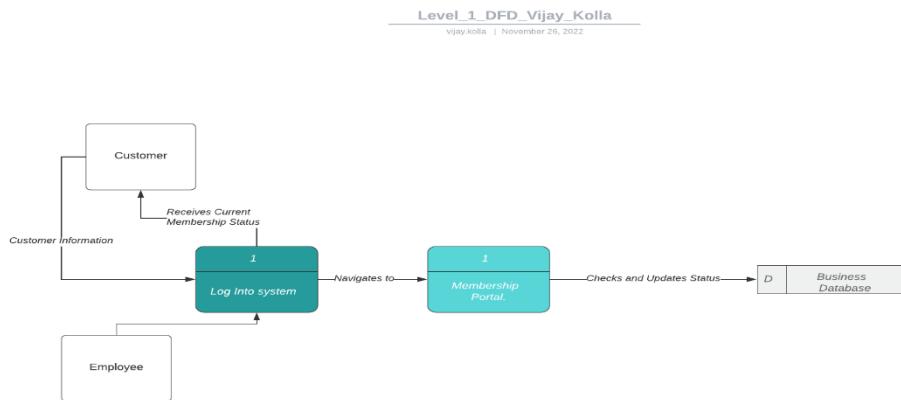
Event	Source	Use case	Response	Destination
Beginning/end of day	Employee	Count register balance during opening/closing	Register balance counted	Employee
Employee asks customers to sign up to wine club	Employee	Encourage customers to sign up to wine club	Customer accepts/rejects joining club	Customer
Time to calculate employee wages	Manager	Calculate employee wages & consider related factor	Employee wages calculated	Employee
Time to check monthly inventory	Staff	Take stock of remaining inventory	Inventory updated	Manager
Time to update customer data & add new members	Manager	Update customer data & add new members	Customer data updated & new members added	Manager
Check business profit margins every 3 months	Manager	Quarterly business profit margins	Profit margins checked	Manager
Evaluate competition every 3 months	Manager	Evaluate competition	Competition evaluated	Manager
Discuss every 3 months on how/where to improve	Staff	Discuss ideas on how to improve	Attained knowledge on where/how to improve	Staff
Check profits in the end of year	Manager	End of year profits	Profits checked evaluated	Manager



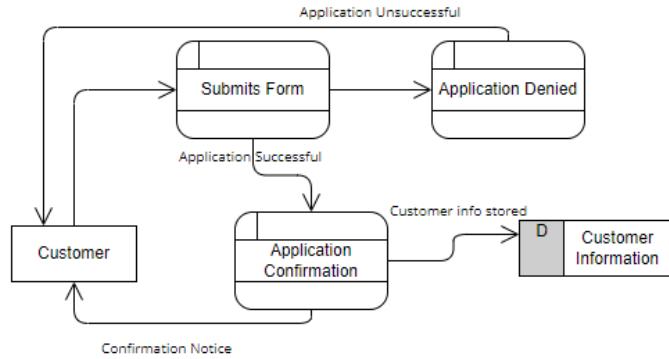
Time to discuss next year's goals	Staff	Next year's expected profits/profit goals	Next year's goals discussed	Staff
Evaluate yearly previous years' goals and profits	Staff	Business Progression.	Previous years' goals/profits discussed	Staff

## Required System Data Flow Diagram (DFD)

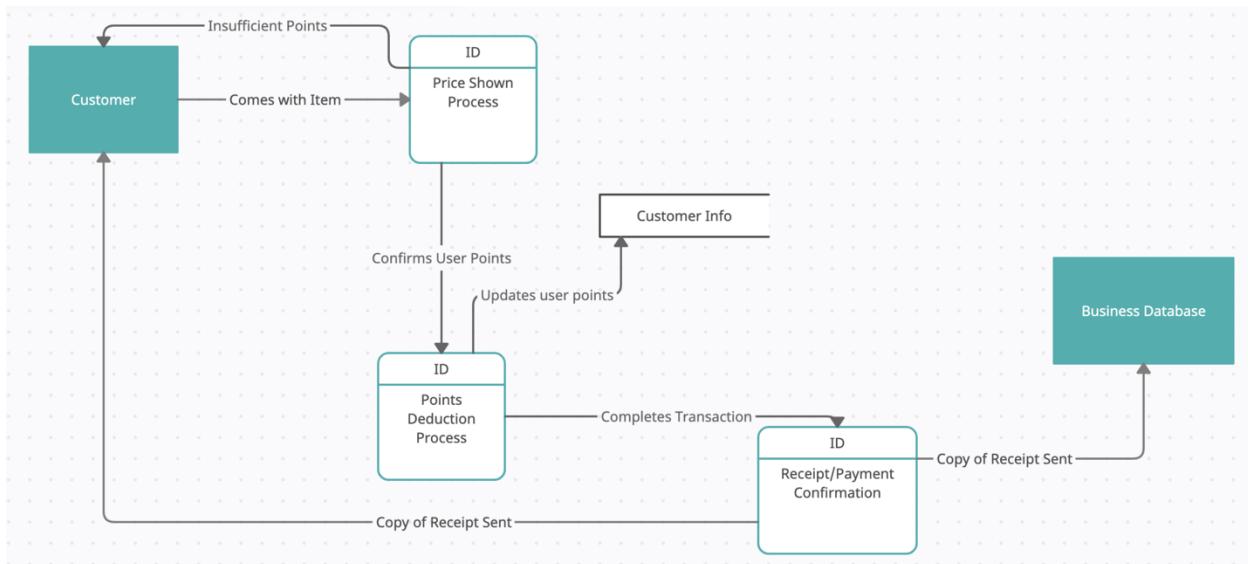
Vijay Kolla

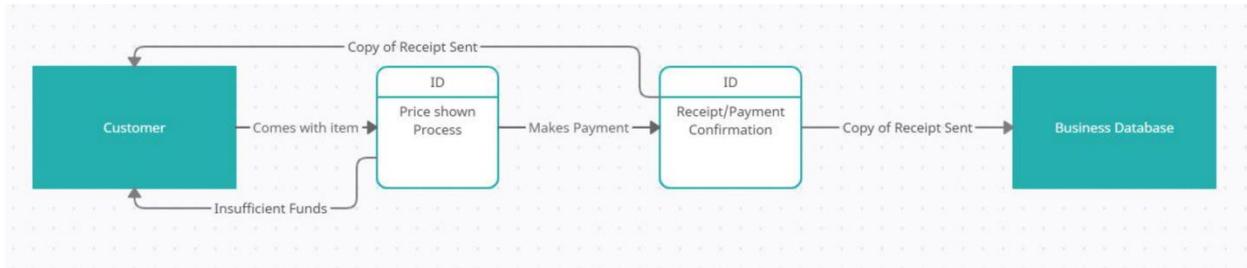


Jaime Rodriguez

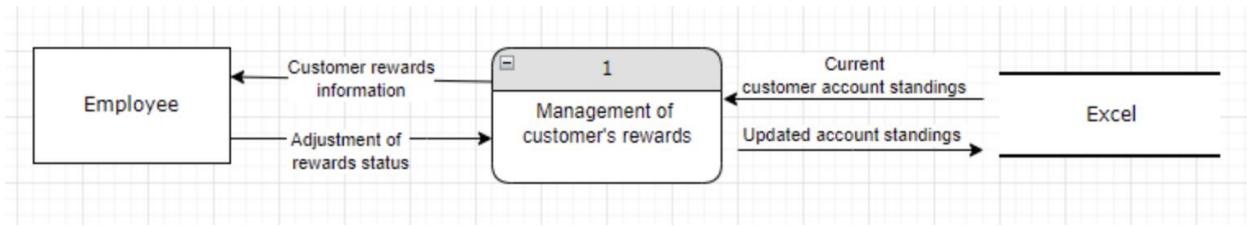


## Hamza Saeed



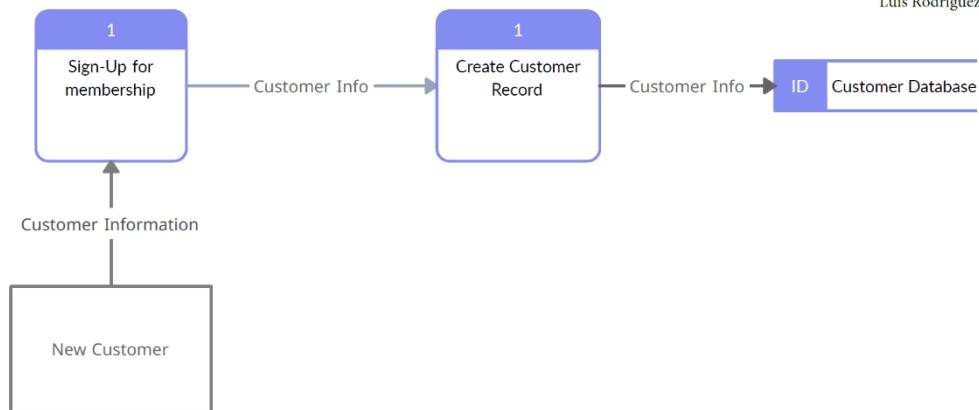


Christine Steinhauer

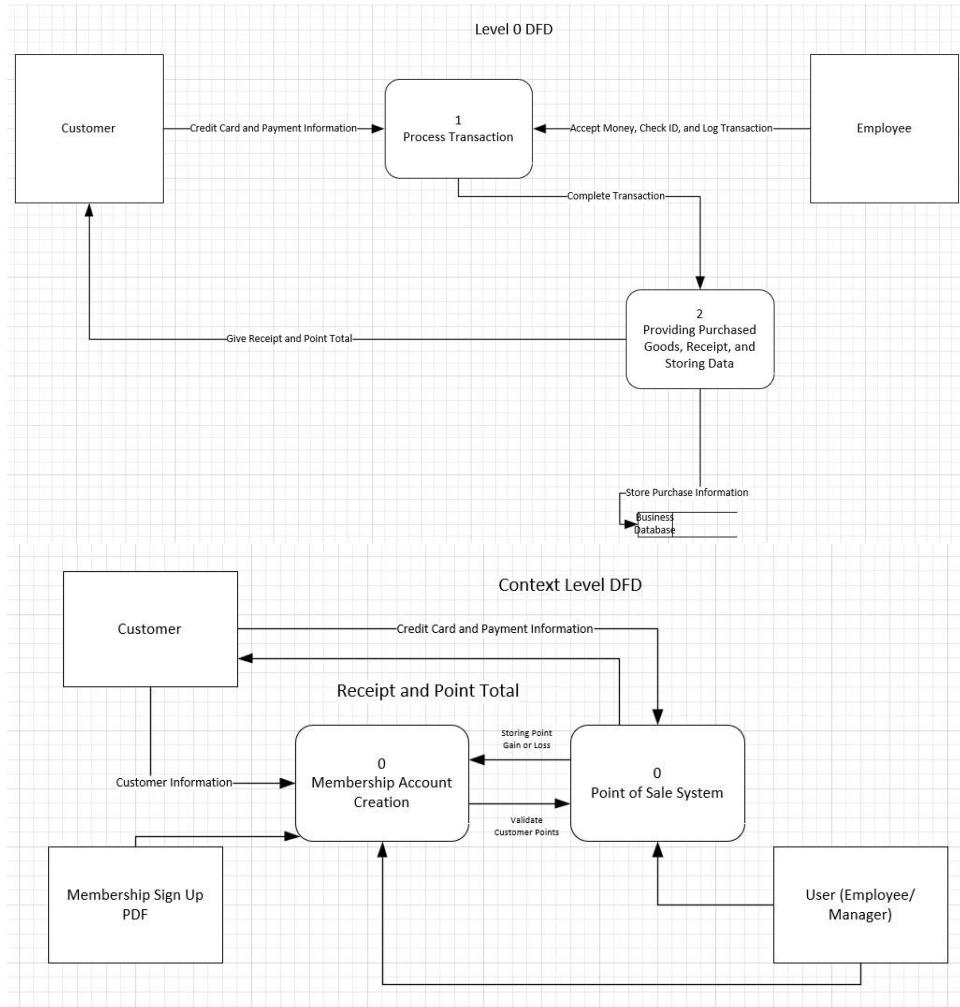


Luis Rodriguez

Level 1 Data Flow Diagram (DFD)  
Membership Sign-Up Process  
Luis Rodriguez



Tyler Therriault



**Level 1 DFD**



## Required System Feasibility Analysis

A feasibility analysis was performed with the Cellar Door to determine that all categories meet requirements. We reviewed the current and proposed environment for technical, operational, economic, and schedule feasibility. Our analysis identified that our solution is feasible in all areas.



### **Summary of Feasibility Analysis:**

The Cellar Door's existing computer systems and website will be used for the new system. Our group of analysts will build a custom-made customer rewards loyalty system (CRL) with all the mandatory requirements that we have obtained from the client. Our custom-built CRL system allows for the business to fully transition their process of obtaining and maintaining members and the loyalty program off the paper-based system to a fully digitized system to create a streamlined and efficient workflow. The program is going to become an internal program hosted on our client's hardware in which the employees can use and the managers as well with a permissions system set in place.

Our product is only a net benefit for the company due to the client's investment being minimal due to the only investment they have input is their time. Our product is of no cost to them and at the same time is built under the needs that have been identified after carefully talking with the client.

### **Technical Feasibility:**

The Cellar Door's existing workstation is a Dell Vostro 260 mini tower with the following specifications: Intel Core i3 3.1GHZ processor, 4 GB DDR3 RAM, 250 GB Hard drive/ HDMI. Their network uses a Cisco Linksys E1200 Wireless-N Router. The Cellar Door is currently using an Excel spreadsheet to store members and their information. Their hardware is sufficient to supply adequate performance for the new system. The new system will integrate with the company's existing website. The new system will use a MySQL database. We will develop a web application using Python and JavaScript. We will develop a prototype to verify technical feasibility.

### **Operational Feasibility**

The new system will provide an effective and efficient way to sign up new members on their website. The Cellar Door management and employees are excited about having the new system, which will make processes easier for them. The users will be involved in planning the system from the beginning stages. The new system will be user friendly. The new system will not require any operating changes and will not generate any extra demands on the employees. The employees will be trained on the proper use and maintenance of the system. A system manual and user manual will be given to the employees. These manuals will include screenshots with step-by-step instructions on how to use each screen and how to maintain the system. The manual will include instructions for troubleshooting issues with the system. User testing will likely identify some of the most common issues that could occur. After the system is finalized and delivered, the developers will not be needed anymore. The system will be developed in such a



way that it is easy to use and easy to maintain. Customers will have an improved experience as well, with an automated way to sign up for membership on the website. The customer won't have to come in person to sign up.

### **Economic Feasibility:**

The projected benefits of the new system greatly outweigh the total cost of ownership. Since the existing system infrastructure will be used, there will be no investment cost for hardware. The employees will need to spend some time testing the system, once it's developed to ensure that it meets their requirements. The solution that is being designed is built with their current hardware in mind, meaning that they won't need to make any additional investments regarding adapting our product into their workflow. The tools used for development will not cost money, as we will be using Opensource tools (NoSQL, Python, JavaScript). We will not be charging the customer for our services and there will not be any licenses required. We will provide training to the employees for no cost. The new system will result in decrease in time spent by the employees since the process will be automated.

This website will improve their business, by automating the membership system. It will allow them to improve their marketing and analyze their membership demographics. The new website will also enhance the company's image.

### **Schedule Feasibility**

We discussed the schedule with the Cellar Door owner, and they agreed that the new system will be finalized by May 2023. This coincides with the development team's availability and schedule. During the development of the system, The Cellar Door has agreed to provide time for their users to participate in meetings with the developers and testing of the system. The project manager is Tyler Therriault, and assistant project manager is Luis Rodriguez. We do not anticipate needing to accelerate the schedule. However, some acceleration of the schedule should not pose any major risks. The customer is flexible on when they have the new system up and running. Since the new system only enhances their business, it will not interrupt their everyday operations.



## Data Acquisition and Data Conversion Strategy

The strategy for data acquisition and data conversion is an important part of the system installation process. The existing data is stored on an Excel spreadsheet. The old system, which is an Excel spreadsheet, is capable of exporting data in an acceptable format (ODBC) for the new database.

### **Data Acquisition**

The most secure method to get access to the data is to export the Excel spreadsheet and save to an external hard drive. The owner of The Cellar Door would allow the developers on-site to export and save the data to their external hard drive.

### **Data Conversion**

The developers will take the file on the external hard drive and connect to their developer system. They will use the SQL Server import wizard to convert the data from Excel spreadsheet file to a database.

### **Data Completeness**

In the early testing stages, an initial data import can be performed to ensure that the data can be converted properly and ensure data integrity. After system development is completed, data will need to be imported again to ensure that all of the new members are included in the database. During the development phase, we will have parallel processing where the Cellar Door will continue to use and update their Excel spreadsheet until the final new system is available.

### **Data Integrity and Confidentiality**

During the data conversion process, input controls will be maintained to ensure that data stays reliable. For example, member name, mailing address, email address, and phone number would be best as data type “string”. Other fields such as birthdate and credit card expiration date should remain in a “date” format, or else the data will become useless. Some fields may require “integer” data type, such as the member’s number of stars they have to redeem wine. In addition, the developers will put controls in place to ensure that The Cellar Door member data remains secure and that only developers should have access to this data during the conversion process. Since the website is hosted on the Internet, it is important that the data remains confidential and not exposed to the internet. Leaking member information would be a huge risk to the Cellar Door’s reputation with their members and potential future customers.

### **Data Cleanup**

Before exporting the data from Excel, the developers will review the data to determine what data cleanup needs to be performed. For example, if the member first name and last name are in the same cell, they will need to separate them into separate cells. In addition, we will review the data to ensure there are no non-printable characters. We will also look to make sure all the phone



numbers are digits and not letters, etc. After importing the data into the database, our developers will review data integrity to ensure that all of the data is correct, complete, valid, and properly restricted. Any errors identified will be investigated and corrected. We will run comparison on the two data sources to ensure that they match. We will also look for any missing data and take that opportunity to complete missing data. These steps are very important to ensure the new system has accurate, error-free data. After completing data cleanup, we will convert the data into relational tables and normalize the data.



## Initial Draft of Testing Plan for Application and Database Creation

The Cellar Door currently has a manual rewards program, and we wish to automate that rewards program.

We will start with Unit Testing. In Unit Testing, we will test correct and incorrect data with our application. This data can include the customers' names, date of birth, email addresses, phone numbers, and so on. Example, for a field that checks a member's age, we can have a correct age, and a noncorrect age (underage.)

We will also perform Integration Testing. Here, we can do a variety of tests to check whether the customer's name, email address, phone number match, and check when the customer puts their information down, the correct number of points are shown to the customer. For example, when the customer puts their name, email address, and phone number down, there can be many cases:

- All three are correct, then the application shows the customer's points
- The name is incorrect
- The phone number is incorrect
- The email address is incorrect
- The name and phone number are incorrect
- The name and email address are incorrect
- The phone number and email address are incorrect
- All three are incorrect (in all these cases, a message shows that the information provided does not match)

We will also perform System Testing, which tests the entire software. We want to make sure every single part of the application works. When a member signs up for the rewards program, the data storage should have all the information correctly, and the rewards points should be at zero. When a member purchases an item, the application should properly add the correct number of points to the data storage. When the person wishes to redeem their points, the correct number of points should be subtracted from the data storage.



## Application Prototype

The Cellar Door  
Wine Club Membership Application  
829 S. Mason Rd., Ste. 280 Katy, TX 77450 (281) 399-3303

Check the box for the membership you desire

Regular Gold Membership \$32/month + \$2.64 Tax      Or       Premium Platinum Membership \$59/month + \$4.87 Tax

Name: \_\_\_\_\_

Billing Address  
Address: \_\_\_\_\_  
City / State / Zip: \_\_\_\_\_

Credit Card Info  
Credit Card #: \_\_\_\_\_  
Card Type:  \_\_\_\_\_  
CCV #: \_\_\_\_\_ Exp Date (MM/YY): \_\_\_\_\_

Phone #: \_\_\_\_\_  
Email: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

I authorize The Cellar Door Winery to charge my credit card on the 2nd of each month for the wine club benefits. Tax is \$2.64 for Regular Gold membership, and \$4.87 for Premium Platinum membership. I must give written notice of any changes of billing or account information or cancellation of benefits (or email at info@cellardoorkaty.com). By signing this, I certify that I am at least 21 years of age.

## Profile



X

### Rewards

^

Total Rewards Available

Current Discounts Applied

Passes Rewards Applied

### Account Information

v

### Membership Status

v

### Receipt History

v



Tyler Therriault Reports



## Executive Report

### **Customer Loyalty System**

#### **Overview**

The aim of this project is to help improve The Cellar Door's record keeping. By automating this process, it will make record keeping much more efficient than doing it by hand.

#### **Problem Summary**

This problem affects the business at large, and there isn't any way they use to get around this issue, continuing to transfer records by hand.

#### **Solution Summary**

Our Customer Loyalty System solves this issue by allowing customers to fill out an electronic form, submit that, and have the record be added to the database automatically.

#### **Market Analysis**

The market size of this opportunity is certainly not to be taken for granted, as it can save staff a lot of time. In terms of local competition, it will help keep customers coming back, because of the benefits of the easily accessible wine membership club.

#### **Key Next Steps**

There is no up-front investment required from the business, since this is all free of charge. Complete implementation should be expected by the end of the 2023 Spring Semester.



## Executive Report

### **Customer Loyalty System**

#### **Overview**

The aim of this project is to give The Cellar Door electronic rewards point system. By implementing this, profits and customer retention can be expected to increase.

#### **Problem Summary**

While not necessarily as big a problem as transferring records by hand, retaining customers is still an issue. This problem also affects the business at large and can be solved quite doable.

#### **Solution Summary**

Our Customer Loyalty System solves this problem by allowing customers to accrue points with every dollar spent at a fixed rate, then redeem those points later for wine, food, events, and other items.

#### **Market Analysis**

The market size of this opportunity is certainly large, as reward points programs are in use by a lot of other businesses. Along with the customer retention and profit increases a system brings, it will only help the business to implement it.

#### **Key Next Steps**

There is no up-front investment required from the business, since this is all free of charge. Complete implementation should be expected by the end of the 2023 Spring Semester.



Alec Villarreal Reports



---

## Executive Report

# Customer Loyalty System



### Overview

- The Cellar doors current process for keeping track of all customer data is extremely outdated and time consuming. Customers don't have access to their account and only specific employees can manage the customer data.

### Problem Summary

- Anytime a customer wants to manage their account they have to go in store and have an employee assist them with this process. this could result in many problems occurring from mis input of information to even misunderstanding of important information.

### Solution Summary

- Our solution to this problem is to implement a sign in page on the Cellar Doors current website to allow for customer to access their account. This will allow customers to see and manage all other their important account information and the current balance for rewards available.

### Market Analysis

- Customers being able to access and manage their accounts from the comfort of their own homes is a great asset to have for any business. Many businesses take this approach when having any kind of online sign-up page, because it is an effective and beneficial.

### Key Next Steps

- Is this being a aspect that you would like to implement into your business we will need to know what all the information that you would like the customers to be able to access in order to properly create profile page.



## Executive Report

# Customer Loyalty System



### Overview

- The Cellar door wants to automate the sign-up process to relieve the manual labor involved in the current process. Along with the automated sign-up process we would like to add additional features.

### Problem Summary

- The problem with the current system is that it lacks any sort of query to filter out data and run reports on customer data.

### Solution Summary

- With the implementation of this new system, we would like to add some sort of application that can be accessed by the Cellar Door and their employees to find customer information. Not only will it allow employees to access customer information but allow for reports to be ran that can help the company gain knowledge of their customers.

### Market Analysis

- Having the ability to run queries in a business is a great tool to have and use, almost all companies now days are using this as a tool to improve their business. With the Cellar Door gaining this ability it can help in many ways that can be expected.

### Key Next Steps

- This ability will be tied into the existing rewards system that we are building for the company if wanted, and if wanted we will implement it into the business and train any and all employees that will be using this tool.



Vijay Kolla Reports



Company  
Street Address, City, ST ZIP Code  
Phone phone .



## MONTHLY STATUS REPORT

### MONTHLY SUMMARY

REPORT DATE	PROJECT NAME	PREPARED BY
Date	Project	Kolla, Vijay S

### STATUS SUMMARY

To get started right away, just tap any placeholder text (such as this) and start typing to replace it with your own.

### PROJECT OVERVIEW

TASK	% DONE	DUUE DATE	DRIVER	NOTES

### BUDGET OVERVIEW

CATEGORY	SPENT	% OF TOTAL	ON TRACK?	NOTES

### RISK AND ISSUE HISTORY

ISSUE	ASSIGNED TO	DATE

### CONCLUSIONS/RECOMMENDATIONS



## Employee Status Report.



### EMPLOYEE STATUS REPORT

#### Employee information

Employee name	Enter employee name	Employee ID	Enter employee id
Department	Enter department	Manager	Enter manager
Report start date	Enter start date	Report end date	Enter end date

#### Short-term action items

Action item	Due date	Status
Enter action item 1	Enter due date	Enter status
Enter action item 2	Enter due date	Enter status
Enter action item 3	Enter due date	Enter status
Enter action item 4	Enter due date	Enter status
Enter action item 5	Enter due date	Enter status
Enter action item 6	Enter due date	Enter status

#### Long-term goals

Goals	Due date	Progress
Enter goal 1	Enter due date	Enter progress
Enter goal 2	Enter due date	Enter progress
Enter goal 3	Enter due date	Enter progress
Enter goal 4	Enter due date	Enter progress
Enter goal 5	Enter due date	Enter progress
Enter goal 6	Enter due date	Enter progress

#### Comments.

Enter Comments

#### Concerns

Enter concerns



Christine Steinhauer Reports



## Executive Summary

### Customer Rewards System

#### Overview

This Project aims to help the cellar door organize and analyze their customer metrics.

#### Problem Summary

The Cellar Door's current system limits them from utilizing customer metrics to improve their business. Since they mainly use excel to keep track of their customer's rewards, this doesn't give them access to how the customers are using their rewards.

#### Solution Summary

Our automated Customer Rewards System will allow the winery to generate reports of their customer metrics to see what their clientele likes and dislikes, allowing them to cater towards their customer's preferences.

#### Market Analysis

By catering to their clientele, the winery will be able to attract and keep more customers. By having access to customer metrics, The Cellar Door will be able to keep up with its surround competitors in the area.

#### Key Next Steps and Financial Summary

The Cellar Door does not need to worry about any charges because the system we are offering them is free of charge. The next steps of this project would include, designing and developing the system, and the end goal would be to deliver the Loyalty system to them by mid-2023.



## Executive Summary

### Customer Rewards System

#### Overview

This Project aims to reduce the number of calculation errors that The Cellar Door faces while manually updating the customer's rewards.

#### Problem Summary

The Cellar Door's current system requires them to crunch numbers by hand, resulting in calculation errors. If these errors go unnoticed by the employees, the customer's reward status can be negatively affected.

#### Solution Summary

Our automated Customer Rewards System will allow us to reduce the winery's number of calculation errors because our system will be doing the math and not the employees.

#### Market Analysis

The effect of the Customer Rewards System will be a positive impact on the Winery. As more competitors are using loyalty systems it is important for The Cellar Door to keep up with its competitors.

#### Key Next Steps and Financial Summary

The services we are proving to the cellar door are free of charge, so unless they are wanting to upgrade the current technology, they have there wouldn't be any financial responsibility. The next step of this project is for PoinTech to develop the system and have it delivered to the winery by the end of the 2023 spring semester.





Luis Rodriguez Reports



## Managerial Report

Luis Rodriguez



Date: November 26, 2022

**Application Owner:** Cellar Door owners – Ron, Don and Andy Holsomback

### Project Contacts:

- Tyler Therriault (Project Manager)
- Luis Rodriguez (Assistant Project Manager)
- Hamza Saeed
- Jaime Rodriguez
- Alec Villarreal
- Christine Steinhauer
- Vijay Kolla

### New System Description

The new system will transform Cellar Door's manual process into an automated rewards system. It will be a web-based application that will allow new members to sign up online and manage basic functions of their winery membership. The web application will also allow winery employees to access all the member data and run reports. This will allow the company to increase visibility through customer metrics of the company's performance. The new system will reduce the task load for the winery and expand it's business efficiency in storing and collecting data for their rewards program. This will also allow them to create dashboards to implement and visualize critical metrics and KPIs centered around customer engagement.

### Background Information

The Cellar Door is a family-run winery whose doors opened in 2010 by Ron Holsomback and his brothers Don and Andy. They have one winery located in Katy, Texas, which is a suburb of the greater Houston area. The winery produces about 12-18 of its wines and offers guests about 100 other bottles from



---

popular regions. It is the cellar door's goal to have their customers be able to sit down and relax while experiencing their wines. They offer a wine club loyalty program that has over 300 members. This wine program is integral for them because it keeps the customers returning and helps develop that long-term relationship between the winery and their customers. The Cellar Door ~~has to~~ complete a lot of manual work to keep up with their rewards program, such as transporting data from paper sources to excel and crunching numbers by hand to find their customers' total rewards (stars). PoinTech's goal is to take the company's manual system and automate its rewards program so the cellar door can increase visibility through customer metrics of its performance.

### **Objectives**

The Cellar Door to add more members to their wine club, retain members, and increase their profits. This new system would enable the effective monitoring of winery members, including status and expiration date for renewal. They would like to have a central repository of members for easy access and maintenance. With the automation of the rewards process, they hope to have more time to focus on events to attract more customers.

### **Scope**

The project scope is limited to the Cellar Door Rewards system. The Cellar Door has a separate Point of Sale (POS) system that will be out of scope for this project.

Tasks included documenting 3 alternatives for this new rewards system. The decision was made to have our team of developers create a custom developed web application for the Cellar Door. This will utilize their existing infrastructure and only offer the functionality that they need. Other systems would be too expensive and too complex for their requirements.

### **Proposed Systems Implementation Schedule:**

- System Requirements Gathering – September 2022
- Develop Data Diagrams – October 2022
- Document System Requirements – November 2022
- Review documentation with client – January 2023
- Create prototype – November 2022
- Review prototype with client – January 2023
- Make changes to address client feedback – February 2023
- Program various web pages for the Rewards System – February 2023
- System testing – March 2023
- Remediate issues identified – April 2023
- Conduct training – May 2023
- Document User Manual and System Manual – April 2023
- Finalize System Implementation – May 2023



---

## Operational Report

Luis Rodriguez



This operational report will discuss key considerations for the Cellar Door's new rewards system implementation. It will include Key Performance Indicators, key activities, potential issues, actions to address concerns, major decisions made, and planned activities for next period.

### Key Performance Indicators

The Cellar Door aims to add more members to their wine club and with the help of the system, we plan to implement it into the company both our client and we expect the system to help grow their clientele. The Key Performance Indicators (KPI) to measure success for this process include customer retention and an increase in profits. The Cellar Door can monitor how many members they have prior to the system implementation and after they have the new system in place. This is expected to increase over time. Employees can run reports in the new Rewards system to determine the number of members and compare to previous numbers.

In addition, The Cellar Door hopes to have a moderate increase in profits following the implementation of their new rewards system. With the automation of the rewards process, they hope to have more time to focus on events to attract more customers.

### Key Activities

The Cellar Door Winery rewards members with discounts on merchandise, food, wine, and events for a monthly fee. In Phase 1 of the project, we presented 3 alternatives to the client for their new rewards system. Their preferred solution was to have our group of analysts custom develop a customer rewards loyalty system (CRL) system that will meet all of their mandatory requirements. Our custom-built CRM system allows for the business to fully transition their process of obtaining and maintaining members and the loyalty program off the paper-based system to a fully digitized system to create a streamlined and efficient workflow. After gathering requirements from the client, developing data diagrams, dependencies, we plan to review the complete package with the client for their approval. The client will also approve the prototype before development commences. The developers will take into account customer feedback to ensure their needs are met. The developers will program the web application, ensuring that all mandatory requirements are met. Then we will participate in system testing, user

acceptance testing, and integration testing. Issues identified during testing will be remediated. System fixes will be tested again until they met specifications. The developers will conduct hands-on training with the users and deliver user and system manuals.

#### **Potential Issues**

The Cellar Door Winery's existing rewards membership program is manual. All membership information is currently transferred into their system by hand, which is time-consuming and inefficient. In the current process, the new member completes the member application on their computer, prints it out, and takes it to the winery in person. The Winery employees manually type it into an excel spreadsheet. All of the rewards member information, including name, contact information, and if they redeemed their wine is collected in the spreadsheet.

Some concerns with the new system include Cellar Door employees' resistance to change, invalid data, and data leakage.

1. Change Resistance - After the implementation, the employees may not react well to process change and end up defaulting back to what is comfortable for them (the manual process). They may have a busy work day and not want to be bothered with doing it the new way since it takes effort in the beginning.
2. Incorrect data - If any of the customer membership information is incorrect, the Cellar Door may lose their customers' trust. It could affect the Cellar Door's image. For example, if a member record is erroneously deleted. Members that are paying for the membership and don't receive the benefits will become disappointed and potentially cancel their membership.
3. Data Leakage – Since the customers will have the ability to sign up for membership online, their customer information (name, address, phone number) could be leaked and shared with other businesses.

#### **Actions/Steps to Address Concerns**

The Cellar Door would like to automate the process by allowing new members to complete their membership applications on the website, which will automatically be stored in a database. One goal is for the Cellar Door employees to easily be able to pull up a member's account on the computer to view their information.

1. Change Resistance – To ensure that Cellar Door personnel feel comfortable with the new system and processes, the development team plans to extensively perform hands-on training. We will observe the employees and ensure that they can confidently navigate the systems on their own. In addition, we will provide detailed user and system manuals.
2. Incorrect data - If any of the customer membership information is incorrect, they may lose their customers' trust. It could affect the Cellar Door's image. For example, if a member record is erroneously deleted. Members that are paying for the membership but don't receive the benefits. We will perform extensive unit and integration testing to ensure that all data is migrated successfully, the data processes are tested thoroughly, and all potential outcomes are



remediated. Proper data validation and error checking will be implemented during development.

3. Data Leakage – Since the customers will have the ability to sign up for membership online, their data privacy could be leaked and shared with other businesses. We will ensure that the system is adequately protected against top web vulnerabilities (OWASP Top 10). OWASP Top 10 represents a broad consensus about the most critical security risks to web applications. For example, commonly known vulnerabilities in web applications are cross-site scripting and SQL injection. Controls can be put in place in the application to prevent against these types of attacks. Users will be required to authenticate, have strong passwords that are changed regularly, users will have restricted access to prevent them from accessing other records. As a compensating control, the rewards system will only contain basic information about the customers (name, address, phone number) and will not include classified data such as credit card number, bank information, or social security number.

#### **Major Decisions Made**

As agreed with the client, we plan to implement a rewards system, to help gain new customer memberships, encourage more spending, and get the business name out to more people. Our system implementation will satisfy these goals and improve the business overall from its current state.

The recommendation for the Cellar Door from our group of analysts is our custom-made customer rewards loyalty system (CRL) system built in with all the mandatory requirements that we have obtained from the client. Our custom-built CRM system allows for the business to fully transition their process of obtaining and maintaining members and the loyalty program off the paper-based system to a fully digitized system to create a streamlined and efficient workflow. The program is going to become an internal program hosted on our client's hardware in which the employees can use and the managers as well with a permissions system set in place.

Our product is only a net benefit for the company due to the client's investment being minimal, with their only investment needed is their time. Our product is of no cost to them and at the same time is built under the needs that have been identified after carefully talking with the client.

#### **Planned Activities for Next Period**

This system will be implemented and completed by the end of the 2023 Spring Semester. An electronic transfer and automation system and rewards point system is the way forward and implementing this system will yield direct tangible benefits for the business.



Jaime Rodriguez Reports



## Executive Report

### Customer Loyalty System

#### Overview

- PoinTech aims to provide The Cellar Door a solution to their legacy system that allows customers access to their account information that could previously only be viewed with the help of employees.

#### Problem Summary

- The Cellar Doors legacy system makes the process of accessing customer accounts cumbersome and limits the customer to what they can do.

#### Solution Summary

- The new system will save The Cellar Door time and money and will boost new customer membership while retaining old ones.

#### Market Analysis

- With customer retention and new membership increasing because of the new system, it is easy to see the benefits that will come over the legacy system.

#### Key Next Steps

- PoinTech is providing The Cellar Door with the new system at no cost to them. The project will conclude, and the system will be finalized at the end of the spring semester 2023.



## **Executive Report**

### **Customer Loyalty System**

#### **Overview**

- The goal of this project is to provide our client, The Cellar Door, with a rewards system that works online and is seamless in design.

#### **Problem Summary**

- Without the system being online, customer records will become cluttered and may be lost when handling them.

#### **Solution Summary**

- Customers won't have to worry about their records being lost with an online database that is backed up.

#### **Market Analysis**

- The new system will bring confidence to our customers and the seamless design will attract new customers because it will be easy to get started. Overall, the new system will both retain loyal customers and create new ones more than the legacy system has.

#### **Key Next Steps**

- PoinTech is providing The Cellar Door with the new system at no cost to them. The project will conclude, and the system will be finalized at the end of the spring semester 2023.



Hamza Saeed Reports



Hamza Saeed



# EXECUTIVE REPORT

## OVERVIEW

Our service through this project, will help The Cellar Door excel in customer relations through the point base system. This will allow customers to interact with our client through our system.

## PROBLEM SUMMARY

Current system is not automated and can cause confusion to members of The Cellar Door.

## POSSIBLE SOLUTIONS

Providing a system that will help our client and customers have better relations through a system that will be easy to navigate.

## MARKET ANALYSIS

Other wineries that have membership programs will look up to The Cellar Door because of this new system that helps organize the membership program.

Address | City, St Zip Code

## KEY STEPS

There will be no financial issues due to the fact that this system will be at no cost to the client. In



# Overall Status Report

Overall Status: **Status**

Name:

Date

## Status Code Legend

- |  |   |
|--|---|
| ● On Track: Project is on schedule           | ● High Risk: At risk, with a high risk of going off track |
| ● At Risk: Milestones missed but date intact | ● Off Track: Date will be missed if action not taken.     |

The project is <b>Status</b> the week of Start Date - End Date, due to the following:	
Issues:	<ul style="list-style-type: none"><li>● Issue No. 1</li><li>● Issue No. 2</li><li>● Issue No. 3</li></ul>
Milestones accomplished the week of Start Date - End Date:	<ul style="list-style-type: none"><li>● Milestone No. 1</li><li>● Milestone No. 2</li><li>● Milestone No. 3</li></ul>
Milestones planned this week, but not achieved with variance:	<ul style="list-style-type: none"><li>● Milestone No. 1</li><li>● Milestone No. 2</li><li>● Milestone No. 3</li></ul>

COMPANY NAME

1

Milestones planned for next week:	<ul style="list-style-type: none"><li>● Milestone No. 1</li><li>● Milestone No. 2</li><li>● Milestone No. 3</li></ul>
-----------------------------------	---

Areas/questions for discussion:	List/summarize topics here.
---------------------------------	-----------------------------





## Updated Listing of Authors per Deliverable

Deliverables	Primary Author	Secondary Author	Editor(s)
33. Sponsor Decision regarding Systems Proposal	Vijay Kolla	Christine Steinhauer	
34. Final Problems & Requirements List	Christine Steinhauer		Luis Rodriguez
35. Required System Business Rule List	Tyler Therriault		
36. Required System Business Activity List	Tyler Therriault		
37. Required System Entity Relationship Diagram	Tyler Therriault		
38. Required System Data Dictionary	Vijay Kolla		
39. Required System CRUD matrix	Vijay Kolla		Tyler Therriault
40. Use Case Scenarios	Whole Team		
41. Required System Event Response Table	Hamza Saeed		
42. Required System DFD	Whole Team		
43. Required System Feasibility Analysis	Luis Rodriguez		
44. Data Acquisition and Data Conversion Strategy	Luis Rodriguez		
45. Initial Draft of Testing Plan for Application and Database Creation	Hamza Saeed		Tyler Therriault
46. Application Prototype	Alec Villarreal		
47. Updated Listing of Authors per Deliverable	Alec Villarreal	Christine Steinhauer	
48. Complete List of References	Alec Villarreal		
49. Final Presentation	Whole Team		





## Complete List of References

“Design and Prototyping Tool for Web and Mobile Apps.” *Justinmind*, [https://www.justinmind.com/?k=justinmind&a=295677078132&adg=23874442871&cmp\\_=323175791&match=e&adposition=&utm\\_medium=cpc&utm\\_source=google&utm\\_campaign=323175791&utm\\_term=justinmind\\_e&gclid=CjwKCAiA7IGcBhA8EiwAFFUDsQtBQtxQR8OGtP\\_9iZz-F6UnUgGRB3vvazi0lR6HIXQ5Ny14G27BjRoCDSoQAvD\\_BwE](https://www.justinmind.com/?k=justinmind&a=295677078132&adg=23874442871&cmp_=323175791&match=e&adposition=&utm_medium=cpc&utm_source=google&utm_campaign=323175791&utm_term=justinmind_e&gclid=CjwKCAiA7IGcBhA8EiwAFFUDsQtBQtxQR8OGtP_9iZz-F6UnUgGRB3vvazi0lR6HIXQ5Ny14G27BjRoCDSoQAvD_BwE).

“Log in to Access the Lucid Visual Collaboration Suite.” *Lucid Visual Collaboration Suite: Log In*, [https://lucid.app/users/login?returnUrlOverride=%2Flucidchart%2F4e9dc74b-e017-413f-ad26-20860cf40bd3%2Fedit%3FinvitationId%3Dinv\\_feaa4f57-45d8-4122-8cdd-83de453baff8%26page%3D0\\_0#/login?referredProduct=lucidchart](https://lucid.app/users/login?returnUrlOverride=%2Flucidchart%2F4e9dc74b-e017-413f-ad26-20860cf40bd3%2Fedit%3FinvitationId%3Dinv_feaa4f57-45d8-4122-8cdd-83de453baff8%26page%3D0_0#/login?referredProduct=lucidchart).

*Free Design Tool: Presentations, Video, Social Media / CANVA*. <https://www.canva.com/>.

“At Creately, We Help More People Work and Collaborate Visually.” *Creately*, 17 July 2020, <https://creately.com/about-us/>.

*Rules for data flow diagram* (no date) *GeeksforGeeks*:

<https://www.geeksforgeeks.org/rules-for-data-flow-diagram/>.