Assignment 9:
System Proposal

By: Group 5

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INFO-361-001
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Brief Description:

Business:
An art gallery that offers art trading activities that includes the transactions and viewing of artwork.

Requirements for the proposed information system:
The system should have the ability to maintain and update business-related processes that are able to handle and keep up with complex and high-volume transactions under a reasonable time.

Scope Statement:
We will develop and implement a system that allows our client to recreate gallery walks/viewings virtually, keep track of business contacts and clientele, and manage auction and employee schedules, transaction processing, financials, and accounting.

Original System Request:

Project Name:
Wells Gallery Information System

Project Sponsor:
Jasmine Wells, owner

Business need:
Local art lover and entrepreneur, Jasmine Wells, recently established a gallery with a small performance space in the Richmond Arts District to promote both new and established artists from around the country. She started her business last year by hiring a few part time employees so she could still attend art fairs and private auctions to build her collection as well as discover new talent and found herself quickly overwhelmed trying to juggle everything. After an initial period of struggling to learn about the business and trying to make a profit, things were just beginning to fall into place as the pandemic shut everything down in early spring. In the interim, she has been reading articles and researching alternative ways to engage her clientele until the gallery and performance space can fully reopen to the public and has determined that a suitable information system would allow her to better support both her business and the artists she represents. Jasmine had taken some information system courses in college and realized that she could move exhibitions and performances online and potentially expand her business by taking advantage of some of the newer technologies available. She has asked your team to help develop a system to meet her business needs. Recreate gallery/performance experience virtually, manage auction and employee schedules, transaction processing, financials and accounting, keep track of business contacts (artists, dealers) and clientele (for marketing/donor support).

Functionality: Facilitate and manage the business operations in order to:
- Schedule and manage work requests/events
- Establish a way to present exhibits/performances virtually
- Manage employees
- Manage financials and accounting
- Keep track of inventory
- Keep track of business contacts and customers
- Manage advertising/web presence
- Take advantage of newer technologies

Business Value:
- Improve engagement/analytics to increase revenue, increase customer base,
- improve efficiencies and maintain good relations with contacts and clientele

Special Issues and Constraints:

- Just purchased a laptop computer with an external HD webcam
- Currently uses only Microsoft Office software (Word, Excel)
- Knowledgeable about the internet and teleconferencing services
- Has a Facebook account for the business and know that many of her
- customers use Facebook, Instagram, Pinterest

Business Case:

Technical Feasibility Study:
From a technical issues standpoint, implementing a gallery/performance experience virtually is a task better said than done. The (medium) risk goes along with the possibility of not giving an authentic experience of gazing upon the art pieces. Making sure that the art pieces are as stunning in picture form as they are in person, this can be solved by having a professional photographer take the pictures and having them approved by the artist. The next is the (medium) risk in regards to managing auction and employee schedules, it is possible that this could be handled without the attention to detail it needs and it messes up the auction schedules. Having faulty auction schedules would affect the income of the business and that would have a negative impact on employee pay. This can be avoided by having a competent schedule keeper proficient in excel. The hassle of keeping track of business contacts can also be at (high) risk if not managed by someone competent. Losing business contacts can result in a loss in the consumer base like artists and dealers. This can be solved the same way the previous risk can be mitigated.

Economic Feasibility Study:
Viewing the numbers and calculations from a business perspective, we can see that Jasmine Wells can indeed afford this new information system. After some detailed calculations, we can see that at the end of the first year, the total cost comes around $89,000. The first year focuses on implementing the new systems and beginning the hiring process for programmers and web designers as well as employee training. Starting something new can stir up some risks the company might face such as COVID's presence and bank loans interest, but in the end, we think that it's worth implementing this new system. We can see that Jasmine would hit the break even in the first year which means that she wouldn't be losing anymore money. Despite hitting the break even, she gained a handful of benefits and resources that can help her in the long run such as keeping track of inventory, being able to easily schedule people, keeping track of business contacts and customers, and many more benefits along the way. Once she invests in this new information system and applies it to the company, it will allow her to have more control over time management and financials and accounting management, and she won't lose any more money while using this system. If the company were to lose track of their inventory as well as their business contacts and customers, it would lead to a downfall in their economy. For example, we estimated that the reduced amount of inventory lost is around $5,000, and if they were to lose track of their inventory, they would lose this money. If the company were to carry out this plan, risks such as COVID and bank loans are things they need to keep in mind. The (high) risk of COVID last year was due to the fact that it caused many workers to have less hours and even caused laid off work for some employees. However, COVID has gotten better in the past few months and it's not as bad as it used to be. The (medium) risk of COVID allowed customers to come back to work. If workers spent less hours working, they would have less money to spend on things and therefore would lead to saving money. Another risk would be bank loans interest.

We believe that the bank loans interest would be a (low) risk, assuming that Jasmine has been with this business for a long time which doesn't require a lot of money they would have to borrow from the bank. Implementing this new information system would allow customer satisfaction and a more organized work environment.

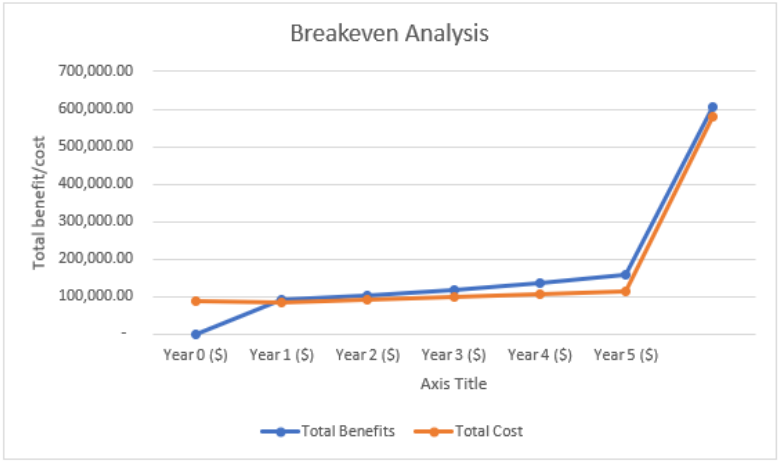
Organizational Feasibility Study:

It is very possible the current business operations will be able to embrace the new system. What they are trying to do is not anything new and there are other art galleries doing the same, so it is entirely possible that this business can thrive in this new space. One (low) risk that can be avoided is to take proper care of the inventory, possibly someone proficient in cataloging and having the appropriate inventory program. Art galleries are not as complex when it comes to their storage as a shipping warehouse, but there still needs to be a system of organization and not having one can lead to theft or even fraud. Another thing that could be at (high) risk is transaction processing. The possible deficiencies in transaction processing, internal processes, or controls result in the loss of payment. These occurrences can be the result of a couple of things such as human error, faulty process design, or IT applications systems failure. To avoid having this high-risk situation happening, it would be wise to invest in a sound IT system. We would conclude that the project is strategically aligned with its set goals. With this upgrade not being anything new, we can see that their current customers are satisfied with the experience. Having the option to view the gallery at home can also attract new customers and increase the traffic to their website.

Cost Benefit & Breakeven Analysis:

	Year 0 ($)	Year 1 ($)	Year 2 ($)	Year 3 ($)	Year 4 ($)	Year 5 ($)	Total ($)
Benefits							
Increased in sales	-	60,000.00	69,000.00	79,350.00	91,252.50	104,940.38	404,542.88
Website Advertising	-	25,000.00	28,750.00	33,062.50	38,021.88	43,725.16	168,559.53
Reduce Inventory Losses	-	5,000.00	5,750.00	6,612.50	7,604.38	8,745.03	33,711.91
Total Benefits	-	**90,000.00**	**103,500.00**	**119,025.00**	**136,878.75**	**157,410.56**	**606,814.31**
Development Costs							
Labor:							
Project planning	500.00	-	-	-	-	-	500.00
Analysis and design (80 hrs @ $50/hr)	4,000.00	-	-	-	-	-	4,000.00
Programming and Web design (100 hrs @ $60/hr)	6,000.00	-	-	-	-	-	6,000.00
Traning	600.00	-	-	-	-	-	600.00
System & Spacing:							
Software (Utilities, office)	1,200.00	-	-	-	-	-	1,200.00
Hardware	6,000.00	-	-	-	-	-	6,000.00
Office Space & Equipment	4,000.00	-	-	-	-	-	4,000.00
Total Development Costs	**22,300.00**	-	-	-	-	-	**22,300.00**
Operating Costs							
Software Updates	-	1,200.00	1,200.00	1,200.00	1,200.00	1,200.00	6,000.00
Hardware Updates	-	800.00	800.00	800.00	800.00	800.00	4,000.00
Wages and Salaries:							
Webmaster (part-time)	30,000.00	32,400.00	34,992.00	37,791.36	40,814.67	44,079.84	220,077.87
Business manager (part-time)	35,000.00	37,800.00	40,824.00	44,089.92	47,617.11	51,426.48	256,757.52
Staff (part-time)		10,000.00	10,800.00	11,664.00	12,597.12	13,604.89	58,666.01
Office Expense:							
User training	500.00	650.00	800.00	900.00	1,000.00	1,200.00	5,050.00
Internet Service Provider fees	1,000.00	1,100.00	1,210.00	1,331.00	1,464.10	1,610.51	7,715.61
Total Operating Costs	**66,500.00**	**83,950.00**	**90,626.00**	**97,776.28**	**105,493.00**	**113,921.72**	**558,267.01**
Total Cost	**88,800.00**	**83,950.00**	**90,626.00**	**97,776.28**	**105,493.00**	**113,921.72**	**580,567.01**
Net Benefits	**(88,800.00)**	**6,050.00**	**12,874.00**	**21,248.72**	**31,385.75**	**43,488.84**	**26,247.31**
ROI							**5%**
NPV of Net Benefits (@ 4%)							**$9,984.04**

Notes (Assumption):
Benefit increase each year @ 1.15
Salary increase each year @ 1.08
Internet Service Provider fees @ 1.10



Work Plan/Gantt Chart:

Task		Aug 30 - Sep 3	Sep 6 - Sep 10	Sep 13 - Sep 17	Sep 20 - Sep 24	Sep 27 - Oct 1	Oct 4 - Oct 8	Oct 11 - Oct 15	Oct 18 - Oct 22	Oct 25 - Oct 29	Nov 01 - Nov 05	Nov 08 - Nov 12	Nov 15 - Nov 19	Nov 22 - Nov 26	Nov 29 - Dec 03	Dec 06 - Dec 10	Dec 13 - Dec 17	
	Week #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Total hour for task
Assignment 1 due 9/07 11:59pm	**Name**																	
Team Charter (Team Mission Statement)		1																1
Assignment 2 due 9/14 11:59pm																		
Business Case (Purpose & Business Value)			0.1															0.1
Scope Statement	Renfred		0.1															0.1
Technical Feasibility Study	Nicholas		0.5															0.5
Organizational Feasibility Study	Nicholas			0.5														0.5
Cost-Benefit & Breakeven Analysis	Zhou		1	1														2
Economic Feasibility Study	Dalena			1														1
Assignement 4 due 9/21 11:59pm																		0
Functional	Renfred				0.2													0.2
Nonfunctional	Nicholas				0.2													0.2
Project Management (Gantt Chart)	Zhou/Dalena				3													3
Assignment 5 due 9/28 11:59pm																		
Casual Use Case #1	Everyone					0.6												0.6
Casual Use Case #2	Renfred					1												1
Casual Use Case #3	Zhou					1.5												1.5
Fully Dressed Use Cases #1	Nick/Dalena					2												2
Fully Dressed Use Cases #2	Dalena					3												3
Project Management (Gantt Chart)	Zhou					0.2												0.2
Assignment 6 due 10/5 11:59pm																		
Context Diagram	Nick						0.3											0.3
Data Flow Fragment #1	Dalena						1											1
Data Flow Fragment #2	Zhou						0.3											0.3
Data Flow Fragment #3	Renfred						0.5											0.5
Level 0 DFD	Dalena/Zhou/Renfred						1.2											1.2
Project Management (Gantt Chart)	Dalena/Zhou						0.1											0.1
Assignment 7 due 11/4 11:59pm																		
Interface Design Prototyping	Dalena/Zhou/Renfred									1.5								1.5
Walk-Through Evaluation	Nicholas									0.5								0.5
Project Management (Gantt Chart)	Dalena									0.1								0.1
Assignment 8 due 11/9 11:59pm																		
Entity Relationship Diagram	Everyone										1.25							1.25
Project Management (Gantt Chart)	Dalena										0.1							0.1
Assignment 9 due 11/30 11:59pm																		
Appearance/Table of Contents	Zhou/Dalena													1				1
Project Description	Zhou/Dalena													0.5				0.5
System Request	Zhou/Dalena													0.5				0.5
Business Case (FA & CBA)	Zhou/Dalena													0.5				0.5
Project Management (Gantt Chart)	Zhou/Dalena													0.5				0.5
Requirements/Use Cases/DFD/ERD/UIP/UTR	Zhou/Dalena													0.5				0.5
Executive Summary/Recommendations	Zhou/Dalena													1				1
Total hours spent each week:		1	1.7	2.5	3.4	8.3	3.4	0	0	2.1	1.35	0	0	4.5	0	0	0	28.25

Requirement Definition:

Functional:

The system must keep track of past and present inventory.

The system must be able to keep track of business contacts and customers, whether it be past, present or future.

The system must be able to manage employees.

The system must be able to manage financials and accounting.

The system must be able to schedule and manage work requests and work events.

The system must establish a way to present exhibits and performances virtually.

Non-functional:

The system should be able to take advantage of new technologies.

The system must be accessible to unfamiliar employees.

The system should have fast processing speed for busy work.

The system must have a secure security system.

Use Cases:

Casual Use Cases 1:

Use Case Name: Viewing Virtual Art Gallery	ID: UC-1	Priority: High
Actor: Aesthete (art lover)		
Description: The customers log on to see a virtual art gallery.		
Trigger: The customer enjoys viewing art and, because of the pandemic, in-person shows are very limited which leads to a virtual art gallery.		
Type: External		
Preconditions: 1. Customer types in the web address to access the website. 2. Customer is identified as they sign in to access the virtual art gallery webpage.		
Normal Course: 1.0 Schedule a section for specific art work presentations. 1. Customer browses through existing art works and selects one to get more information. 2. System shows the spot availability for that section. (available, full) 3. For fully booked section, system displays following options for customer: a. Customers pick another time slot, or another art piece; proceed to step 4. b. Customers did not wish to select another time slot nor other art piece; return to step 1. 4. System displays other time slots for the same art piece and also other artwork in the same time slot. 5. Customer chooses a new desired time slot/artwork and clicks confirm. 6. Confirmation page showing the time slot for specific art work the customer chose.		
Postconditions: 1. Unconfirmed Time Slot/Artwork is stored in the Unconfirmed Order datastore. 2. Confirmed Time Slot/Artwork is stored in the Confirmed Order datastore. 3. Gallery Manager sent notice of Confirmed Order.		

Casual Use Cases 2:

Use Case Name: Manage Financials/Accounting	ID: UC-2	Priority: Medium
Actor: Gallery Manager and Owner (Jasmine Wells)		
Description: Gallery Manager sorts accounting and financial information in a way that's organized and easy to recall.		

Trigger: Gallery Manager wants to keep better track of any and all financial/accounting information.
Type: External
Preconditions: 1. Gallery managers are authenticated by logging in with their information. 2. Website will show all financial/accounting information over the past 6 months. It will show in red for money outgoing for purchases etc. and green for when they bring in revenue.
Normal Course: 1.0 Revenue made from an art gallery arrives. 1. Gallery manager logs into the website and inputs user information. 2. Gallery manager selects the option to view the account for a certain period of time. 3. Gallery manager selects option to add financial information. 4. Gallery manager inputs essential information, what the money's for and the amount. 5. Gallery manager selects the status of money. (received, outgoing) 6. System displays the status of the transaction. (green if money earned, red if money lost)
Postconditions: 1. Revenue that was not categorized as either received or outgoing will show up as an error until fixed. 2. Added revenue will appear in a separate place to see all the additions for the month. 3. Subtracted transactions will appear in a separate place to see all the subtractions for the month.

Casual Use Cases 3:

Use Case Name: Manage/Track Inventory	ID: UC-3	Priority: Medium
Actor: Gallery Manager and Owner (Jasmine Wells)		
Description: Professional and accurate way to keep track of past and present inventory.		
Trigger: When a new art piece comes into shop or when it is sold.		
Type: External		
Preconditions: 1. Gallery manager logs in to the app. 2. The app shows all artwork information in the stock.		

Normal Course: 1.0 New art pieces came into the shop. 1. Gallery manager inputs art piece information into the system: date, artist name, art type, and sales amount. 2. System displays status of inputted information: a. If some information is left blank, system displays an error; return to step 1. b. If all information is filled out; proceed to step 3. 3. System stores the information and adds it to the existing inventory. 4. On the existing inventory page, the store manager/owner is able to select sold items as "paid." 5. Inventory page will refresh and display the most recent and accurate inventory.
Postconditions: 1. New art pieces entered into the system will be part of existing inventory. 2. System will generate a report showing all existing inventory with total money worth.

Fully Dressed Use Cases 1:

Use Case Name: Manage Auction & Employee Schedules	ID: UC-4	Priority: High
Actor: Gallery Manager and Owner (Jasmine Wells)		
Description: The gallery manager approves or disapproves employer and auction schedule requests.		
Trigger: Employer schedules and auctions are requested and the gallery manager is notified.		
Type: External		
Preconditions: 1. The gallery manager is authenticated by logging in to his/her account. 2. Notice of employee and auction schedule requests received by gallery manager. 3. System displays the current schedule of events.		
Normal Course: 1.0 Create an accurate employee schedule. 1. Gallery manager receives requests for employee scheduling. 2. System displays a list of employee schedule requests. 3. System displays the current employee schedule. 4. Gallery manager requests employee acceptance for employee schedule request through email and system displays results of accepted, rejected, or cancelled auction schedule. (see Alternative Course 1.2) 5. Gallery manager approves employee schedule request. 6. System notifies employees of schedule approval.		

7. System sends out a schedule for the week to employees.

1.1 Create an accurate auction schedule.

1. Gallery manager receives requests for auction scheduling,
2. System displays a list of information of people requesting auctions.
3. System displays the current schedule of events.
4. Gallery manager requests seller acceptance for auction schedule request through email and system displays results of accepted, rejected, or cancelled auction schedules.
(see Alternative Course 1.3)
5. Gallery manager approves auction schedule request.
6. System notifies customers of auction schedule approval.
7. System sends out a schedule for the week to employees and sellers.

Postconditions:

1. Schedules are approved by the gallery manager and sent out per week to employees.
2. Employees are expected to let the manager know if any edits need to be made.
3. Auction schedules are finalized and sent out to employees and sellers per week scheduled.

Alternate/Exceptional Flows:

1.2 Gallery manager approves or disapproves of schedule request.

1. Gallery manager requests employee approval for employee schedule request.
2a. Employee accepts requested schedule request.
3a. Gallery manager updates system of approved accepted employee schedule request.
4a. System marks accepted request as Confirmed Employee Schedule.
2b. Employee rejects requested schedule request.
3b. Gallery manager updates system of approved rejected employee schedule requests.
4b. System marks unaccepted request as Unconfirmed Employee Schedule.
5b. Return to step 1.
2c. Employee doesn't respond within a given day and the request is cancelled.
3c. Gallery manager updates system of approved cancelled employee schedule requests.
4c. System marks cancelled request as Cancelled Employee Schedule.

1.3 Gallery manager approves or disapproves of auction schedule request.

1. Gallery manager requests seller approval for auction schedule request.
2a. Auction seller accepts requested auction schedule request.
3a. Gallery manager updates system of approved accepted auction schedule request.
4a. System marks accepted request as Confirmed Auction Schedule.
5a. System notifies sellers of accepted auction through email and website.
2b. Auction seller rejects requested auction schedule request.
3b. Gallery manager updates system of approved unaccepted auction schedule request.
4b. System marks unaccepted request as Unconfirmed Auction Schedule.
5b. Return to step 1.
2c. Auction seller doesn't respond within a given day and the request is cancelled.
3c. Gallery manager updates system of approved cancelled auction schedule request.
4c. System marks cancelled request as Cancelled Auction Schedule.

5c. System notifies sellers of cancelled auctions through email and website.

Inputs/Outputs for Steps:

1.0 Create an accurate employee schedule.
1. → Employee ID
2. ← List of Employee Schedule Requests
3. ← Current Employee Schedule
4. → Employee Acceptance Request
5. → Final Employee Schedule Approval
6. → Employee Acceptance Notice
7. ← Notice of Employee Schedule

1.1 Create an accurate auction schedule.
1. → Auction ID
2. ← List of Auction Schedule Requests
3. ← Current Schedule of Events
4. → Seller Acceptance Request
5. → Final Auction Schedule Approval
6. → Seller Acceptance Notice
7. ← Notice of Auction Schedule

1.2 Gallery manager approves or disapproves of schedule request.
1. ← Request Employee Approval
2a. ← Employee Acceptance
3a. → Approved Employee Acceptance
4a. → Updated Confirmed Employee Schedule
2b. ← Employee Rejection
3b. → Approved Employee Rejection
4b. → Updated Unconfirmed Employee Schedule
2c. ← Employee Cancellation
3c. → Approved Employee Cancellation
4c. → Updated Cancelled Employee Schedule

1.3 Gallery manager approves or disapproves of auction schedule request.
1. ← Request Seller Approval
2a. ← Auction Seller Acceptance
3a. → Approved Auction Acceptance
4a. → Updated Confirmed Auction
5a. → Notice of Accepted Auction
2b. ← Auction Seller Rejection
3b. → Approved Auction Rejection
4b. → Updated Unconfirmed Auction
2c. ← Auction Seller Cancellation
3c. → Approved Auction Cancellation
4c. → Updated Cancelled Auction
5c. → Notice of Cancelled Auction

Summary Inputs/Outputs:

Inputs:	Source:
• Employee ID	Gallery System
• Employee Acceptance Request	Gallery Manager
• Final Employee Schedule Approval	Gallery Manager
• Employee Acceptance Notice	Gallery Manager
• Auction ID	Gallery System
• Seller Acceptance Request	Gallery Manager
• Final Auction Schedule Approval	Gallery Manager
• Seller Acceptance Notice	Gallery Manager
• Approved Employee Acceptance	Gallery Manager
• Updated Confirmed Employee Schedule	Gallery System
• Approved Employee Rejection	Gallery Manager
• Updated Unconfirmed Employee Schedule	Gallery System
• Approved Cancellation	Gallery Manager
• Updated Cancelled Employee Schedule	Gallery System
• Approved Auction Acceptance	Gallery Manager
• Updated Confirmed Auction	Gallery System
• Notice of Accepted Auction	Gallery System
• Approved Auction Rejection	Gallery Manager
• Updated Unconfirmed Auction	Gallery System
• Approved Auction Cancellation	Gallery Manager
• Updated Cancelled Auction	Gallery System
• Notice of Cancelled Auction	Gallery System

Outputs:	Destination:
• List of Employee Schedule Requests	Gallery System
• Current Employee Schedule	Gallery System
• Notice of Employee Schedule	Gallery Manager
• List of Auction Schedule Requests	Gallery System
• Current Schedule of Events	Gallery System
• Notice of Auction Schedule	Gallery Manager
• Request Employee Approval	Gallery Manager
• Employee Acceptance	Employee
• Employee Rejection	Employee
• Employee Cancellation	Employee
• Request Seller Approval	Gallery Manager
• Auction Seller Acceptance	Auction Seller
• Auction Seller Rejection	Auction Seller
• Auction Seller Cancellation	Auction Seller

Fully Dressed Use Cases 2:

Use Case Name: Artwork Bidding Transaction Processing	ID: UC-5	Priority: High
Actor: Gallery Manager and Owner (Jasmine Wells)		
Description: The gallery manager approves or disapproves of highest artwork bidder.		
Trigger: A pending transaction for highest bidding artwork and the gallery manager gets notified of customers who bid from highest to lowest.		
Type: External		
Preconditions: 1. The gallery manager is authenticated by logging into her account. 2. Notice of pending orders from highest bid to lowest bid received by gallery manager.		
Normal Course: 1.0 Approve the highest pending artwork bidding transaction. 1. Gallery manager receives a list of customers who bid on artwork from highest to lowest. 2. System displays a list of customers. 3. Gallery manager chooses highest bidded customer. 4. Gallery manager requests customer acceptance for bidded artwork through email and system displays results of accepted, denied, or cancelled bidded artwork. (see Alternative Course 1.1) 5. Gallery manager approves artwork transaction. 6. System notifies customer of order approval.		
Postconditions: 1. Highest Bidded Pending Order is approved by gallery manager. 2. Pending Order is sent to gallery along with other approved orders. 3. Gallery prepares artwork for shipment to customer.		
Alternate/Exceptional Flows: 1.1 Customer accepts or rejects bidded artwork transaction. 1. Gallery manager requests customer approval for artwork transaction. 2a. Customer accepts transaction of artwork within a given hour of response. 3a. Gallery manager updates system of approved accepted artwork transaction. 4a. System marks accepted order as Confirmed Order. 5a. System notifies the customer of the approved accepted order. 2b. Customer rejects transaction of artwork. 3b. Gallery manager updates system of approved unaccepted artwork transaction. 4b. System marks unaccepted order as Unconfirmed Order.		

5b. Return to step 1.
2c. Customer doesn't respond within a given hour and request is cancelled.
3c. Gallery manager updates system of approved cancelled artwork transaction.
4c. System marks cancelled order as Cancelled Order.
5c. System notifies the customer of the approved cancelled order.

Inputs/Outputs for Steps: (Information for Steps)
1.0 Approve the highest pending artwork bidding transaction.
1. → Order ID
2. ← List of Customers
3. → Choice of Highest Bidding Customer
4. → Customer Acceptance Request
5. → Final Transaction Approval
6. → Customer Acceptance Notice
1.1 Customer approves or disapproves bidded artwork transaction.
2a. ← Customer Acceptance
3a. → Approved Acceptance
4a. → Updated Confirmed Order
5a. → Order Approval Notice
2b. ← Customer Rejection
4b. → Updated Unconfirmed Order
2c. ← Customer Cancellation
3c. → Approved Cancellation
4c. → Updated Cancelled Order
5c. → Order Cancelled Notice

Summary Inputs:

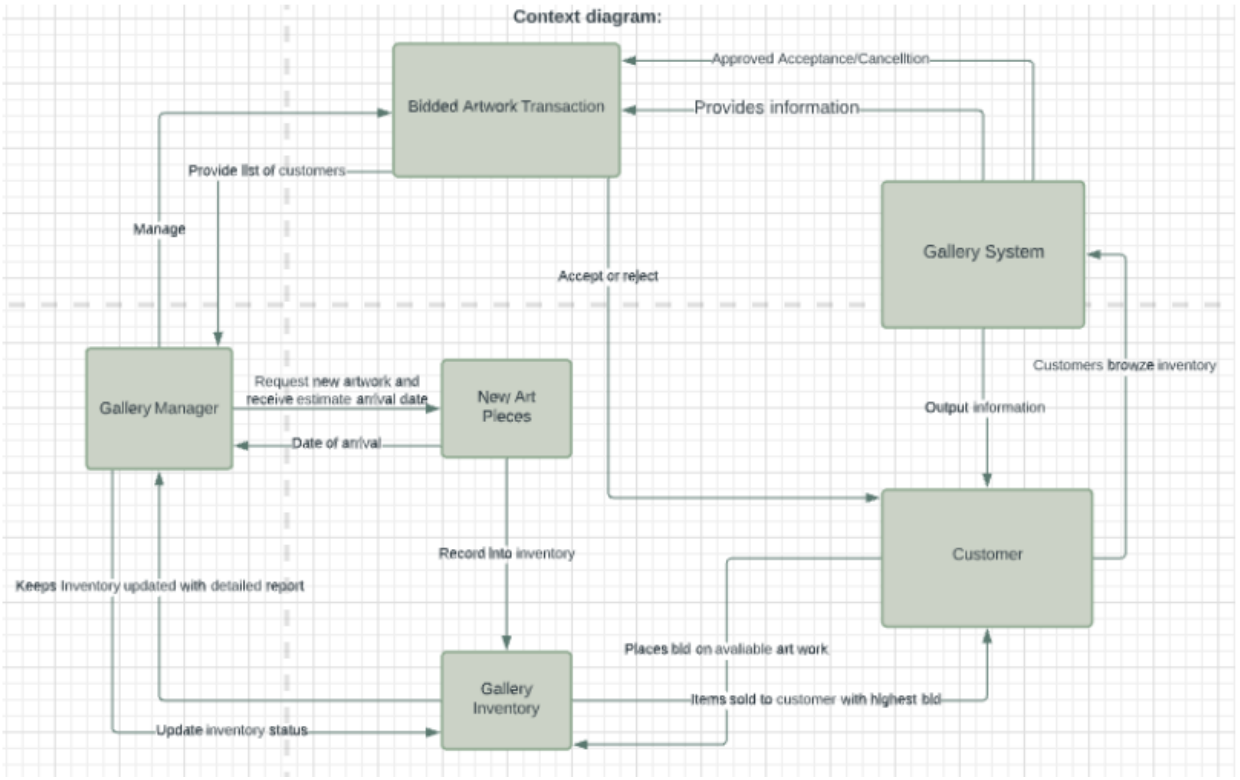
Inputs:	Source:
• Order ID	Gallery Manager
• Choice of Highest Bidded Customer	Gallery Manager
• Customer Acceptance Request	Gallery Manager
• Final Transaction Approval	Gallery Manager
• Customer Acceptance Notice	Gallery System
• Approved Acceptance	Gallery Manager
• Updated Confirmed Order	Gallery System
• Order Approval Notice	Gallery System
• Updated Unconfirmed Order	Gallery System
• Approved Cancellation	Gallery Manager
• Updated Cancelled Order	Gallery System
• Order Cancelled Notice	Gallery System

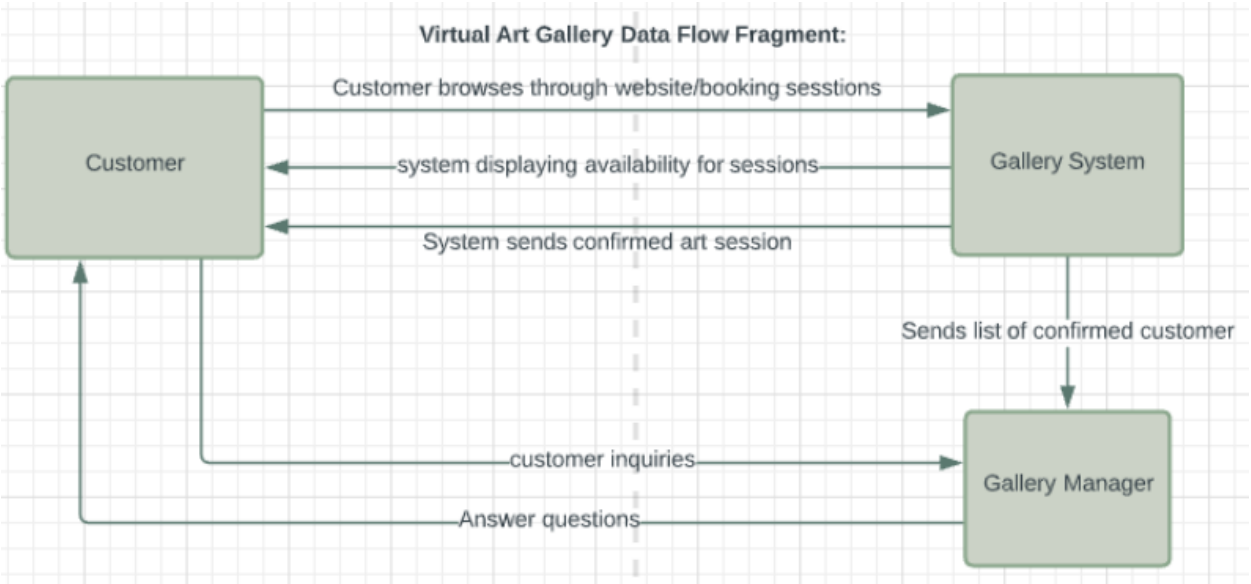
Summary Outputs:

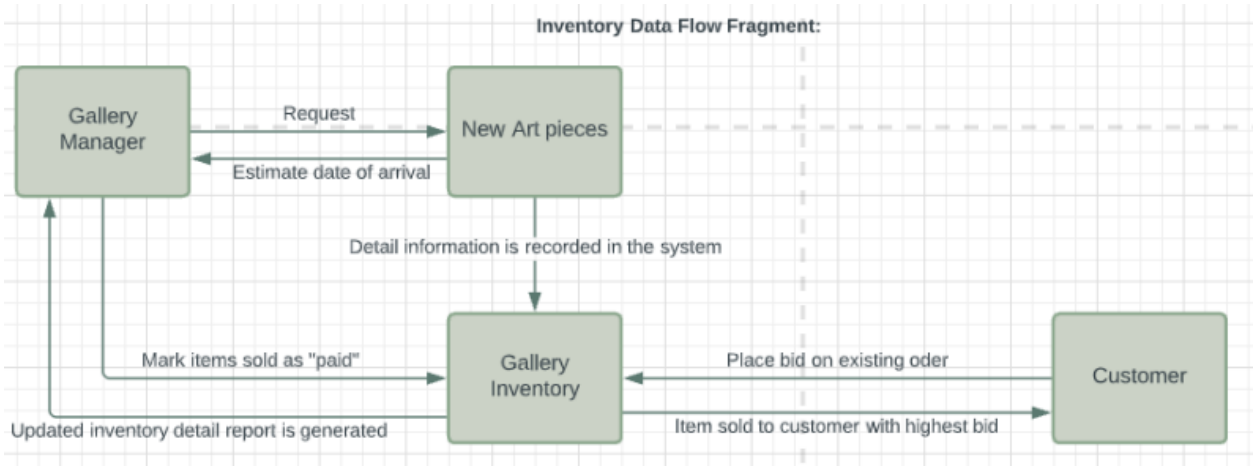
Outputs:	Destination:
• List of Customers	Gallery System

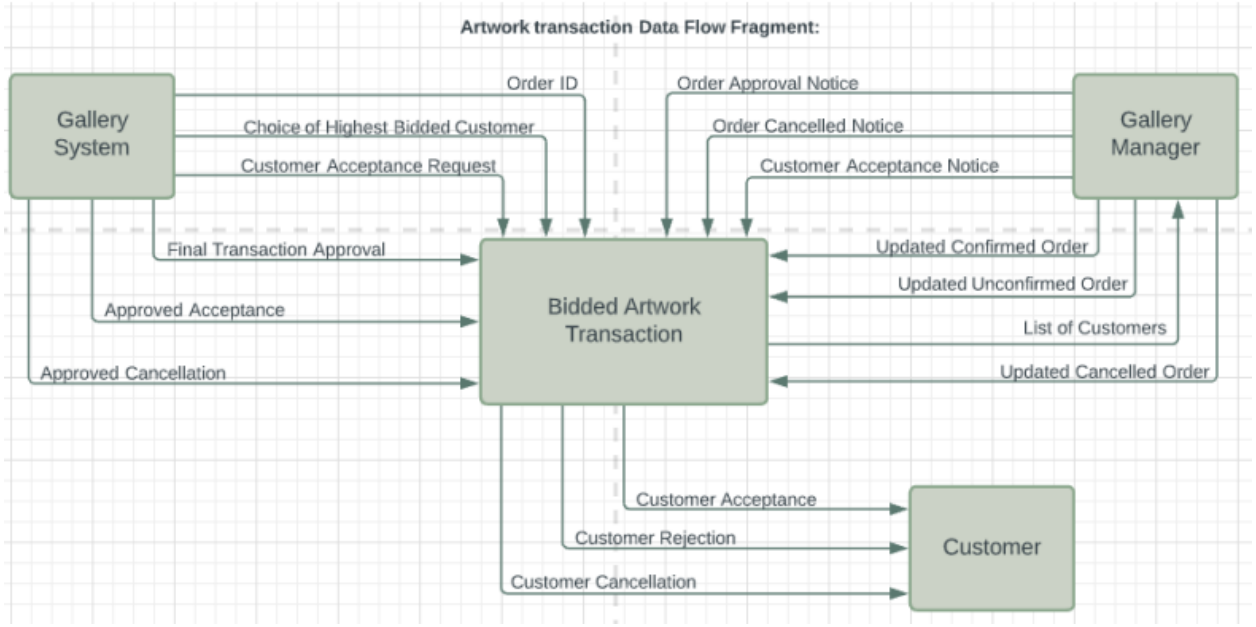
• Customer Acceptance	Customer
• Customer Rejection	Customer
• Customer Cancellation	Customer

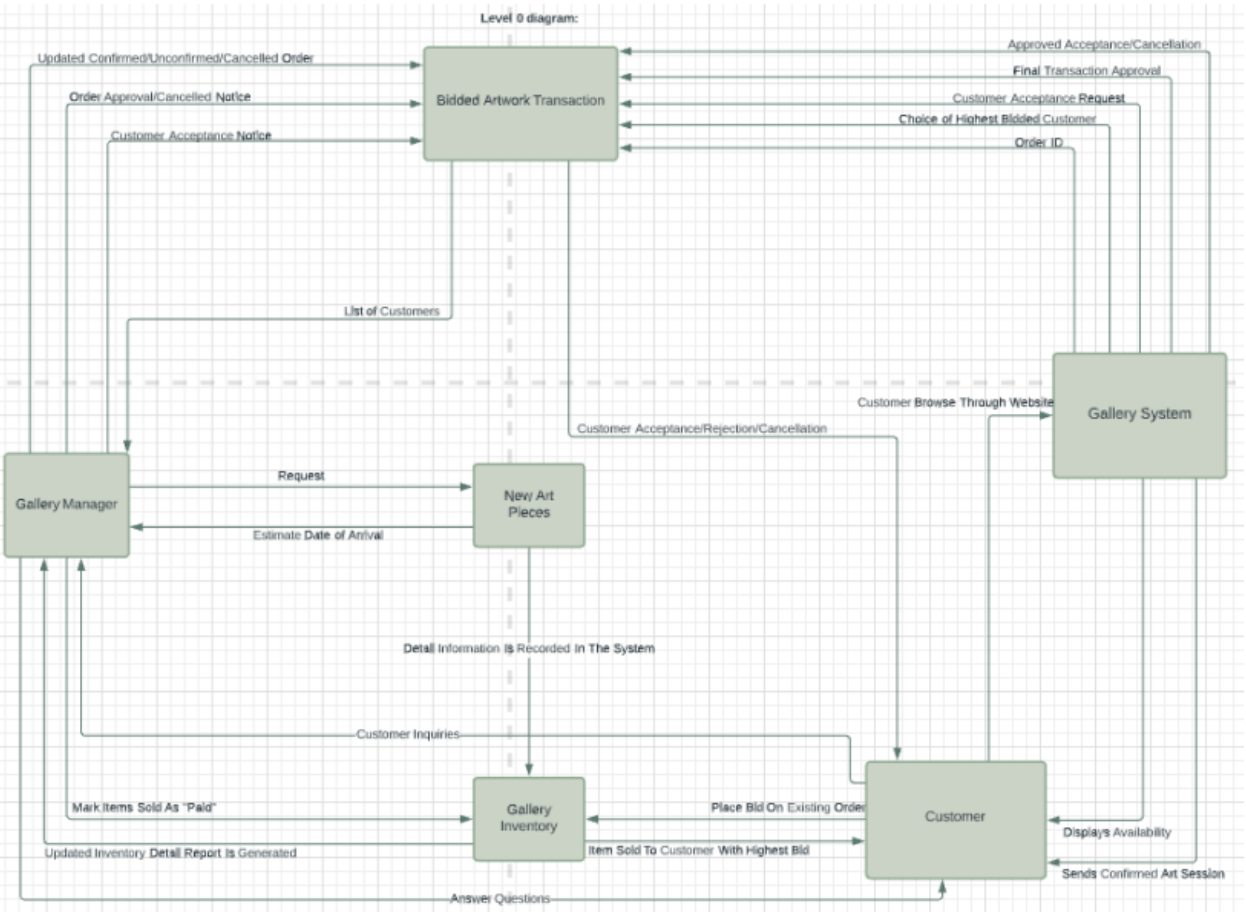
Data Flow Diagrams:



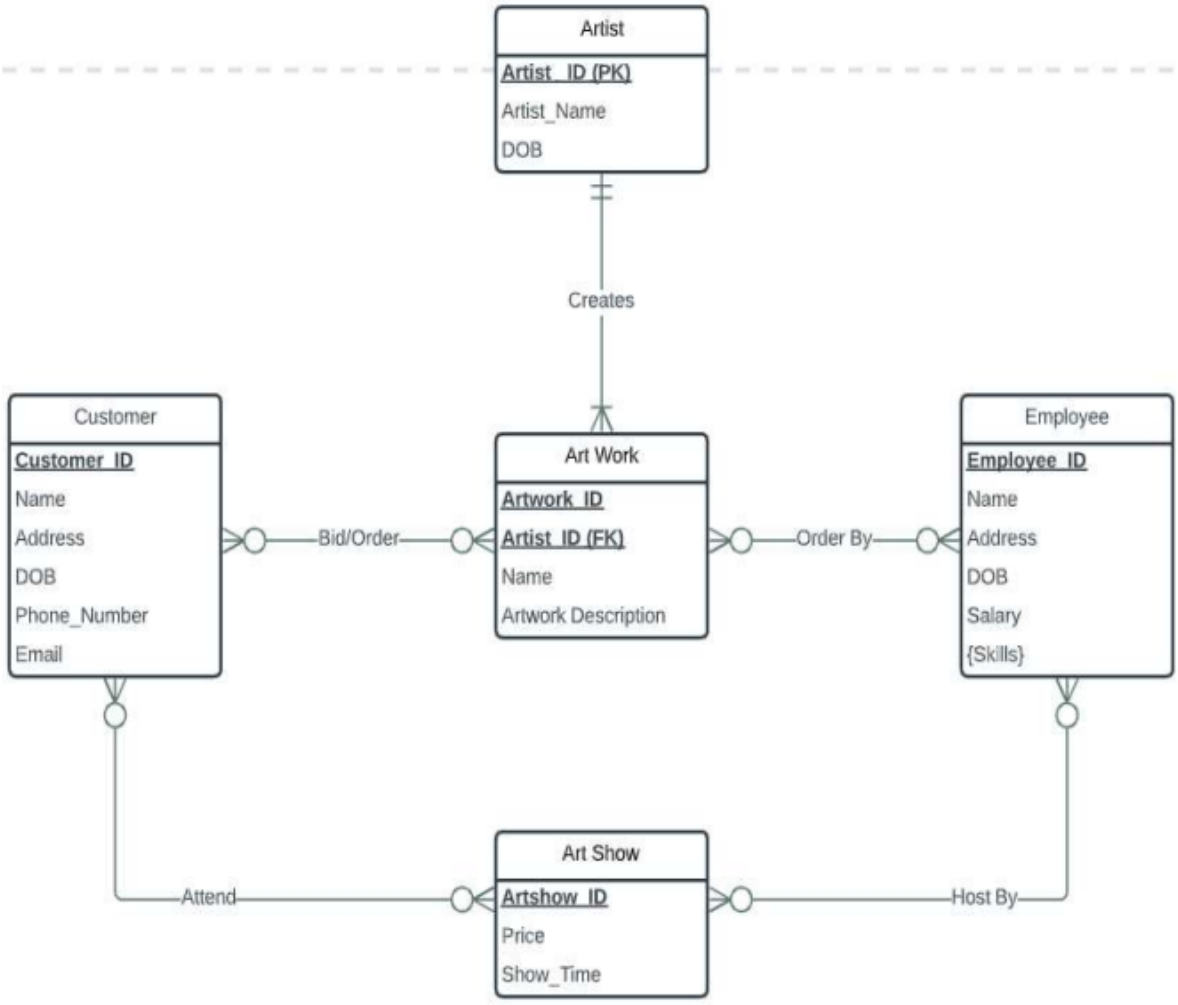



Inventory Data Flow Fragment:
Gallery Manager
Request
Estimate date of arrival
New Art pieces
Detail information is recorded in the system
Mark items sold as "paid"
Gallery Inventory
Place bid on existing oder
Customer
Updated inventory detail report is generated
Item sold to customer with highest bid

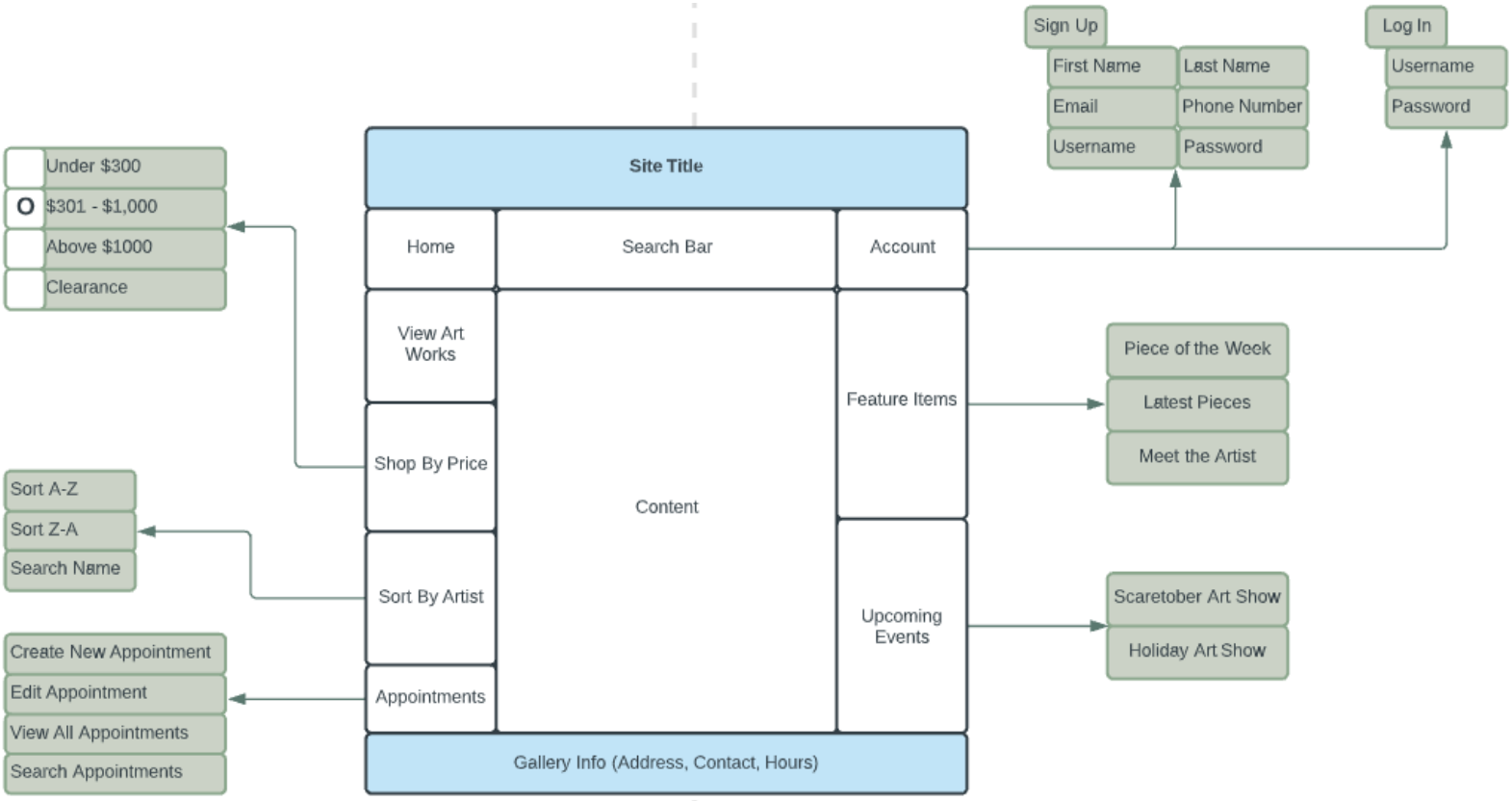

Artwork transaction Data Flow Fragment:
Gallery System
Order ID
Choice of Highest Bidded Customer
Customer Acceptance Request
Order Approval Notice
Order Cancelled Notice
Customer Acceptance Notice
Gallery Manager
Final Transaction Approval
Approved Acceptance
Approved Cancellation
Bidded Artwork Transaction
Updated Confirmed Order
Updated Unconfirmed Order
List of Customers
Updated Cancelled Order
Customer Acceptance
Customer Rejection
Customer Cancellation
Customer


Level 0 diagram:
Updated Confirmed/Unconfirmed/Cancelled Order
Order Approval/Cancelled Notice
Customer Acceptance Notice
Bidded Artwork Transaction
Approved Acceptance/Cancellation
Final Transaction Approval
Customer Acceptance Request
Choice of Highest Bidded Customer
Order ID
List of Customers
Customer Browse Through Website
Gallery System
Customer Acceptance/Rejection/Cancellation
Gallery Manager
Request
Estimate Date of Arrival
New Art Pieces
Detail Information is Recorded in The System
Customer Inquiries
Mark Items Sold As "Paid"
Gallery Inventory
Place Bid On Existing Order
Customer
Displays Availability
Updated Inventory Detail Report is Generated
Item Sold To Customer With Highest Bid
Sends Confirmed Art Session
Answer Questions

Entity Relationship Diagram:



User Interface Prototypes:



Usability Test Report:

Our team conducted this test by getting three users who are non IS students and explained to them the prototype website that was made. We started the demo from the top of the prototype to the bottom. We explained to them the layout and someone mentioned that it is important to have the signup option and the login option next to each other as it is the norm for a lot of websites. They thought having the home button, search bar, and account details at the top was essential because that is where most people would use first. They also mentioned having to log in with email and phone number is good for account security. When we went into detail about the art pieces, they commented on how it was a good idea to have them sorted by price to make the searching process easier. One of the people being shown the prototype said that they liked the idea of having a clearance section for people who do not want to spend a lot but would still want good art. We went on to talk about the "featured items" section and one of them commented that having a "piece of the week" was a good idea to give an artist the spotlight. The other person said that the "meet the artist" tab was a good idea to see who made the art piece and to know who you are potentially buying from. We then went on to talk about the appointments section where you can handle your set arrangement. They thought it was a good idea to be able to edit your appointment in case something comes up and adds to its flexibility. Being able to search for your own or a specific appointment was said to be helpful too. The people being interviewed commented on the "upcoming events" section and said it is a good idea and very fitting to have seasonal events to keep up business throughout the holidays. Finally, they mentioned that having gallery info on the bottom of the webpage is the best option because that is where people usually look for that kind of information. The people looking over the prototype did not have any negative feedback to give but suggested that we routinely update the website. They also said that it is important to have an appealing theme to the website that could change with the seasons and events.

Executive Summary:

In short, overall of what has been completed so far starts at the beginning of the proposed information systems. After the creation of the information systems, we have provided a business case, with feasibility and cost/benefit analyses, a work plan was implemented, use cases were created, data flow/entity relationship diagrams and user interface prototypes were drawn out, and finally, a usability test report was done.

After major components of information systems are completely implemented, it is important to monitor the current system regularly and discover if any improvements can be made or any errors that need to be debugged. With this regular checkup, it can help prevent any mistakes along the ways of the company and information system.

Cyber security plays an essential role in rapid growth in information technology. As systems and computer applications handle almost all activity-based transactions, having tools and procedures will reduce the possibility of encountering frauds. Effective solutions such as asking users to change passwords every two months and notifying them by email/text message if the IP address seems unusual are a few steps that can be taken first to prevent fraud. We also recommend the owner to secure the user login process with a two-factor authentication process. A great example of one would be DUO which is a security platform that provides two-factor authentication as mentioned, and where the user is prompted to the DUO app to authorize the access.