Course Assignment

Only for course Teacher		Needs Improvement	Developing	Sufficient	Above Average	Total Mark
Allocate Mark & Percentage		25%	50%	75%	100%	5
Content Quality	2					
Clarity	1					
Spelling & Grammar	1					
Organization and Formatting	1					
Total obtained mark						
Comments						

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Art Auction System

Introduction

The **Art Auction System** is a digital platform that enables the buying and selling of artwork through a structured online bidding process. It provides a secure, transparent, and user-friendly environment where artists can showcase their creations and buyers can participate in real-time auctions. By integrating technology, the system ensures fair competition, efficient transactions, and accessibility to a global audience.

This platform enhances the traditional auction process by offering key features such as secure payment gateways, bid tracking, automated notifications, and authenticity verification. The system aims to support artists in reaching a wider market while providing buyers with a seamless and trustworthy art purchasing experience.

Objective:

The objectives of the Art Auction System are:

- To develop a seamless and interactive platform for online art auctions.

- To implement a secure and transparent bidding mechanism for fair transactions.

- To empower artists by providing a digital marketplace to exhibit and sell their artwork.

- To enable real-time bidding, automated updates, and instant notifications for users.

- To uphold the authenticity and integrity of art transactions through verification processes.

Key features:

i. User Registration & Authentication
ii. Artist Profile Management
iii. Artwork Listing
iv. Auction Creation
v. Real-time Bidding
vi. Bid History Tracking
vii. Auction Timer
viii. Notifications & Alerts
ix. Secure Payment Gateway Integration
x. User Feedback & Ratings
xi. Search & Filter Options
xii. Admin Dashboard
xiii. Authentication & Fraud Prevention
xiv. Artwork Preview
xv. Multiple Payment Methods
xvi. Auction Analytics & Reports
xvii. Customer Support

Scenario writing:

i. User Registration & Authentication

Scenario: A new user registers on the platform by creating an account and securely logs in to start browsing and bidding.

ii. Artist Profile Management

Scenario: An artist updates their profile with a new biography, artwork, and contact details to enhance their visibility on the platform.

iii. Artwork Listing

Scenario: An artist uploads an artwork with a title, description, and starting bid, making it available for bidding on the platform.

iv. Auction Creation

Scenario: An artist sets up an auction for their artwork by defining the start/end time, reserve price, and auction conditions.

v. Real-time Bidding

Scenario: A bidder places a bid, and the auction page is updated instantly to reflect their new bid in real-time.

vi. Bid History Tracking

Scenario: A bidder reviews their past bids and auction outcomes in the "Bid History" section of their profile.

vii. Auction Timer

Scenario: A countdown timer appears on the auction page to show the remaining time until the auction closes.

viii. Notifications & Alerts

Scenario: A user receives a notification when their bid is outbid or when an auction they are watching is about to end.

ix. Secure Payment Gateway Integration

Scenario: A winning bidder is redirected to a secure payment gateway to complete their transaction for the artwork.

x. User Feedback & Ratings

Scenario: After receiving artwork, a buyer leaves feedback and a rating for the artist based on the quality and transaction experience.

xi. Search & Filter Options

Scenario: A buyer uses search filters to find artwork by artist, category, and price range in seconds.

xii. Admin Dashboard

Scenario: The admin accesses the dashboard to monitor ongoing auctions, user activity, and manage transactions.

xiii. Authentication & Fraud Prevention

Scenario: The system flags suspicious activity, such as multiple failed login attempts, and alerts the admin for investigation.

xiv. Artwork Preview

Scenario: A potential buyer uses the zoom feature to preview a high-resolution image of the artwork before placing a bid.

xv. Multiple Payment Methods

Scenario: A winning bidder chooses from various payment options, such as credit card or PayPal, to complete their purchase.

xvi. Auction Analytics & Reports

Scenario: The admin generates a report to review auction performance, user engagement, and overall sales revenue.

xvii. Customer Support

Scenario: A user contacts customer support for assistance with a payment issue and receives a prompt resolution.

Stakeholders and Actor:

Stakeholders:

  I.   Project Owner/Client
 II.   End Users (Buyers and Sellers)
III.   Admin/Platform Administrator
 IV.   Payment Gateway Providers
  V.   Customer Support Team
 VI.   Marketing and Sales Team

Actors:

1. Buyer
2. Seller (Artist/Institution)
3. Admin (System Administrator)
4. Auction System
5. Payment Processo

User Profile

1. Project Owner/Client

Category	Notes on Characteristic	Requirement Implied
Types of user	Business Stakeholder, Project Sponsor	Verification, Access Control
Age range	30+	N/A
Frequency of use	Sporadic (Project Milestones, Reviews)	Reporting, Communication Tools
Mandatory	Yes (For initial stages)	N/A
Computer experience	Moderate	Reporting Dashboards, Project Management Tools
Education	Business/Management Background Preferred	N/A
Goals	Successful Project Delivery	Project Tracking, Budget Managemen
Language skills	English	N/A

Number of users	Small (1-2)	N/A
Training	Project Overview, Reporting Tools	Training Materials, Project Documentation
Other system used	Project Management Software	Integration Capabilities
Ways of working	Reviewing Progress, Making Decisions	Reporting and Analytics, Communication Channels

2. End Users (Buyers)

Category	Notes on Characteristic	Requirement Implied
Types of user	Art Enthusiast, Collector, Investor	Verification
Age range	18+	Age Verification
Frequency of use	Varies (Weekly, Monthly, Sporadic)	Scalability, Reliability
Mandatory	No	N/A
Computer experience	Moderate to High	Usability, Accessibility

Education	Varies	N/A
Goals	Discover and purchase art	Search, Filtering, Secure Payment Processing
Language skills	English (Potentially Multilingual	Internationalization Consideration
Number of users	Potentially Large Number	Scalability, Performance
Training	Basic platform navigation	User-Friendly Interface, Tutorials
Other system used	Payment gateways, Shipping services	Integration Capabilities
Ways of working	Browsing, Bidding, Purchasing	Personalized Recommendations, Order Tracking

3. End Users (seller)

Category	Notes on Characteristic	Requirement Implied
Types of user	Artist, Gallery, Collector	Verification, Listing Management

Age range	18+	Age Verification
Frequency of use	Varies (Weekly, Monthly)	Reliability, Data Management
Mandatory	No	N/A
Computer experience	Moderate	Ease of Use, Data Input Tools
Education	Varies	N/A
Goals	Sell artwork, Manage listing	Listing Creation, Auction Management, Payment Processing
Language skills	English	Internationalization Considerations
Number of users	Moderate Number	Scalability
Training	Listing process, Auction management	Clear Documentation, Support Resources
Other system used	Payment gateways, Shipping services	Integration Capabilities

Ways of working	Listing, Managing auctions	Reporting and Analytics

4. Admin/Platform Administrator

Category	Notes on Characteristic	Requirement Implied
Types of user	Platform Manager, System Administrator	Verification, Access Control
Age range	25+	N/A
Frequency of use	Daily	Reliability, Security, Monitoring Tools
Mandatory	yes	N/A
Computer experience	Expert	System Administration Tools, Database Management
Education	Bachelor's Degree in CS/IT Preferred	N/A
Goals	Maintain system, Manage users,	Compliance, Scalability,

	Ensure smooth operation	Security, Performance
Language skills	English	N/A
Number of users	Small Number (5-10)	N/A
Training	System administration, Security protocols	Comprehensive Training, Documentation
Other system used	Databases, Monitoring tools	Integration Capabilities
Ways of working	Proactive monitoring, Problem solving	Alerting Systems, Reporting Dashboards

5. Payment Gateway Providers

Category	Notes on Characteristic	Requirement Implied
Types of user	Third-Party Service, Financial Institution	API Integration, Security, Reliability
Age range	N/A	N/A

Frequency of use	Continuous (Real-time Transaction Processing)	High Availability, Transaction Logging
Mandatory	Yes	N/A
Computer experience	Expert	API Documentation, Secure Data Transmission Protocols
Education	Varies (CS, Finance, Security)	N/A
Goals	Secure and Reliable Transaction Processing	API Performance, Security Audits
Language skills	N/A	N/A
Number of users	N/A	N/A
Training	API Integration, Security Protocols	API Documentation, Security Best Practices

Other system used	Financial Systems, Security Systems	Secure API Integration
Ways of working	Transaction Processing, Security Monitoring	Real-time Monitoring, Alerting

6. Customer Support Team

Category	Notes on Characteristic	Requirement Implied
Types of user	Support Agent	Verification
Age range	20+	N/A
Frequency of use	Daily	Reliability, Support Ticketing System
Mandatory	Yes	N/A
Computer experience	Moderate	CRM, Helpdesk Software Proficiency
Education	High School Diploma/Equivalent	N/A
Goals	Resolve user issues, Provide support	Helpdesk Functionality

Language skills	English	Multilingual Support Capabilities
Number of users	Moderate Number	Scalability of Support System
Training	Product knowledge, Customer service	Training Materials, Knowledge Base Access
Other system used	CRM, Ticketing systems	Integration with Platform User Data
Ways of working	Responding to inquiries, Troubleshooting	Support Ticketing System, Performance Monitoring

Marketing and Sales Team

Category	Notes on Characteristic	Requirement Implied
Types of user	Marketing Specialist, Sales Rep	Verification
Age range	22+	N/A

Frequency of use	Daily/Weekly	Marketing Automation Tools, Analytics Dashboards
Mandatory	No	N/A
Computer experience	Moderate to high	Digital Marketing Platform Proficiency
Education	Bachelor's in Marketing/Business	N/A
Goals	Promote platform, Drive sales	Campaign Management, Analytics Tracking
Language skills	English	Multilingual Marketing Materials
Number of users	Small to Moderate Number	N/A
Training	Marketing strategy, Product knowledge	Training on Platform Features and Target Audience
Other system used	Marketing automation, Social media management	Integration platform
Ways of working	Campaign creation, Analysis	Reporting and Analytics

Feasibility Study

Technical Feasibility:

- **Technology Availability:** Are the necessary technologies readily available and mature enough for the project? (e.g., programming languages, database systems, cloud hosting, payment gateways).
- **Technical Expertise:** Do you have the required technical skills within your team or can you acquire them? Consider development, testing, deployment, and maintenance skills.
- **System Scalability:** Can the system handle a growing number of users, transactions, and art listings? Consider database scalability, server capacity, and network infrastructure.
- **Security:** Can the system be designed and implemented to ensure adequate security for user data, transactions, and intellectual property? Consider security measures against hacking, fraud, and data breaches.

Economic Feasibility:

- **Cost Estimation**: Estimate the costs of development (hardware, software, personnel), marketing, operations (hosting, maintenance, customer support), and legal/compliance.
- **Revenue Projections:** Project potential revenue streams (e.g., commission fees on sales, listing fees, premium

memberships). Consider market demand, pricing strategies, and competition.

- **Profitability Analysis**: Analyze the potential profitability of the project by comparing projected revenues and costs. Calculate metrics like Net Present Value (NPV), Internal Rate of Return (IRR), and payback period.
- **Funding Sources:** Identify potential funding sources (e.g., personal investment, venture capital, loans).
- **Return on Investment (ROI):** Estimate the potential return on investment for stakeholders.
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Legal Feasibility:

- **Data Privacy:** Ensure compliance with data privacy regulations (e.g., GDPR, CCPA) regarding the collection, storage, and use of user data.
- **Intellectual Property**: Address copyright and trademark issues related to the artwork being sold on the platform. Implement mechanisms to prevent copyright infringement.
- **Online Auction Regulations**: Comply with laws and regulations governing online auctions in the relevant jurisdictions.
- **Payment Processing Regulations**: Adhere to regulations related to online payment processing and financial transactions.
- **Art Sales Regulations:** Be aware of any specific regulations related to the sale of art, including authenticity verification and export restrictions.

    5. Operational Feasibility:

- **Team Availability:** Do you have the necessary personnel to manage and operate the platform (e.g., administrators, customer support, marketing team)?

Schedule Feasibility:

- **Project Timeline:** Develop a realistic project timeline with key milestones and deadlines.
- **Development Schedule**: Estimate the time required for each phase of development (design, coding, testing, deployment).
- **Market Entry Timing**: Consider the timing of the platform launch in relation to market trends and competition.

Market Feasibility:

- **Market Analysis**: Research the target market for art auctions, including the size of the market, demographics, and trends.
- **Competitive Analysis**: Analyze existing online art auction platforms and identify their strengths and weaknesses. Determine how your platform will differentiate itself.
- **Target Audience**: Define the target audience for your platform (e.g., art collectors, investors, artists, galleries).
- **Marketing Strategy:** Develop a marketing strategy to reach your target audience and promote your platform.

Software Requirements Specification(SRS)

1. Introduction

Purpose

Scope

Intended Audience

- ## 2. Overall Description

Product Perspective

Product Functions:

- User registration and login (Buyers, Sellers, Admins)
- Artwork listing (Sellers)
- Auction creation and management (Admins/Sellers)
- Bidding (Buyers)
- Payment processing (Buyers/Sellers)
- User profile management
- Search and filtering of artwork
- Reporting and analytics (Admins)

3. Specific Requirements

Functional Requirements:

- User Management:

- Registration
- Login
- Profile Management
- User Roles

- Artwork Listing:
  - Sellers can list artwork with details (title, artist, description, images, price, category).
  - Admins can review and approve listings.

- Auction Management:
  - Sellers/Admins can create auctions with start/end times and reserve prices.
  - The system shall automatically manage the auction process.

- Bidding:
  - Buyers can place bids on artwork.
  - The system shall track the highest bid and bidding history.

- Payment Processing:
  - The system shall integrate with a secure payment gateway.
  - Buyers can make payments for won auctions.
  - Sellers can receive payments.

- Search and Filtering:
  - Users can search for artwork by keywords, artist, category, etc.
  - Users can filter search results by various criteria.
- Reporting and Analytics:
  - Admins can generate reports on auction activity, sales, and user behavior.

Non-Functional Requirements:

- Performance: The system shall respond to user requests within a reasonable time (e.g., under 2 seconds).
- Security: The system shall protect user data and financial transactions.
- Reliability: The system shall be available and operational with minimal downtime.
- Usability: The system shall be easy to use and navigate.
- Scalability: The system shall be able to handle a large number of users and transactions.
- Maintainability: The system shall be easy to maintain and update.
- Portability: The system should be accessible from different devices and browsers.

Software Requirements Specification(SRS)

ID	Requirement	Descripttion	Stakeholders
FR1	User Registration & Authentication	User must registration and authenticate to access the system	Artists,Buyers,Admin
FR2	Artist Profile Management	Artists can create and manage their profiles	Artists,Admin
FR3	Artwork Listing	Artists can upload and manage artwork details	Artists,Buyers,Admin
FR4	Auction Creation	Artists or admin created auction for listed artwork	Artists,Admin
FR5	Real-time Bidding	User can place bidsin the real time during an auction	Buyers,Admin
FR6	Bid History Tracking	User can view their bid history and past auction	Buyers,Admin
FR7	Auction Timer	A countdown timer display the remaining auction time	Buyers,Admin,Artists
FR8	Notifications & Alerts	User receive notification about	Artists,Buyer,Admin

		bids,auction,and system updates	
FR9	Secure Payment Gateway Integration	Payment are securely processed though integrate getway	Buyers,Admin
FR10	User Feedback & Ratings	User can rate and review artists and artwork	Buyers,Artists,Admin
FR11	Search & Filter Options	User can search and filter artwork	Buyers,Admin
FR12	Admin Dashboard	Admin can manage auction,user and transactions	Admin
FR13	Authentication & Fraud Prevention	System ensure security through verification and detection	Admin,Buyers,Artists
FR14	Artwork Preview	Users can preview artwork details before planning bids	Buyers,Artists
FR15	Multiple Payment Methods	User can pay using credit card,paypal and,methods	Buyers,Admin

FR16	Auction Analytics & Reports	Generate reports on auction performance and sales	Admin,Artists
FR17	Customer Support	User can support contact for auction releted issue	Buyers,Artists,Admin