COMSATS University Islamabad,
Abbottabad Campus

Project Proposal

(SCOPE DOCUMENT)

for

<Artistry-hub: A Digital Marketplace for Artists and Buyers>

Version 1.0

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SCOPE DOCUMENT REVSION HISTORY

No.	Comment	Action

Supervisor Signature

Date:

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Project Category:(Select all the major domains of proposed project**)**

○ **A-**Desktop Application/Information System ● **B-**Web Application/Web Application based Information System ○**C-** Problem Solving and Artificial Intelligence ○ **D-**Simulation and Modeling ○ **E-** Smartphone Application ○ **F-** Smartphone Game ○ **G-** Networks ○ **H-** Image Processing○Other (specify category) _____

Abstract

A digital marketplace called Artistry Hub was created to link customers and artists and make it easier to acquire and sell digital art. The platform tackles the difficulties customers encounter in finding one-of-a-kind objects and artists encounter in exhibiting their work. Artistry Hub wants to establish a safe and interesting space for art lovers by utilizing AI technology for tailored suggestions and putting Metadata Analysis into practice for authenticity confirmation. The goals of this project are to empower artists, improve user experience, and create a thriving digital art community.

Introduction

Outlining the creation of Artistry Hub, a specialized online marketplace for artists and art consumers, is the aim of this project proposal. The art world has changed in recent years due to the rise of digital art, yet many artists still have difficulty finding appropriate venues to display and market their work. Both artists and buyers become frustrated because traditional markets frequently lack the specialized capabilities required for digital art transactions. By offering a user-friendly platform that increases artists' visibility and streamlines the buying process for customers, Artistry Hub seeks to close this gap. By using cutting-edge AI technology, the platform will provide tailored art suggestions and put in place systems to confirm the legitimacy of digital artworks, eventually creating a community that is encouraging to artists and art lovers.

Problem Statement

It can be very difficult for many digital artists to locate platforms that will effectively display and market their work. It is challenging for unique artworks to be found in existing marketplaces since they frequently lack visibility, specific features, and sufficient screening mechanisms for buyers. Furthermore, the market's integrity is threatened by the increase of digital art forgeries, which breeds mistrust between buyers and sellers. Existing solutions create a fragmented and unsafe economy by either failing to guarantee the authenticity of artworks or failing to give artists the tools they need. The creation of Artistry Hub will provide a targeted solution that strengthens the buying experience, empowers artists, and incorporates methods for authenticity verification. I hope to gain knowledge regarding AI integration, marketplace design, and successful community involvement tactics from this project.

Problem Solution for Proposed System

Artistry Hub offers a specialized platform for artists to exhibit their work and for consumers to find one-of-a-kind digital art, hence addressing the issues mentioned in the problem description. Artist profiles on the site will make managing portfolios and sales simple. Customers will take advantage of a user-friendly interface with sophisticated search and filtering capabilities, tailored suggestions according to their tastes, and safe payment processing. Additionally, the incorporation of Metadata Analysis will assist in confirming the legitimacy of digital artworks, giving customers assurance regarding their purchases. ArtistryHub will establish a helpful atmosphere for both artists and consumers by encouraging community interaction through forums and reviews, ultimately improving the experience for both.

Related System Analysis/Literature Review

1. **Etsy:** Although Etsy is a well-known marketplace for a range of digital and handcrafted goods, it does not offer features designed especially for digital artists, such as sophisticated filtering for different types of digital art and authenticity checks.
2. **Saatchi Art**: Saatchi Art emphasizes original artworks but lacks strong tools for digital artists and systems to guarantee the legitimacy of digital works, which could cause problems with buyer trust.
3. **ArtStation**: This platform acts as a portfolio for artists, but it is devoid of integrated marketplace functionalities that enable safe transactions and tailored suggestions for purchasers.

RELATED SYSTEM ANALYSIS WITH PROPOSED PROJECT SOLUTION

Application Name	**Weakness**	**Proposed Project Solution**
Etsy	Limited features for digital art	Dedicated platform tailored for digital artists with advanced filtering options
Saatchi Art	No authenticity verification	Implement Metadata Analysis for verifying digital artworks
ArtStation	Lacks integrated marketplace	Seamless transaction processing and personalized recommendations

Advantages/Benefits of Proposed System

1. **Artist Empowerment:** Gives artists a specific area to display their creations and conveniently handle sales.
2. **User-Friendly Interface:** Enhances art discovery by providing customers with an easy-to-use browsing experience.
3. **Personalized Recommendations:** This feature enhances the purchasing experience by using AI to recommend artwork based on customer preferences.
4. **Authenticity Verification:** Promotes confidence by using metadata analysis to guarantee the integrity of digital artworks.
5. **Community Engagement:** Fosters a thriving art community by promoting communication between consumers and artists via forums and reviews.

Scope

The Artistry Hub project is designed to offer a seamless, secure, and artist-centric experience. To achieve this, we will implement a robust user authentication system to ensure safe and secure login for all users. Artists will have the ability to create detailed profiles to showcase their portfolios, complete with bios and links to their social media, creating a rich, interactive space for self-expression and audience engagement. We will build an intuitive artwork upload feature, enabling artists to easily add descriptions, tags, and pricing, making their work more discoverable and appealing to potential buyers. Our platform will harness AI-driven recommendation algorithms to provide buyers with tailored suggestions based on their browsing behavior, creating a personalized shopping experience. Additionally, secure payment processing and comprehensive transaction history management will be established to provide users with a trustworthy, seamless checkout process. To foster community and engagement, we will also introduce a forum where artists and buyers can interact, discuss artworks, and share feedback, cultivating a thriving digital art community.

In keeping with our focus, we will not support non-digital or physical artworks, concentrating solely on the digital art market. This means we will avoid handling physical goods or traditional art forms, allowing us to deliver a uniquely curated experience specifically tailored to the needs of digital artists and collectors.

Modules

Module 1:User Interface Development

Design and develop a user-friendly web interface using libraries like React and frameworks like bootstrap. Showcases featured art, easy navigation, and quick search options.Visible Sign-Up/Login buttons and art category previews.

Module 2: User Authentication

This module will handle secure registration and login processes for both artists and buyers, ensuring the protection of user data and enabling profile management.

Module 3: Artist Profiles

This module allows artists to create and customize their profiles, showcasing their portfolios, biographies, and links to social media. Artists will have the ability to manage their artworks, including uploading new pieces, editing existing entries, and tracking sales and interactions with buyers.

Module 4: Artwork Upload

This module provides an intuitive interface for artists to upload their digital artworks. It will include features for adding descriptions, setting prices, and tagging artworks with relevant categories and styles. This ensures that artworks are easily discoverable by buyers.

Module 5: Marketplace Search

The Marketplace Search module will provide advanced search and filtering options, allowing buyers to discover artworks based on categories, styles, price ranges, and other relevant criteria. This module will enhance the user experience by making the discovery of unique pieces seamless and efficient.

Module 6: Personalized Art Recommendations

Using AI algorithms, this module will analyze buyer behavior and preferences to offer tailored recommendations. By considering factors such as past purchases and browsing history, the system will help buyers find artworks that resonate with their tastes.

Module 7: Secure Payment Processing

This module will integrate with a reliable payment gateway, such as Stripe, to ensure secure transactions. It will handle payment processing, refunds, and transaction history, providing a safe environment for both artists and buyers.

Module 8: Artwork Authenticity and Metadata Analysis

This module will implement features for verifying the authenticity of digital artworks through Metadata Analysis. It will extract and analyze metadata from uploaded artworks, checking for consistency and flagging suspicious activity. This ensures that buyers can trust the authenticity of their purchases.

System Limitations/Constraints

1. **Digital Art Focus**: The platform will exclusively focus on digital artworks, limiting its applicability to traditional art forms.
2. **Dependency on Metadata**: The effectiveness of the authenticity verification system relies heavily on the availability and integrity of metadata, which may not always be present in all digital artworks.
3. **Market Competition**: The digital art marketplace is highly competitive, and attracting both artists and buyers may require significant marketing efforts.
4. **Technical Challenges**: Implementing AI-driven recommendations and metadata analysis may present technical challenges that require specialized expertise.

Software Process Methodology

The development of Artistry Hub will follow the Agile methodology. Iterative development is made possible by this method, which lets the team take input into account and make changes as the project progresses. Agile was selected because of its adaptability and emphasis on teamwork, which complement the project's objective of developing a platform that is user-centered.

Tools and Technologies

Tools and Technologies	Tools	Version	Rationale
Frontend Development	ReactJS	Latest	Dynamic user interface
Backend Development	Node.js and Express	Latest	Server-side logic and API
Database	MySQL	Latest	Structured data management
	MongoDB	Latest	Unstructured data storage
Payment Gateway	Stripe	Latest	Secure transactions
AI Integration	Various algorithms	N/A	Personalized recommendations
UI/UX Design	Figma	Latest	Interface design
Metadata Analysis Tools	EXIFTool, Exif.js	Latest	Metadata extraction and analysis

Project Stakeholders and Roles

Project Sponsor	COMSATS University, Islamabad
Project Supervisor	Mr. Ahsan Riaz
Committee Members	IIbtisam Gul Khan Humaira Jabeen Mazhar Bukhari Ahmed Mustafa
Students	Qasim Jameel Khan Zaroon Tahir Neelam Khan

Team Members Individual Tasks/Work Division

Student Name	**Student Registration Number**	**Responsibility/Modules**
Neelam Khan	[FA21-BSE-175]	Module 1 (User Interface), Module 7(Payment Processing)
Zaroon Tahir	[FA21-BSE-168]	Module 3 (Artist Profiles), Module 6 (Personalized Recommendations)
Qasim Jameel Khan	[FA21-BSE-130]	Module 4 (Artwork Management), Module 5 (Marketplace Search), Module 8 (Metadata Analysis)

Data Gathering Approach

We will use a mix of focus groups, questionnaires, and interviews to collect the data and specifications needed for Artistry Hub. Insights into the requirements and preferences of artists and prospective customers will be obtained through interviews. To get quantitative information on user expectations and desired features, surveys will be sent to a larger audience. Furthermore, in-depth talks regarding user experiences and difficulties in current marketplaces will be facilitated by focus group discussions.

Concepts

Concept 1: User-Centered Design

Developing a product that satisfies the requirements and preferences of its consumers is the main goal of user-centered design, or UCD. We will give user feedback top priority during the design and implementation stages of Artistry Hub's development to make sure the platform is user-friendly and interesting for both artists and consumers.

Concept 2: Artificial Intelligence

By offering tailored art recommendations, artificial intelligence (AI) technology will improve the user experience. AI algorithms will recommend artworks that suit personal tastes by examining user behavior and preferences, which will speed up and enhance the discovery process.

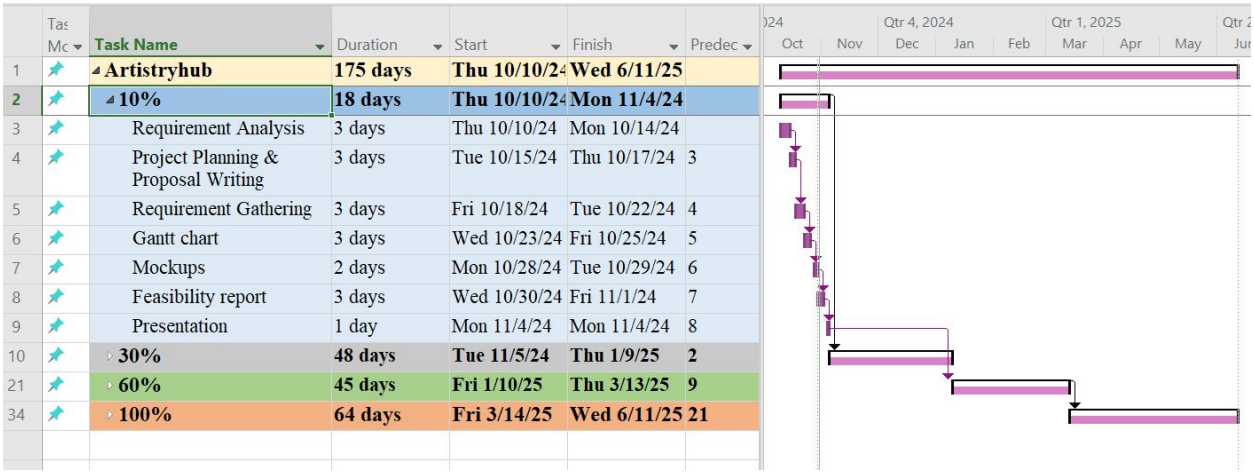
Concept 3: Metadata Analysis

Examining the embedded data in digital files to confirm their legitimacy is known as metadata analysis. This idea will be essential to Artistry Hub's efforts to guarantee that digital artworks are authentic and untouched, which will increase buyer and artist trust.

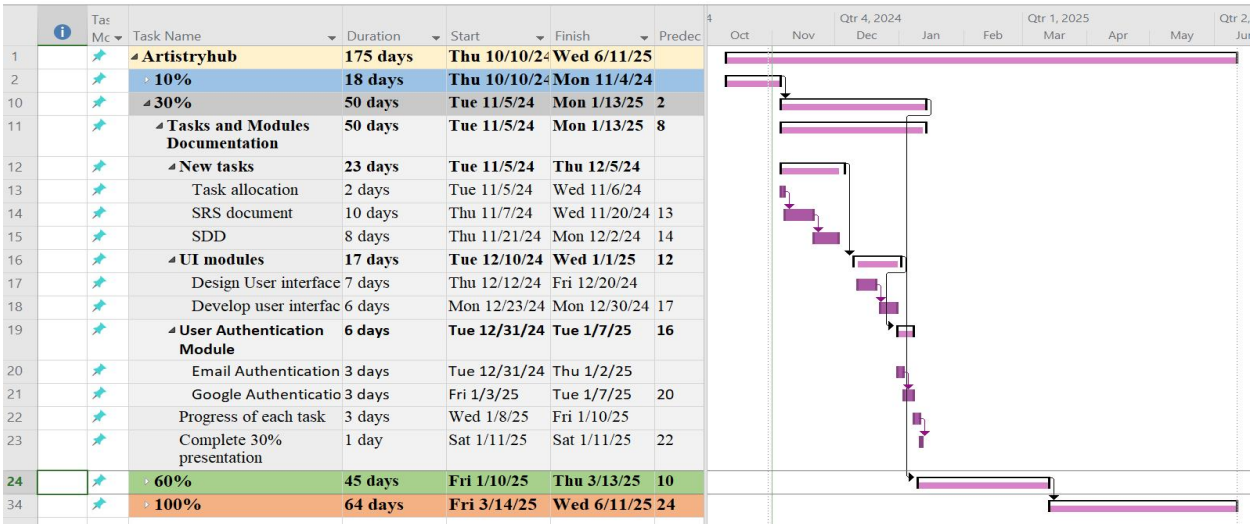
Concept 4: Community Engagement

Creating a feeling of community among users is essential to Artistry Hub's success. We will promote communication and cooperation between artists and customers by putting in place forums and review systems, fostering a positive atmosphere for exchanging thoughts and experiences.

Gantt chart



	Task Mc	Task Name	Duration	Start	Finish	Predec
1		**Artistryhub**	**175 days**	**Thu 10/10/24**	**Wed 6/11/25**	
2		**10%**	**18 days**	**Thu 10/10/24**	**Mon 11/4/24**	
3		Requirement Analysis	3 days	Thu 10/10/24	Mon 10/14/24	
4		Project Planning & Proposal Writing	3 days	Tue 10/15/24	Thu 10/17/24	3
5		Requirement Gathering	3 days	Fri 10/18/24	Tue 10/22/24	4
6		Gantt chart	3 days	Wed 10/23/24	Fri 10/25/24	5
7		Mockups	2 days	Mon 10/28/24	Tue 10/29/24	6
8		Feasibility report	3 days	Wed 10/30/24	Fri 11/1/24	7
9		Presentation	1 day	Mon 11/4/24	Mon 11/4/24	8
10		**30%**	**48 days**	**Tue 11/5/24**	**Thu 1/9/25**	**2**
21		**60%**	**45 days**	**Fri 1/10/25**	**Thu 3/13/25**	**9**
34		**100%**	**64 days**	**Fri 3/14/25**	**Wed 6/11/25**	**21**



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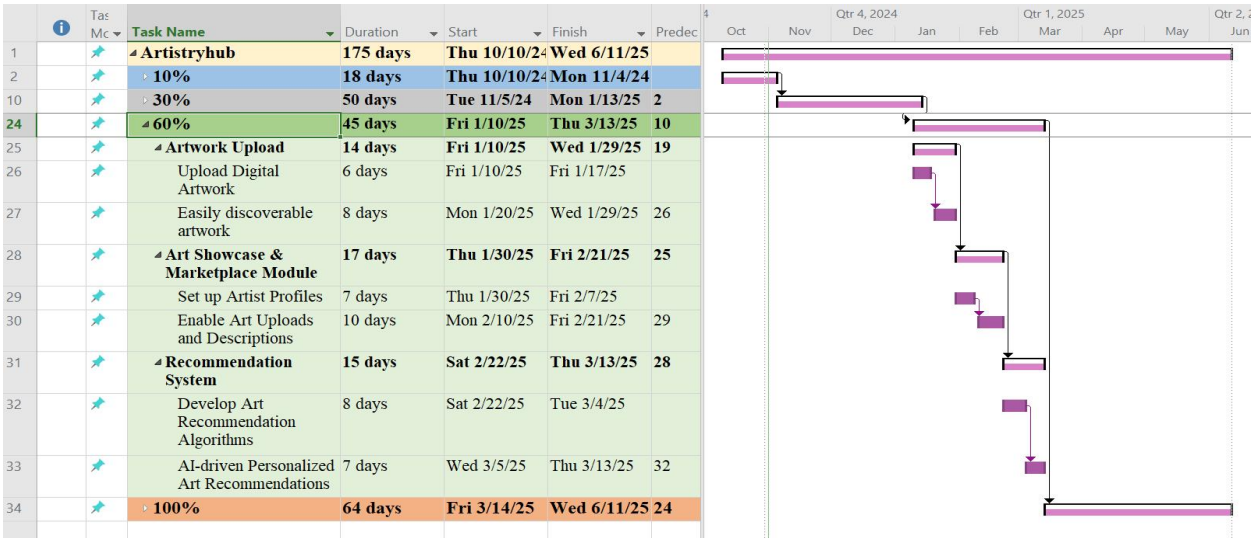
10		**30%**	**50 days**	**Tue 11/5/24**	**Mon 1/13/25**	**2**
11		**Tasks and Modules Documentation**	**50 days**	**Tue 11/5/24**	**Mon 1/13/25**	**8**
12		**New tasks**	**23 days**	**Tue 11/5/24**	**Thu 12/5/24**	
13		Task allocation	2 days	Tue 11/5/24	Wed 11/6/24	
14		SRS document	10 days	Thu 11/7/24	Wed 11/20/24	13
15		SDD	8 days	Thu 11/21/24	Mon 12/2/24	14
16		**UI modules**	**17 days**	**Tue 12/10/24**	**Wed 1/1/25**	**12**
17		Design User interface	7 days	Thu 12/12/24	Fri 12/20/24	
18		Develop user interfac	6 days	Mon 12/23/24	Mon 12/30/24	17
19		**User Authentication Module**	**6 days**	**Tue 12/31/24**	**Tue 1/7/25**	**16**
20		Email Authentication	3 days	Tue 12/31/24	Thu 1/2/25	
21		Google Authenticatio	3 days	Fri 1/3/25	Tue 1/7/25	20
22		Progress of each task	3 days	Wed 1/8/25	Fri 1/10/25	
23		Complete 30% presentation	1 day	Sat 1/11/25	Sat 1/11/25	22
24		**60%**	**45 days**	**Fri 1/10/25**	**Thu 3/13/25**	**10**
34		**100%**	**64 days**	**Fri 3/14/25**	**Wed 6/11/25**	**24**



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10		**30%**	**50 days**	**Tue 11/5/24**	**Mon 1/13/25**	**2**
24		**60%**	**45 days**	**Fri 1/10/25**	**Thu 3/13/25**	**10**
25		**Artwork Upload**	**14 days**	**Fri 1/10/25**	**Wed 1/29/25**	**19**
26		Upload Digital Artwork	6 days	Fri 1/10/25	Fri 1/17/25	
27		Easily discoverable artwork	8 days	Mon 1/20/25	Wed 1/29/25	26
28		**Art Showcase & Marketplace Module**	**17 days**	**Thu 1/30/25**	**Fri 2/21/25**	**25**
29		Set up Artist Profiles	7 days	Thu 1/30/25	Fri 2/7/25	
30		Enable Art Uploads and Descriptions	10 days	Mon 2/10/25	Fri 2/21/25	29
31		**Recommendation System**	**15 days**	**Sat 2/22/25**	**Thu 3/13/25**	**28**
32		Develop Art Recommendation Algorithms	8 days	Sat 2/22/25	Tue 3/4/25	
33		AI-driven Personalized Art Recommendations	7 days	Wed 3/5/25	Thu 3/13/25	32
34		**100%**	**64 days**	**Fri 3/14/25**	**Wed 6/11/25**	**24**

	Task Mc	Task Name	Duration	Start	Finish	Predec
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2		**10%**	**18 days**	**Thu 10/10/24**	**Mon 11/4/24**	
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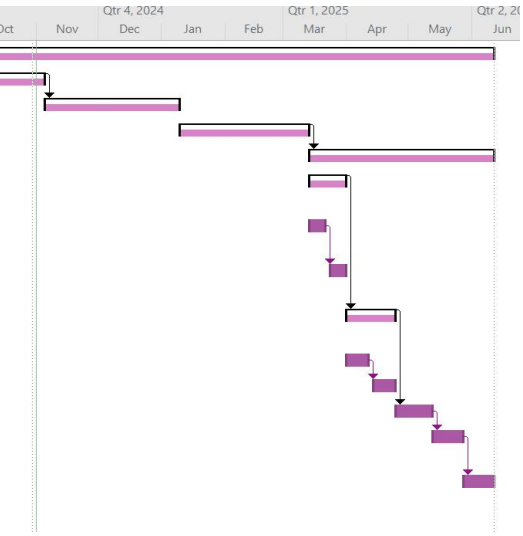
21		**60%**	**45 days**	**Fri 1/10/25**	**Thu 3/13/25**	**9**
34		**100%**	**64 days**	**Fri 3/14/25**	**Wed 6/11/25**	**21**
35		**Fake Artwork Detection Module**	**12 days**	**Fri 3/14/25**	**Mon 3/31/25**	
36		Metadata Analysis Preparation	6 days	Fri 3/14/25	Fri 3/21/25	
37		Develop Metadata Analysis Algorithm	6 days	Mon 3/24/25	Mon 3/31/25	36
38		**Secure Payment Processing**	**18 days**	**Tue 4/1/25**	**Thu 4/24/25**	**35**
39		Implement Stripe API	9 days	Tue 4/1/25	Fri 4/11/25	
40		Testing Payment Flow	9 days	Mon 4/14/25	Thu 4/24/25	39
41		Testing and Debugging	12 days	Fri 4/25/25	Mon 5/12/25	38
42		Modifications and Updates	11 days	Tue 5/13/25	Tue 5/27/25	41
43		Finalize Project Documentation	11 days	Wed 5/28/25	Wed 6/11/25	42



Mockups

Fig1:User Authentication

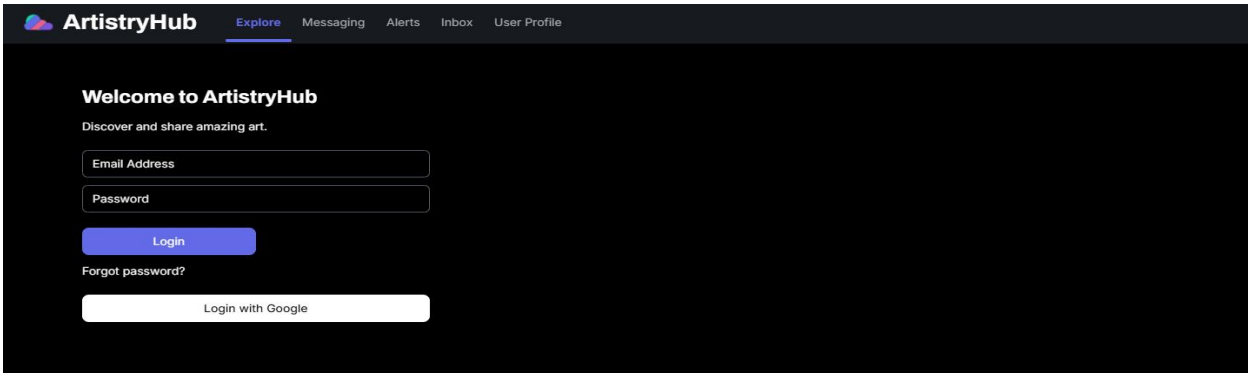


Fig2:Artist Profile

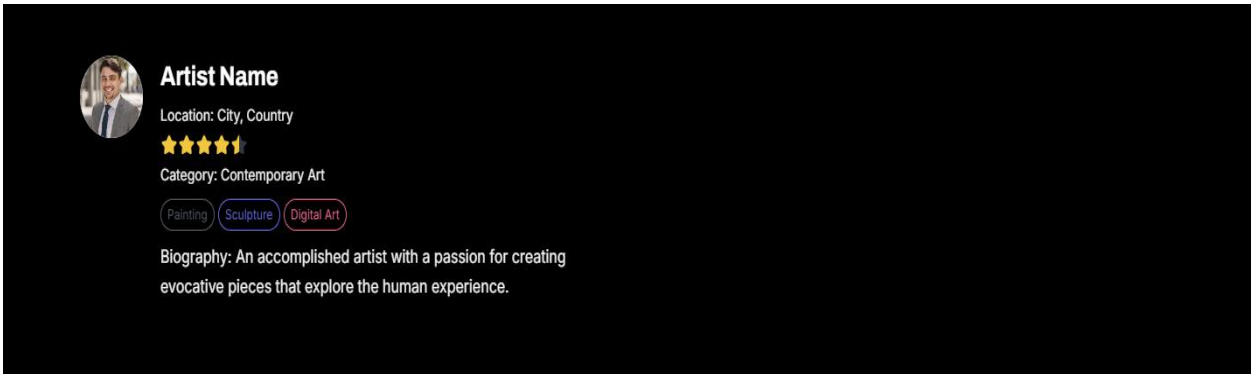


Fig3:Artwork Upload

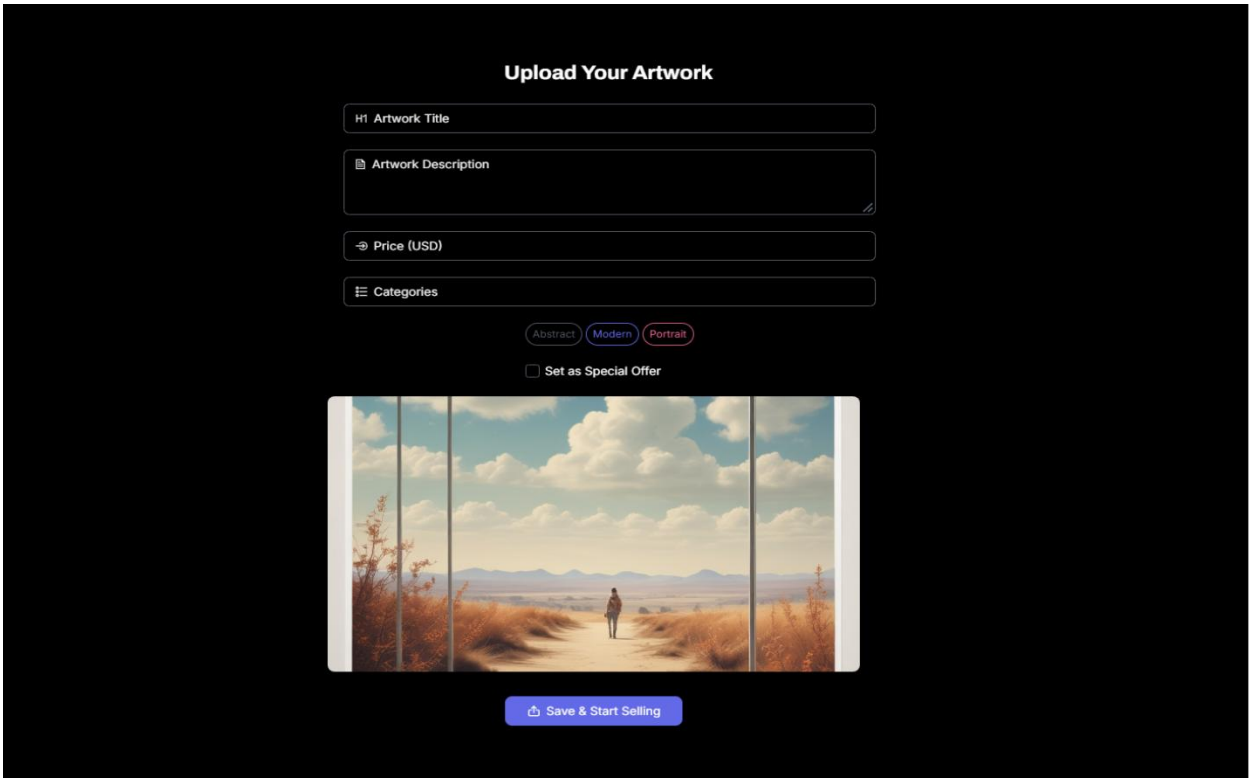
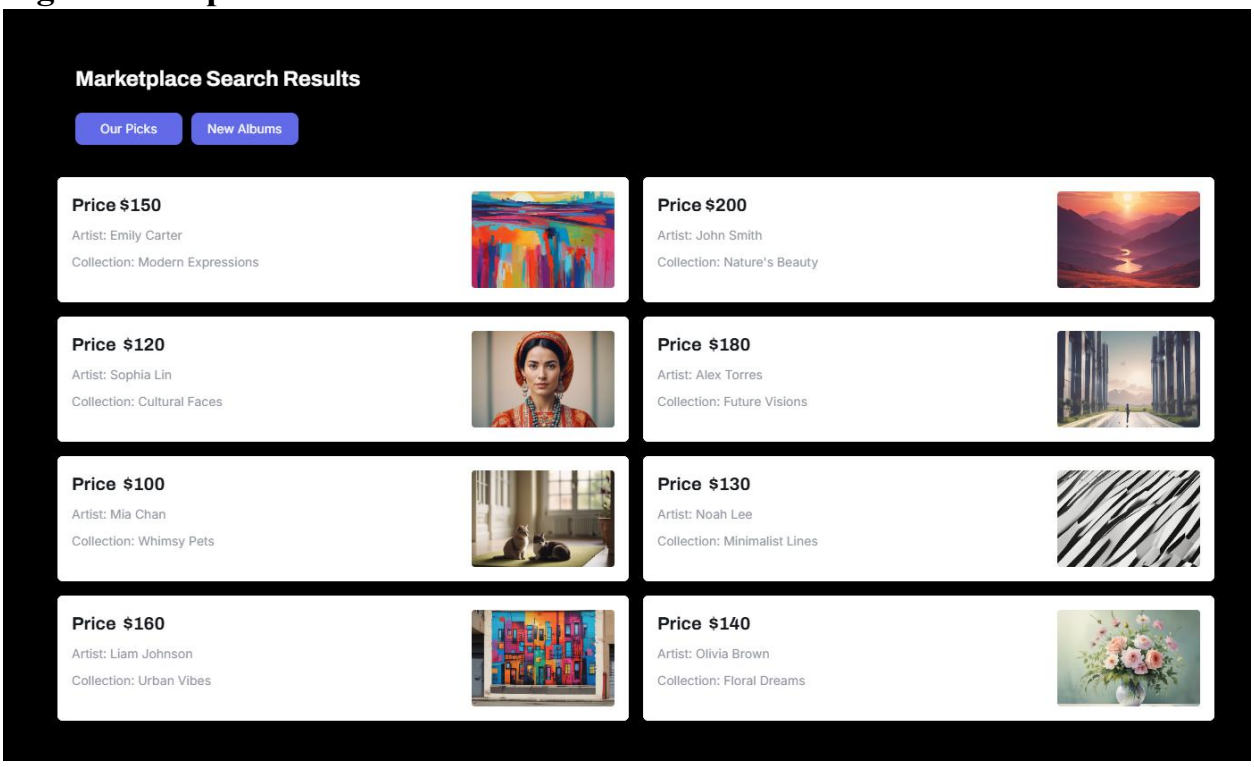


Fig4:MarketplaceSearchResults:



Conclusion

ArtistryHub aspires to redefine the digital art marketplace by offering a specialized platform that not only promotes creativity but also builds trust and connection among artists and art enthusiasts. By prioritizing artists' needs, ArtistryHub empowers creators with tools to display their work, reach new audiences, and manage sales efficiently. Art lovers benefit from a user-friendly experience with sophisticated search and filtering, making it easy to find unique pieces that resonate with them.

With AI-powered recommendations, ArtistryHub provides personalized art suggestions that adapt to users' preferences, enhancing discovery and making the platform enjoyable and engaging for buyers. Metadata Analysis offers a groundbreaking solution to ensure authenticity, building confidence among buyers and protecting artists from the risks of digital art forgery. Each digital artwork undergoes rigorous metadata checks, offering buyers verified assurance of originality and furthering trust in the digital art market.

ArtistryHub will also serve as a community hub, featuring forums, artist resources, and feedback mechanisms to create an inclusive environment where art enthusiasts and creators can interact, share insights, and support each other. The platform's features are tailored to promote engagement, enable secure transactions, and support the growth of a vibrant digital art community.

By blending technology, community, and creativity, ArtistryHub aims to become the premier destination for digital art worldwide, elevating the experience for artists and collectors alike and pioneering the future of digital art commerce.

References

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