Software Requirements Specification

for

Southbyees Online Art Gallery

Version 1.0 Approved

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Chuddy Buddys

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Revision History

Name	Date	Reason For Changes	Version

1. Introduction

1.1 Purpose

Southby's Art Gallery and Auction system is a platform to connect buyers and sellers of art with each other, over the internet. It intends to give the seller flexibility over how he sells his artwork either through traditional advertisement placement or setting up a bidding system. Similarly, the buyer shall have the liberty to scrutinize artwork and place bids on artwork of liking.

1.2 Document Conventions

Term	Definition
Curation	Selection of artwork for publishing
Buyer	A person who has an account on the site and has buying privileges
Guest	A person who doesn't have an account on the site and has viewing privileges
User	Anyone who is a buyer/guest
Seller	A person who has an account with the privileges to sell artwork
E-commerce	Online model for transactions
SRS	Software requirement specification
Artwork	A single article made by the artist i.e painting, sculpture, photograph

1.3 Intended Audience and Reading Suggestions

The intended audience for this documentation is:
- Dr Naveed Arshad and his Teaching Assistants
- CS 340 Databases Class (Fall 2020)
- Southby's Art Gallery
- Southby's Art Gallery customers (i.e: art collectors, auction houses, artists)

The contents of the SRS include:
- Overall Description: This section delineates the product parameters such as users, features, functionality and any assumptions made
- Use Cases and System Features: This section talks specifically about the different types of use cases that can be expected from the product
- External Interface Requirements: Talks about the user interface and underlying hardware and software
- Other Nonfunctional Requirements: Discusses different dimensions of the requirements i.e. performance, security, safety
- Appendix A: Lists and defines key terms to navigate the SRS
- Appendix B: Gives relevant diagrams and models crucial in understanding the SRS
- Appendix C: Conflict and resolution management

For the Instructor and Teaching Assistants the recommended sequence of sections is:
- Overview->Use cases and System Features-> Other Nonfunctional Requirements-> Overall Description

The rationale for this sequence is that by reading the requirement and system features part first the Instructor and Teaching Assistants can guide us better if our overall description is in sync with them. They will be able to judge the overall description in contrast with the requirements so that we are able to optimize the overall description. The overall description will be the first impression for most people i.e. business associates, investors and industry individuals hence it needs to be accurate yet insightful.

For readers outside this subset, the flow of sequence is to be as written in the document to ensure a general grasp of the product before going into details of use and functionality.

1.4 Project Scope

Southby's Art Gallery and Auction system is intended to unify the divided buyer/seller art market on one platform. It'll also be providing an online system for bidding on artwork which would typically be done at an auction house. This helps increase the penetration of the platform to markets that were not viable before due to physical limitations. Moreover, this will make buying and selling of artwork more accessible to the consumer.

This product will mainly aid artwork purchases and sale for both artwork and seller. Hence the scope of the Southby's Art Gallery and Auction system is including, but not to:
- Artwork Curation: Publish, select and browse artwork as per requirement
- Auctioning of assets: Help seller conduct an online bidding without need for an auctioneer.
- Order Management: Keep track of customer order, manage transaction details, order history and provide ability to give seller feedback
- Dashboard: Offers a holistic view of the business trajectory, sales records, high profile customers

1.5   References

Our system did not require any references.

2. Overall Description:

2.1 Product Perspective:

Southby's Art Gallery and Auction system is an online store which supports several functions for Artwork sellers and buyers. It not only allows the users to buy and sell products (artwork) but also allows the sellers to auction their products.

The system will consist of two parts: the database (backend) and the web application (frontend). The web application will be used by all types of users and the admin, while the admin will also have access to the database directly.

The world is shifting towards e-shopping but there aren't many platforms that allow people to buy artwork with such ease and security. We aim to provide people a secure platform that allows them not only to buy and sell Artwork but also to auction Artwork. This can directly replace the whole conventional idea of exhibitions and Artwork auctions especially considering the current situation of social distancing due to Covid-19.
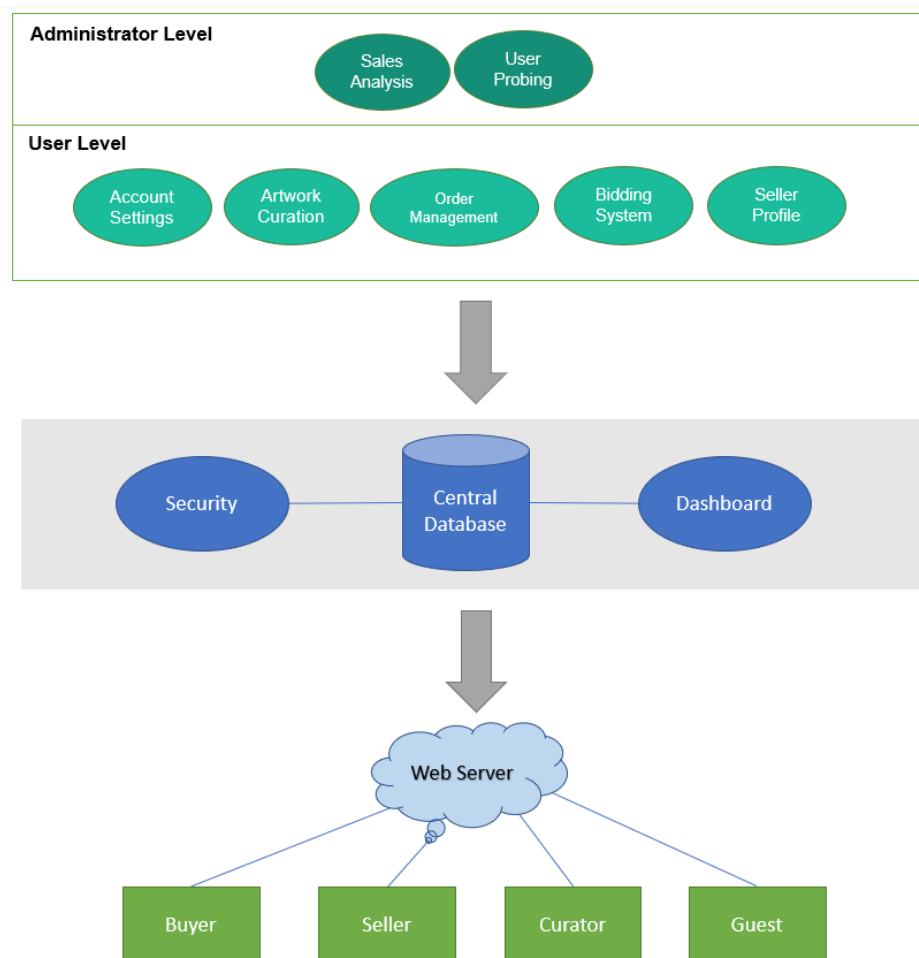

Figure. Multilevel Interaction diagram of Southby's Art Gallery and Auction system

2.2 Product Features:

Art Gallery and Auction Database will provide the features/functions listed below:

- Maintain data associated with the inventory (a collection of artworks).
  - Every artwork will have a price, seller and type.
- Maintain user record.
  - A user can be a seller, buyer, a premium buyer or even a guest user.
  - Every user has a username (unique), password, an email address and a unique ID.
  - Anyone may sign up for a user account.
  - Any user that has already signed up can sign-into their account.
  - Any user can change their personal information.
  - Any Seller or buyer can view their seller profile.
- Upgrade Account.
  - Allow all buyers to upgrade their account to a premium account. Premium account users can take part in bidding/auction.
- Browse Artwork.
  - Allow any user to browse all types of artwork.
  - Allow any user to compare different artwork.
  - System offers them the functionality to filter artworks based on different art attributes
- Handle Transactions.
  - Any logged in user can buy artwork.
  - Any logged in user can post new artwork to sell.
  - Allows the admin to view all transactions that have taken place.
  - Allows the admin to view the transactions filtered according to date and time.
  - Sellers can view their selling history
- Bidding System
  - Any premium buyer can bid on artwork which is at auction.
  - Any seller can put their product for auction.
  - The sellers themselves and the premium buyers can view bidding information
- Product details.
  - Any seller can update their artwork details from the "update artwork details" option.
  - Any buyer can view the details of any Artwork.
- Order details.
  - Any user can view their orders from the "view orders" tab in their dashboard. This option will allow them to view all past and current orders.
  - Any user can view details of a specific order by pressing "view order details" tab in the "view orders" option.
- Backup and security.

- o Allows the admin to download an excel sheet which contains all the transactions that are made on our database.
  - o Allows the admin to set time for monthly/weekly backup which automatically takes place.
  - o Allows the admin to block any user that violated the rules of the Art Gallery and Auction Database.
- Customer – Relation
  - o The system allows the Buyers to leave a feedback/rating for the seller and its product after they purchase a product.
  - o The system allows the seller to view their profile where they can check their ratings/feedback.

2.3 User Classes and Characteristics:

Potential Users can be anyone that simply has an internet connection and a web browser. However, the users may have different types which may be:

- Admin: An admin will be able to view all types of users, transactions and products. Admin can also block users from using the product. Admin has the highest level of accessibility.
- Buyer, Premium Buyer: Any buyer will be able to buy any product available but only premium buyers will be allowed to bid on products. And both have the same mid-level access of data in the system.
- Seller: Any seller may sell or auction any type of artwork. Seller also has a lower level of data access from the system than the admin akin to that of premium buyers.
- Guest: Any guest user can browse artwork and attempt to buy it upon which he will have to make an account first to complete the transaction. Guest has the lowest level of access as they cannot access profiles or rights of purchase, the rest being the same as a normal buyer.
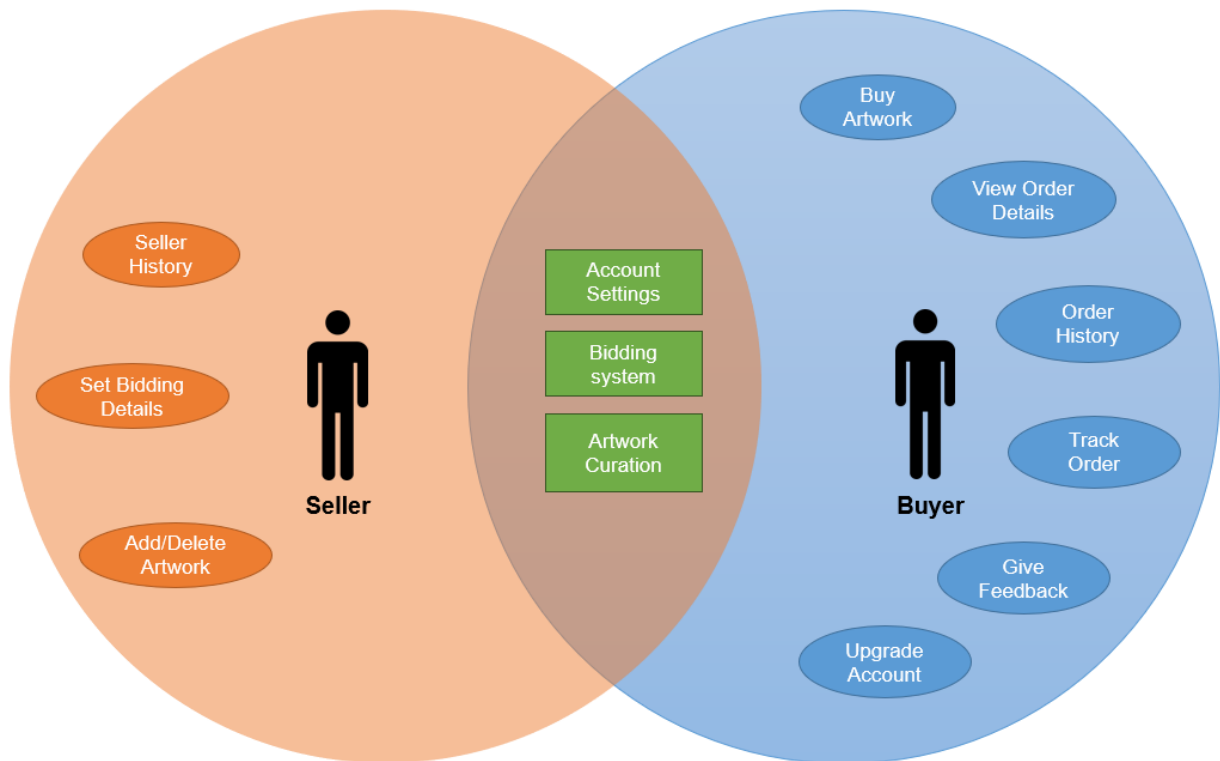
Figure. Illustration depicting customer centered design

2.4 Operating Environment:

Our product will work on all types on environment (cross-platform i.e. can be access via smartphones, tablets, laptops etc.), provided that the user has an internet connection and a web browser to open our products web application. Our product's working is entirely distributed between a front end web application and a backend database system.

2.5 Design and Implementation Constraints:

Due to time constraints and the nature of this course, we will not be implementing some parts of the product and those implemented will not be fully in-depth (for example billing and shipping). Our focus and goal for this product/project will be creating a database and implementing a basic frontend user interface to test our database. However, all use cases mentioned in this document will be implemented.

The internet connection is a constraint since the data is fetched from the database over the internet, it is crucial that the user has an active internet connection for the web application to function.

Other constraints may be:

1. Language Requirements (Our system is entirely based on the UK English Lang)
2. Security Constraints (User has to remember his/her password and/or username else recovery mode isn't available)

2.6 User Documentation:

After the implementation of the product's front-end and back-end, we will be presenting a manual which will contain details and pictures of the user interface with all use cases being applied individually. Moreover, the manual will contain the software compatibility, and discuss several product specifications to ensure a user-friendly experience.

2.7 Assumptions and Dependencies:

Assumptions:

- The admin cannot be a customer/seller.
- The user has a device with an active internet connection and a web browser.
- The user has some knowledge and experience of using a similar product.
- The billing and shipping are always done itself, and there is no possible way to scam.
- There is no refund policy
- The user will never forget his/her credentials including their username and password to their account as there is no recovery mode available.
- Admin has adequate storage space to keep the database as well as it scheduled backup copy
- The user is immediately given premium user privileges as soon as he/she purchases the premium.

Dependencies:

- The system is online, thus in the absence of an internet connection it would not work.
- Front end API

3. Use Cases and System Features

Use Case List

Primary Actor	Use Cases
Admin	1. Login 2. Update credentials 3. View transactions 4. Filter transactions by date/time 5. Export transactions 6. Block Account 7. Backup
Guest	1. Signup 2. Browse artworks 3. View artwork details 4. Compare artwork
Buyer	1. Sign-in 2. Update personal information 3. Browse artworks 4. View artwork details 5. View orders 6. View order details 7. Compare artwork 8. Buy Artwork 9. Upgrade account 10. Rate seller 11. View seller profile
Premium Buyer	1. Sign-in 2. Browse artworks 3. View artwork details 4. Check orders 5. View order details 6. Compare artwork 7. Buy Artwork 8. Rate seller 9. View seller profile 10. Place bid

	11. View bidding details
Seller	1. Sign-in 2. View profile 3. View sell history 4. Add Artwork for bidding 5. Update product information 6. Delete artwork 7. Check order details 8. Add Artwork 9. Update personal information 10. Browse artwork

Use Case Diagram
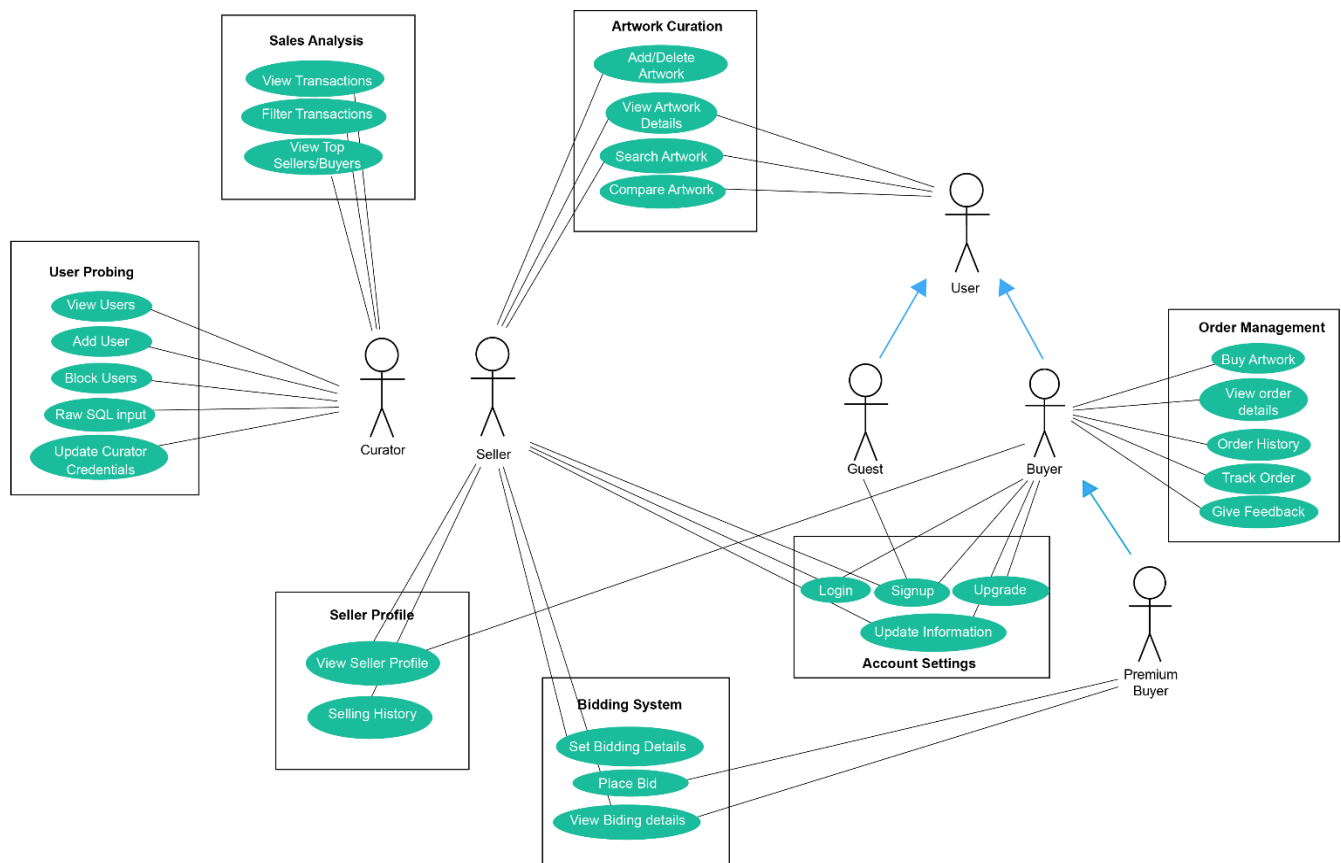
Use Case ID:	U1		
Use Case Name:	Sign Up		
Created By:	Saad Imran	Last Updated By:	Faraz/Ahmed
Date Created:		Date Last Updated:	

Actors:	Guest.
Description:	The system allows the actor to create an account.
Trigger:	Clicking on the "Sign-Up" button displayed in the HUD.
Preconditions:	Not signed in.
Post conditions:	The actor has an account made.
Normal Flow:	1. The actor opens our website and clicks on the "Sign-Up" button. 2. The actor is taken to the Sign-Up page to enter his/her credentials. 3. The actor confirms his details by typing them out again. 4. The actor has successfully created an account.
Alternative Flows:	1. Guest clicks buy artwork while viewing an artwork. 2. Guest is taken to a sign up form 1. Guest clicks view seller profile while viewing an artwork 2. Guest is taken to a sign up form
Exceptions:	Username is already taken.
Includes:	-
Priority:	High
Frequency of Use:	Medium
Business Rules:	-
Special Requirements:	NA
Assumptions:	Working internet connection and a computer present.
Notes and Issues:	

Use Case ID:	U2	
Use Case Name:	Login	
Created By:	Saad Imran	Last Updated By:	Saad Imran
Date Created:		Date Last Updated:	

Actors:	Buyer, Seller, Premium Buyer, Admin.
Description:	The system allows the actor to login to their account.
Trigger:	Clicking the "Log-In" button.
Preconditions:	The actor already has an account made or has signed up.
Post conditions:	The actor has logged in.
Normal Flow:	1. The actor clicks the "Log-In" button. 2. The actor enters their username and password. 3. The actor toggles the "Log-In" button. 4. The actor is logged in successfully (if the password and username is correct.
Alternative Flows:	1. Guest clicks buy artwork while viewing an artwork. 2. Guest is taken to a sign up form 1. Guest clicks view seller profile while viewing an artwork 2. Guest is taken to a sign up form
Exceptions:	Invalid username or password entered.
Includes:	
Priority:	High
Frequency of Use:	High
Business Rules:	
Special Requirements:	NA
Assumptions:	User already has an account made or has signed up.
Notes and Issues:	-

Use Case ID:	U3		
Use Case Name:	Browse Artwork		
Created By:	Saad Imran	Last Updated By:	Faraz/Ahmed
Date Created:		Date Last Updated:	

Actors:	Buyer, Seller, Premium Buyer, Guest.
Description:	The system allows the actor to search for artwork.
Trigger:	Clicking the "Search" button.
Preconditions:	The actor has entered the required artwork's ID or name in the search bar.
Post conditions:	The actor has been taken to a page containing the desired artwork.
Normal Flow:	1. The actor enters the name of the artwork in the search bar. 2. The actor clicks the "Search" button. 3. Relevant search results are displayed on the actors' screen.
Alternative Flows:	The actor can make use of an alternative webpage's hyperlink.
Exceptions:	If the actor enters an invalid entry, then nothing is displayed.
Includes:	
Priority:	High
Frequency of Use:	Very High
Business Rules:	Standard Rules
Special Requirements:	-
Assumptions:	-
Notes and Issues:	-

Use Case ID:	U4		
Use Case Name:	Update Information		
Created By:	Saad Imran	Last Updated By:	Faraz/Ahmed
Date Created:		Date Last Updated:	

Actors:	Buyer, Seller, Admin, Premium Buyer.
Description:	The system allows the actor to update account information.
Trigger:	Clicking the "Update Information" button in the profile section.
Preconditions:	The actor already has an account.
Post conditions:	The actor has successfully updated his/her account information.
Normal Flow:	1. The actor clicks the "Update information" button. 2. The actor changes the information he/she wants to update. 3. User clicks "Save and Exit".
Alternative Flows:	-
Exceptions:	
Includes:	NA
Priority:	Medium
Frequency of Use:	Low
Business Rules:	
Special Requirements:	-
Assumptions:	-
Notes and Issues:	-

Use Case ID:	U5		
Use Case Name:	View Transactions		
Created By:	Saad	Last Updated By:	Faraz /Ahmed
Date Created:		Date Last Updated:	

Actors:	Admin.
Description:	Viewing transaction history
Trigger:	Clicking the "View Transaction" option in admin dashboard.
Preconditions:	Signed in using admin credentials
Post conditions:	List of all transactions in the database displayed
Normal Flow:	1. Actor clicks on the "View Transaction" option. 2. Actor shown all transactions that he can filter from
Alternative Flows:	--
Exceptions:	--
Includes:	--
Priority:	High
Frequency of Use:	Medium
Business Rules:	NA
Special Requirements:	NA
Assumptions:	--
Notes and Issues:	--

Use Case ID:	U6		
Use Case Name:	Buy Artwork		
Created By:	Faraz Karim	Last Updated By:	Faraz Karim
Date Created:		Date Created:	

Actors:	Buyer, Premium Buyer.
Description:	The system allows the actor to purchase an artwork.
Trigger:	Pressing "buy" button for a specific artwork.
Preconditions:	1. The actor is signed into his account. 2. The actor has selected an artwork.
Postconditions:	1. Item is purchased and marked "sold".
Normal Flow:	1. Buyer presses "buy now" button. 2. Buyer taken to transaction info form which he fills. 3. Buyer presses "checkout" button to purchase.
Alternative Flows:	--
Exceptions:	-
Includes:	U24- View Artwork Details.
Priority:	High
Frequency of Use:	High
Business Rules:	-
Special Requirements:	
Assumptions:	Seller and buyer deal with the payment and transport. Payment is made and confirmed at the time of purchase.
Notes and Issues:	-

Use Case ID:	U7	
Use Case Name:	Add Artwork (fixed purchase)	
Created By:	Faraz Karim	Last Updated By: Faraz Karim
Date Created:		Date Last Updated:

Actors:	Seller.
Description:	The system allows the actor to make another artwork available on the store.
Trigger:	Pressing "Add artwork" button.
Preconditions:	Seller is signed into his account
Postconditions:	Artwork is available for purchase from the sellers' account.
Normal Flow:	1. seller presses the add artwork button. 2. seller uploads a picture and information of the artwork. 3. then press "confirm"
Alternative Flows:	-
Exceptions:	Error if all things are not mentioned.
Includes:	U1-Sign-Up
Priority:	High
Frequency of Use:	High
Business Rules:	
Special Requirements:	None
Assumptions:	Seller has the artwork as we can't confirm. Sellers always add unique artwork.
Notes and Issues:	-

Use Case ID:	U8		
Use Case Name:	Compare Artwork		
Created By:	Faraz Karim	Last Updated By:	Faraz Karim
Date Created:		Date Last Updated:	

Actors:	Buyer, Premium Buyer, Guest.
Description:	The system allows the actor to compare artworks side by side.
Trigger:	Pressing "compare" button on main dashboard or when inside specifications of one artwork.
Preconditions:	-
Postconditions:	1. The actor is shown comparison of specifications and visuals of the artworks he wishes.
Normal Flow:	1. The actor chooses the "compare" button in the main dashboard. 2. search option is shown where the actor searches for the desired artwork. 3. After the selection of an artwork, the specifications of that artwork are shown and the option for searching the other artwork is also shown. 4. Selecting the add another option would allow user to view more paintings side by side at the same time.
Alternative Flows:	Instead of pressing compare from his/her dashboard user presses compare when he is already on the info screen of an artwork Now the add another button appears with the specifications of the current painting already displayed. Resume from normal flow number 3.
Exceptions:	none
Includes:	U3- Browse Artwork.
Priority:	Medium
Frequency of Use:	Medium
Business Rules:	none
Special Requirements:	none
Assumptions:	none

Use Case ID:	U9	
Use Case Name:	check order details (already placed order)	
Created By:		Last Updated By:	Faraz/Ahmed
Date Created:		Date Last Updated:	

Actors:	Buyer, seller, Premium Buyer.
Description:	The system allows the Buyer to check on the current transit details as well as the seller details.
Trigger:	Buyer Pressing "Order details".
Preconditions:	1. The actor is already viewing their orders.
Postconditions:	1. Artwork details are shown to the actor.
Normal Flow:	1. The Actor Presses the "Order details" option. 2. The actor is brought to an info screen with order details.
Alternative Flows:	none
Exceptions:	Error if seller has not updated info
Includes:	U19- View Orders.
Priority:	Medium
Frequency of Use:	Low
Business Rules:	None
Special Requirements:	
Assumptions:	The transaction has been made and delivery is in progress.
Notes and Issues:	-

Use Case ID:	U10		
Use Case Name:	Upgrade Account		
Created By:		Last Updated By:	
Date Created:		Date Last Updated:	

Actors:	Buyer.
Description:	The system allows the actor to upgrade their account.
Trigger:	Buyer Pressing "upgrade account"
Preconditions:	1. The actors account is normal version.
Postconditions:	1. The actors account is upgraded to premium and gets more features
Normal Flow:	1. Buyer Pressing "upgrade account" on dashboard 2. Enters details to purchase the account 3. Account is upgraded to premium version.
Alternative Flows:	The actor tries to access "premium only features" like bidding. Shown prompt to upgrade and link to upgrade to premium.
Exceptions:	Error if user enters wrong information.
Includes:	U3- Browse Artwork. U23- Place Bid
Priority:	Medium
Frequency of Use:	Medium
Business Rules:	none
Special Requirements:	
Assumptions:	none
Notes and Issues:	None as of yet

Use Case ID:	U11		
Use Case Name:	Browse auction details		
Created By:	Ahmed Ateeq	Last Updated By:	Ahmed Ateeq
Date Created:		Date Last Updated:	

Actors:	Premium Buyer.
Description:	System will allow the actor to view the details related to the products that are available for auction.
Trigger:	Clicking on the "Products detail" in the auction's menu.
Preconditions:	1. The actor is already signed in. 2. The actor has a premium account. 3. The actor is already browsing for items that are available for auction.
Post conditions:	Details of the product on auction are displayed.
Normal Flow:	1. The actor wants to view auction details. 2. The actor clicks on view auction details. 3. Details of the specific product on auction are displayed.
Alternative Flows:	-
Exceptions:	-
Includes:	U3- Browse Artwork
Priority:	High
Frequency of Use:	Medium
Business Rules:	Standard Rules
Special Requirements:	NA
Assumptions:	-
Notes and Issues:	-

Use Case ID:	U12		
Use Case Name:	Filter transactions by date/time.		
Created By:	Ahmed Ateeq	Last Updated By:	Ahmed Ateeq
Date Created:		Date Last Updated:	

Actors:	Admin
Description:	System will allow the actor to view transactions filtered according to the date/time with latest being on the top.
Trigger:	Clicking the "Filter transactions by date/time" option.
Preconditions:	Have opened the list of transactions.
Post conditions:	Transactions are sorted according to the time and date with latest being on the top.
Normal Flow:	1. The Admin wants to view transactions filtered according to time. 2. Admin clicks on the option "filter transactions by date/time". 3. Admin Inputs the date and time to use for filtering. 4. Transactions are filtered according to time and are displayed.
Alternative Flows:	-
Exceptions:	No transactions are present.
Includes:	U5 – View transactions
Priority:	High
Frequency of Use:	Low
Business Rules:	Standard Rules
Special Requirements:	NA
Assumptions:	-
Notes and Issues:	-

Use Case ID:	U13		
Use Case Name:	Export transactions as an excel sheet.		
Created By:	Ahmed Ateeq	Last Updated By:	Ahmed Ateeq
Date Created:		Date Last Updated:	

Actors:	Admin
Description:	System will allow the admin to download the transaction details in the form of an excel sheet.
Trigger:	Clicking the "export" option under the transactions tab.
Preconditions:	The admin has opened the transactions page.
Post conditions:	An excel file starts downloading which contains details of all the transactions till date.
Normal Flow:	1. The admin is viewing the transactions and wants to export them as an excel sheet. 2. The Admin clicks on "export as excel" file option. 3. Excel file containing the transactions are downloaded.
Alternative Flows:	-
Exceptions:	No transactions are present.
Includes:	U5- View transactions
Priority:	High
Frequency of Use:	Low
Business Rules:	Standard Rules
Special Requirements:	NA
Assumptions:	-
Notes and Issues:	-

Use Case ID:	U14		
Use Case Name:	Delete Artwork.		
Created By:	Ahmed Ateeq	Last Updated By:	Ahmed Ateeq
Date Created:		Date Last Updated:	

Actors:	Seller.
Description:	The system will allow the actors to delete artwork.
Trigger:	Clicking the "delete artwork" button in the view artwork section.
Preconditions:	Seller has selected one of their own products.
Post conditions:	Artwork has been successfully marked as removed from database.
Normal Flow:	1. The actors want to delete a specific product. 2. The actors search for a specific product. 3. Product will be displayed. 4. The actors will click "delete product" and the product will be removed.
Alternative Flows:	-
Exceptions:	-
Includes:	U3- Browse Artwork.
Priority:	Low
Frequency of Use:	Low
Business Rules:	Standard Rules
Special Requirements:	NA
Assumptions:	-
Notes and Issues:	NA

Use Case ID:	U15		
Use Case Name:	Block Buyer/Seller.		
Created By:	Ahmed Ateeq	Last Updated By:	Ahmed Ateeq
Date Created:		Date Last Updated:	

Actors:	Admin
Description:	The system will allow the actor to block buyers and sellers from the website.
Trigger:	Clicking on the "Block Buyer/Seller" option on users tab.
Preconditions:	The admin wants to delete specific users.
Post conditions:	User shall be deleted.
Normal Flow:	1. The actor wants to block specific users. 2. The actors would search for a specific user ID. 3. The actor clicks on the "block" option. 4. The user is blocked.
Alternative Flows:	-
Exceptions:	-
Includes:	-
Priority:	Low
Frequency of Use:	Low
Business Rules:	Standard Rules
Special Requirements:	-
Assumptions:	User violated the rules of our art gallery. User ID is always correct.
Notes and Issues:	-

Use Case ID:	U16		
Use Case Name:	Backup.		
Created By:	Ahmed Ateeq	Last Updated By:	Ahmed Ateeq
Date Created:		Date Last Updated:	

Actors:	Admin
Description:	The data in the database is backed up in the form of csv files.
Trigger:	Clicking on the "backup" option on the admin dashboard.
Preconditions:	The admin has signed in. The admin is in the admin dashboard.
Post conditions:	CSV files of the current version of each table is stored in backup.
Normal Flow:	1. The actor wants to backup. 2. The actor clicks on backup in the admin dashboard
Alternative Flows:	-
Exceptions:	-
Includes:	U1- Sign In
Priority:	Low
Frequency of Use:	Low
Business Rules:	Standard Rules
Special Requirements:	-
Assumptions:	-
Notes and Issues:	-

Use Case ID:	U17		
Use Case Name:	Update product information.		
Created By:	Ahmed Ateeq	Last Updated By:	Ahmed Ateeq
Date Created:		Date Last Updated:	

Actors:	Seller.
Description:	The system will allow the actor to update the information regarding a specific product.
Trigger:	Clicking on the "Update information" option while viewing of their own products.
Preconditions:	The actor is viewing one of their own products.
Post conditions:	The information of their product is updated.
Normal Flow:	1. The actor wants to update their products information. 2. The actor selects the update information option for a certain product they have uploaded. 3. The actor changes the information of their product. 4. The information is updated.
Alternative Flows:	-
Exceptions:	-
Includes:	U22- View Seller Profile
Priority:	Medium
Frequency of Use:	Medium
Business Rules:	Standard Rules
Special Requirements:	-
Assumptions:	-
Notes and Issues:	-

Use Case ID:	U18		
Use Case Name:	Rate Seller		
Created By:	Saad	Last Updated By:	Ahmed /faraz
Date Created:		Date Last Updated:	

Actors:	Buyer, Premium Buyer.
Description:	Feedback for rating user experience for a particular seller.
Trigger:	Clicking on the "Rate Seller" option.
Preconditions:	Actor has already purchased the seller's product. Actor is in "view orders option"
Post conditions:	The rating for the seller are updated.
Normal Flow:	1. User clicks on the "Rate Seller" button. 2. User is taken to a separate page to fill a ratings form 3. User completes form and presses "Submit".
Alternative Flows:	--
Exceptions:	--
Includes:	U6 Buy Artwork U19 view order
Priority:	Medium
Frequency of Use:	???
Business Rules:	NA
Special Requirements:	NA
Assumptions:	--
Notes and Issues:	???

Use Case ID:	U19		
Use Case Name:	View Orders		
Created By:	Saad	Last Updated By:	Ahmed /Faraz
Date Created:		Date Last Updated:	

Actors:	Buyer, Premium Buyer.
Description:	System allows the Actors to view their past orders
Trigger:	Clicking the "View-Order" button
Preconditions:	1.User already purchased the product 2.Actor is in "view orders" list
Post conditions:	System shows Actors their previously ordered items
Normal Flow:	1. User clicks the "View-Order" button after purchasing. 2. User can view list of past artworks they have ordered
Alternative Flows:	--
Exceptions:	NA
Includes:	U6 Buy Artwork U9 check order details
Priority:	Medium
Frequency of Use:	medium
Business Rules:	NA
Special Requirements:	NA
Assumptions:	--
Notes and Issues:	???

Use Case ID:	U20		
Use Case Name:	Add artwork for bidding		
Created By:	Saad	Last Updated By:	Ahmed /Faraz
Date Created:		Date Last Updated:	

Actors:	Seller.
Description:	Actor adds an artwork in an auction.
Trigger:	Clicking the "Add artwork for bidding" button.
Preconditions:	User is Signed in
Post conditions:	System has added an artwork for bidding.
Normal Flow:	1. User clicks on the "Add artwork for bidding" option in the sellers dashboard. 2. User fills the form for adding artwork containing the artwork and auction details
Alternative Flows:	--
Exceptions:	--
Includes:	Bidding Details
Priority:	High
Frequency of Use:	medium
Business Rules:	NA
Special Requirements:	Only Premium buyers can purchase artwork.
Assumptions:	--
Notes and Issues:	--

Use Case ID:	U21		
Use Case Name:	View Sell History		
Created By:	Saad	Last Updated By:	Ahmed /faraz
Date Created:		Date Last Updated:	

Actors:	Seller
Description:	System shows history of products sold by a seller
Trigger:	Clicking the "View Sell History" button.
Preconditions:	Signed in using a seller account
Post conditions:	System displays all items sold by the seller
Normal Flow:	1. Actor clicks the "View Sell History" option. 2. Actor is taken to a separate page to view their sell history.
Alternative Flows:	--
Exceptions:	Displays (nothing sold) if seller has not sold anything yet
Includes:	???
Priority:	Medium
Frequency of Use:	high
Business Rules:	NA
Special Requirements:	NA
Assumptions:	--
Notes and Issues:	???

Use Case ID:	U22		
Use Case Name:	View Seller Profile		
Created By:	Saad	Last Updated By:	Ahmed /faraz
Date Created:		Date Last Updated:	

Actors:	Seller, buyer, premium buyer
Description:	System shows the actors the profile for the seller.
Trigger:	Clicking the "View Profile" button.
Preconditions:	
Post conditions:	Details of the seller are displayed including name and rating
Normal Flow:	1. seller clicks on the "View Profile" button on seller dashboard 2. seller shown their profile
Alternative Flows:	buyer/premium buyer click on view profile while viewing an artwork
Exceptions:	--
Includes:	--
Priority:	low
Frequency of Use:	medium
Business Rules:	NA
Special Requirements:	--
Assumptions:	--
Notes and Issues:	--

Use Case ID:	U23		
Use Case Name:	Place Bid		
Created By:	Saad	Last Updated By:	Saad
Date Created:		Date Created:	

Actors:	Premium Buyer.
Description:	The system allows the actor to place a bid for a certain artwork.
Trigger:	Clicking the "Place Bid" option.
Preconditions:	Buyer has a premium account.
Post conditions:	Database logs a big from that customer
Normal Flow:	1. User clicks on the "Place Bid" button. 2. User is taken to a separate webpage to place his/her bid for a specific artwork.
Alternative Flows:	--
Exceptions:	NA
Includes:	--
Priority:	High
Frequency of Use:	high
Business Rules:	NA
Special Requirements:	Only Premium Buyers can view this option.
Assumptions:	--
Notes and Issues:	--

Use Case ID:	U24		
Use Case Name:	View Artwork Details		
Created By:	Saad	Last Updated By:	Saad
Date Created:		Date Created:	

Actors:	Premium buyer, buyer, seller, guest.
Description:	The system will allow the actors to view artwork details.
Trigger:	Choosing an artwork while browsing.
Preconditions:	Actor is browsing artwork.
Post conditions:	System displays artwork details.
Normal Flow:	1. Actor is browsing artwork. 2. Actor chooses an artwork. 3. Artwork details displayed.
Alternative Flows:	1. Seller enters view profile. 2. Seller selects one of the artwork presented in his/her profile. 3. Artwork details displayed.
Exceptions:	NA
Includes:	U3-Browse Artwork
Priority:	High
Frequency of Use:	High
Business Rules:	NA
Special Requirements:	--
Assumptions:	--
Notes and Issues:	--

4. External Interface Requirements

4.1 User Interfaces

The main logical component connecting the software is the front-end website. There are no keyboard shortcuts, tooltips or screen layout constraints, however the error messages will be displayed in a user-friendly fashion. The buttons visible on each webpage will be:

- Help
- Home
- Search
- Profile

The user interface is primarily required for the user to utilize the website to access his/her information and perform several primitives by using the back-end database. There are no device drivers and/or separate OS provided. The host OS of the computer used to access the system will be considered. The back-end interface will comprise of a Relational Database Management System (RDMS), which will be formatted automatically as the user makes any changes on the front-end, however the admin has exclusive access.

4.2 Hardware Interfaces

There are as such no hardware interfaces and/or hardware communication protocols required for the software product except basic peripheral input devices like keyboards and/or mouse etc.

4.3 Software Interfaces

The product works on the user level layer as an Application program on the front-end, and is connected to a Relational Database Management System (RDMS) at the back-end. The host OS of the user's computer will be used to handle the client-side processing. An API will be used to meet the requirements of the front-end, and will handle all the communication protocols. The data shared would mostly comprise of user's personal credentials, bidding details, artworks, transactions etc. However, different customers will not be allowed to access transaction details of other users.

4.4 Communications Interfaces

A web browser application is required by the front-end website to function. The standard HTTP will be implemented as a communication standard. There are no encrypted forms of data transfer used in the RDMS. The periodic updating of the RDMS will ensure synchronized data transfer and/or retrieval.

5. Other Nonfunctional Requirements

5.1. Performance Requirements

NFR.5.1.1 **Connectivity**

The system will be connecting Art enthusiasts from all around the globe and so requires itself to be hosted on a web server so it is accessible through a web browser from anywhere.
Furthermore, to allow the client to contact the system their device must have a working internet connection.

NFR.5.1.2. **Responsiveness**

From webfx's research "53% of users abandoning your page if it takes longer than three seconds to load". Therefore, we require a system that can perform swift responses to client requests.
The responsiveness of the web server must high in order to minimize the lag between the input on the client side and the resulting output from the system.
By having a separate server dedicated solely to handling client requests the time for the system to respond can be minimized.
Considering the bottle neck for the response time may appear on the non-system end, the client must have an internet that is able to load the webpage in and under 7 seconds.

NFR.5.1.3. **Efficient storage**

In order to reduce the overall storage space required for the database and make data storage more efficient in terms of removing redundancy data would be kept in normalization state of 2NF or 3NF. This will also make identification of anomalous entries easier to handle.

NFR.5.1.4. **Backup Storage**

The machine the system will be run on must have adequate storage considering the images of all Artworks will be stored on the expanding database (which must store at least 25000 tuples).
Furthermore, the whole database would be backed up regularly so appropriate storage space must also be provided for the backup.

NFR.5.1.5. **Consistency**

To ensure consistent data across all the web pages the tables in the database will be related by joins as frequently as possible. This will not only aid in Normalization but will also help keep data uniform across all forms of access.

NFR.5.1.6 **Feedback from the system**

For each of the actions of the user the system will provide some sort of visual feedback either in the form of displaying a new (chosen) page or asking for confirmation for certain inputs.

5.2 Safety Requirements

NFR5.2.1. **Back up and restoration:**

In case of sudden catastrophic event leading to loss of much or all of the data a backup of the whole database including profiles, transactions are stored separately which may be used to restore the database to a nearly up to date version.

NFR5.2.2. **Blocking suspicious users**:

If any of the users(client) proven of fraudulent conduct then the administrator can block their account for an indefinite time period which will disable them from accessing their account.

NFR5.2.3. **Privacy from other users**:

No details of one customer placing bids will be shown to any of the other bidders

NFR5.2.4. **Preventing unwanted actions:**

The system will ask for confirmations from the users before applying important changes or proceeding with transactions as to avoid accidental purchases and the chance of users accidentally changing their credentials to something they wouldn't like.

5.3 Security Requirements

NFR.5.3.1. **Logins/signups:**

The system Requires the user to sign up in order to be able to purchase any piece of art or to view details of any sellers so that there may be a log of user activity and may be monitored.

NFR5.3.2. **Encryption:**

All data in the database will be stored in encrypted form so that in case of any breach of security the data cannot be deciphered.

NFR5.3.3. **Avoiding external attacks**:

3rd party software to counter external threats to data security to be integrated into the system, like antimalware and anti-DOS.

5.4 Software Quality Attributes

NFR5.4.1. **Usability & Reusability:**

The system can be used as many times as the users want they can simply access it through their web browser at any time since the servers will be running at all times.

NFR5.4.2. **Stability:**

The system will behave consistently producing the same outputs for the same inputs throughout the usage in addition to having consistent data throughout all webpages.

NFR5.4.3. **Accessibility:**

The system allows all users to access data but each to a different degree. The admin having the greatest level of access being able to view all the data in the database and the least being the guest user who can only view artworks without signing in.

NFR5.4.4. **Availability:**

The system will be running at all times and will be available to the clients from anywhere at any time given the user has the means to connect to the webpage to access the system.

NFR5.4.5. **Adaptability:**

Since the system will be in the form of a relational database it will be possible to introduce new tables in the database to allow for newer features in the system.

6. Other Requirements

NFR6.1. **Database requirements:**

Schedule back up and maintenance.

NFR6.2. **Reuse objectives:**

The system can very easily be used as many times as required furthermore since it is based on tables linked by joins it can very easily be expanded to fit into bigger E-marketing software.

Appendix A: Glossary

All the terminology used in the SRS--------page 1.

Appendix B: Analysis Model

The Data flow/interaction diagram--------page 3.

The user centricity diagram-------page 6.

The Use Case diagram-------page 9.

Appendix C: Issue List

1. Front-end and back-end framework yet to be confirmed. (TBD)

2. UI details(Complexity) yet to be finalized.

3. Artwork recommendation model yet to be finalized.