Developing an Art Exhibition Website “ArtDrawer”

TALHA JUBAYER



Developing an Art Exhibition Website “ArtDrawer”

TALHA JUBAYER

A report submitted
in partial fulfillment of the requirements
for the degree of
Bachelor of Science in Computer Science and Engineering

UNIVERSITY OF LIBERAL ARTS BANGLADESH
Dhaka, Bangladesh

October 2021

DECLARATION

I declare that this report entitled “Developing an Art Exhibition Website” is the result of my own research except as cited in the references. The report has not been accepted for any degree and is not concurrently submitted in the candidature of any other degree.

Signature	:	Talha jubayer
Name	**:**	TALHA JUBAYER
ID	**:**	172014035
Date	**:**	October 10, 2021

CERTIFICATE OF APPROVAL

The project report entitled "Developing an Art Exhibition Website "ArtDrawer" is submitted to the Department of Computer Science and Engineering at the University of Liberal Arts Bangladesh (ULAB) in partial fulfillment of the requirements for the degree of Bachelor of Science**.**

Dated: October 10, 2021

Syed Akhter Hossain, Ph.D.
Professor & Head of Department
Computer Science and Engineering
University of Liberal Arts Bangladesh Signature & Date

Dr. Abul Kalam al Azad
Assistant Professor
Computer Science and Engineering Signature & Date
University of Liberal Arts Bangladesh

DEDICATION

To our lovely parents, who gave us endless love, trust, constant encouragement over the years, and for their prayers.

To our supervisor, mentors, friends for their patience, support, love, and for enduring the ups and downs during the completion of this report.

This report is dedicated to them.

ACKNOWLEDGEMENT

I wish to express my deepest appreciation to all those who helped me, in one way or another, to complete this project. First and foremost, thanks to the Almighty Allah who gave me strength, direction, and purpose throughout the project.

Special thanks to my project supervisor Dr.Abul Kalam al Azad for all his patience, guidance, and support during the execution of this project. Through his expert guidance, I was able to overcome all the obstacles that I encountered in these enduring 4 months of my project. He always gave me immense hope every time I consulted with him over problems relating to my project.

My friends and family also supported me from every angle they could. They gave me space to do my project properly with a healthy mind.

ABSTRACT

In terms of an art exhibition website, there are some other websites around the world. But there is no dedicated art website for Bangladeshi artists. So ArtDrawer is a website only for Bangladeshi Artists to give them recognition and appreciation for their creative artworks. Besides, they can earn some extra money from this website by selling their art products to the people who love art. Whereas in ArtDrawer, customers can buy art products and enrich their collections and decor their houses using those arts. In ArtDrawer, there are some categories of artworks based on different art mediums like Acrylic Art, Sketch, Oil-Painting, Illustration, Glass painting, Watercolor & other paintings. From those categories, customers can easily find their desired artworks and buy them using different payment systems. For artists around the country, they can easily register to the website using a valid email and password since there is an OTP system integrated into the registration process. After that, they can easily log in to the website and post their artworks and wait for the approval of the Admin to publish their post on the website. Only Admin has the access to do modification, implementation of new features to the website, and post-approval process. Admin can also decline the posts uploaded by the artists. An admin can add new users to the system which can be an Admin, Artist, or a Customer. Besides, Admin can also add posts on their own on behalf of the artist.

Keywords: artworks, canvas, FaQ, OTP, Post, blog.

LIST OF ABBREVIATIONS

CSS	Cascading Style Sheet
FAQ	Frequently Asked Questions
HTML	Hypertext Markup Language
JS	JavaScript
ER	Entity Relationship Diagram
DFD	Data Flow Diagram
UML	Unified Modeling Language
OTP	One Time Password

LIST OF TABLE

Table No	Page no
Table 1: user	37
Table 2: register	38
Table 3: product	38
Table 4: order_list	39
Table 5: Unit testing of User	68
Table 6: Unit testing For Admin	69

LIST OF FIGURES

Figure Name	Page no:
Fig 1: Gantt Chart	17
Fig 2: Art.com	20
Fig 3: Arts and culture	21
Fig 4: Arts and culture	21
Fig 5: Saatchi Art	22
Fig 5: Saatchi Art	22
Fig 7: Artsy.net	23
Fig 8: Etsy.com	24
Fig 9: Use Case Diagram	27
Fig 10: Agile Methodology	29
Fig 11: DFD Level 1	30
Fig 12: ER Diagram	31
Fig 13: Add to cart	32
Fig 14: Cart list	33
Fig 15: Checkout form	34
Fig 16: Home Page	40
Fig 17: Carousel	41
Fig 18: Carousel	41
Fig 19: Top Artists	42
Fig 20: In the Spotlight section	42

Fig 21: Footer **43**

Fig 22: Sign up form **44**

Fig 23: One Time Password(OTP) **44**

Fig 24: OTP error **45**

Fig 25: Forget Password **46**

Fig 26: Code Verification **46**

Fig 27: New Password **47**

Fig 28: Confirmation **47**

Fig 29: Blog 1 **48**

Fig 30: Blog 2 **48**

Fig 31: Blog 3 **49**

Fig 32: All products **50**

Fig 33: All products **50**

Fig 34: Acrylic Art **51**

Fig 35: Illustration **51**

Fig 36: Conceptual Arts **52**

Fig 37: Oil Painting **52**

Fig 38: Sketch **53**

Fig 39: Water Color **53**

Fig 40: Creative Art **54**

Fig 41: Paintings **54**

Fig 42:Glass Paint **55**

Fig 43: FaQ **55**

Fig 44: About Us **56**

Fig 45: Terms and conditions **56**

Fig 46: Terms and conditions **57**

Fig 47: Artist Profile **57**

Fig 48: Add new Post **58**

Fig 49:Update Profile **58**

Fig 50: Cart list **59**
Fig 51: Checkout form **59**
Fig 52: 404 Error **60**
Fig 53: Admin Login **60**
Fig 54: Admin Dashboard **61**
Fig 55: Cart list **61**
Fig 56: Update **62**
Fig 57:Add Users **62**
Fig 58:Add new post **63**
Fig 59: Cart list **64**
Fig 60: Cart list **64**
Fig 61: Cart list **65**
Fig 62: Error **65**

TABLE OF CONTENTS

CHAPTER	TITLE	PAGE
DECLARATION		3
CERTIFICATE OF APPROVAL		4
DEDICATION		5
ACKNOWLEDGEMENT		6
ABSTRACT		7
LIST OF ABBREVIATIONS		8
LIST OF TABLE		9
LIST OF FIGURES		10
TABLE OF CONTENTS		
Introduction		
	1.1 Introduction	15
	1.2 Motivation	16
	1.3 Objectives	16
	1.4 Expected Outcomes	17
	1.5 Project Management and Finance	17
	1.6 Report Layout	18
Background		
	2.1 Preliminaries/Terminologies	19
	2.2 Related Works	20
	2.3 Comparative Analysis	24
	2.4 Scope of the Problem	24
	2.5 Challenges	25
Requirement Specification		

3.1 Business Process Modeling **25**

3.2 Requirement Collection and Analysis **26**

3.3 Use Case Modeling and Description **27**

3.4 Design Requirement **28**

Design Specification

4.1 Methodology **29**

4.2 Front-end Design **30**

4.3 Back-end Design **31**

4.4 Interaction Design and User Experience (UX) **32**

4.5 Implementation Requirements **35**

Implementation and Testing

5.1 Implementation of Database **37**

5.2 Implementation of Front-end Design **40**

5.3 Testing Implementation **66**

5.4 Test Results and Reports **67**

Impact on Society, Environment, and Sustainability

6.1 Impact on Society **70**

6.2 Impact on Environment **70**

6.3 Ethical Aspects **71**

6.4 Sustainability Plan **72**

Conclusion and Future Scope

7.1 Discussion and Conclusion **73**

7.2 Scope for Further Developments **74**

References

1.1 INTRODUCTION

Our country is known as a cultural country among all the Asian countries. People here are enhanced with so many talents by GOD. People from rural areas, continuing our rural culture such as Nokshi Katha, Hand made bags design, crafts, and so on. People from urban areas are also engaged with so many cultural fields. So, this project ArtDrawer is a website to demonstrate the creative artworks of our very own Bangladeshi people**.** Here one will be able to demonstrate their arts to the art lovers. By using this website, our talented artists can get the opportunity to get appreciation and new artists can get recognition. Perhaps it is a website for creating employment to reduce the unemployment problem of our vast population. This website can be a platform to get recognition and appreciation for creating artworks and also an income source for our precious souls. People can also buy art products from this website according to their tastes. This ArtDrawer website can be a great platform for young artists who are interested in doing artwork. By using this website we can exhibit arts all around the country. Also, this project has some future implementations which will enhance our works more than previous works. People will choose this as professional work. This project faces so many challenges in the implementation of the website but still, this is an open project for all the people who want to engage in this field.

1.2 MOTIVATION

As we all know**,** during the lockdown period people in our country involved themselves in various works like self-development, skill development, doing household work, trying to do new things. But some other creative people engaged themselves in making various arts for entertainment. They tried to make sketches of their close ones, where some of them drew paintings of nature, some of them made sculptures, and some tried to demonstrate arts on glass. They did those arts for their happiness. They tried to spread their arts using social media like Facebook, Instagram, and so on. There were a couple of Facebook groups having half a million people just to show the arts. One was “BD Got Talent (BDGT)” where the other one was “Castaway to the Moon (COTM)”.

1.3 OBJECTIVE

In that lockdown period, there was a pause in our daily life so everyone was trying to make them busy in doing such activities. ArtDrawer is an art exhibition platform where anyone can find various arts made by nothing but Bangladeshi people. ArtDrawer has a huge collection of art using different art mediums like Acrylic, Pencil, Oil-paint, Color Pencil, Glass Paint, etc. There are some other arts made by using Illustration in smart devices like tablets or personal computers which is also called Digital Art.

1.4 EXPECTED OUTCOMES

The expected outcome of this project was to make the website fully functional. A user-friendly website for both the artists and the customers. The website can be also used for art exhibitions. In case the website was made keeping in mind that, we all faced a horrible situation for the Covid situation. During the lockdown period, there was no possibility to organize any type of art exhibition so in ArtDrawer any type of art exhibition can take place virtually.

1.5 PROJECT MANAGEMENT AND FINANCE

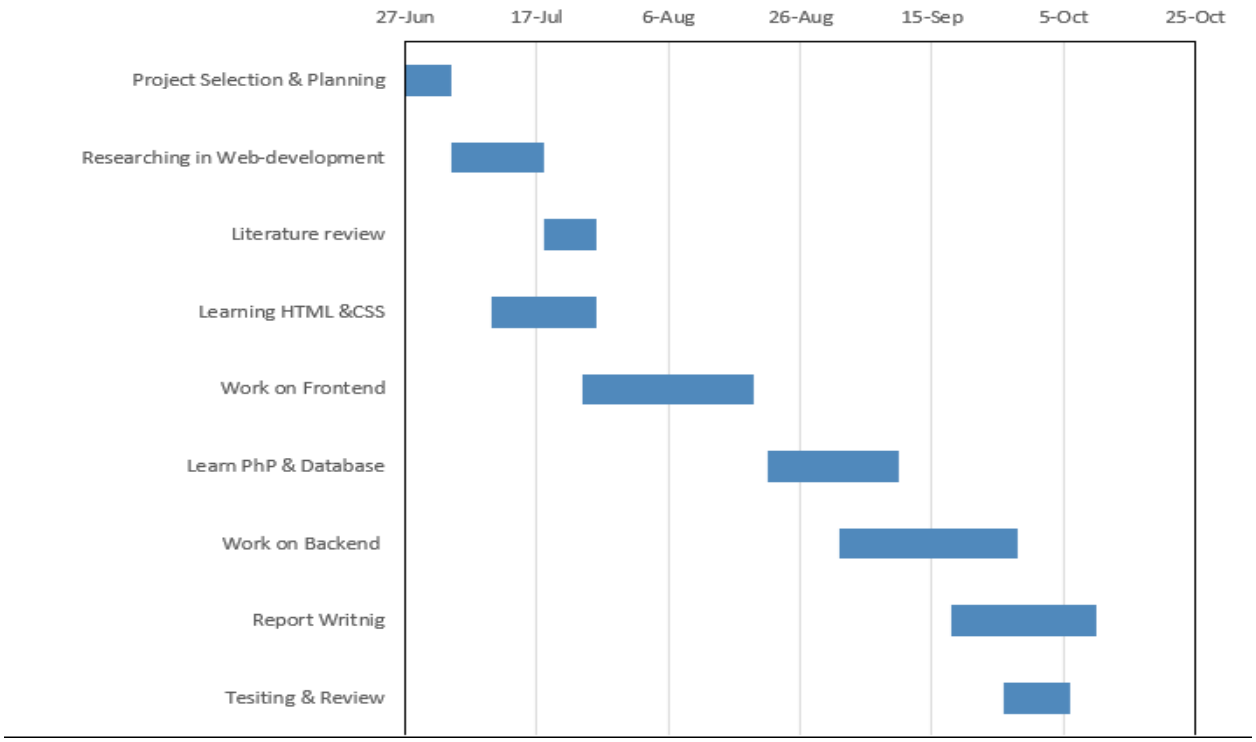


Fig 1: Gantt Chart

I've followed this Gantt chart to make this project complete. It took me some days to select my project topic first. Then I looked at multiple resources about how a website online-basedFacebookIt took some days to learn a little bit of HTML 5, CSS 3, and Bootstrap 5. After learning those things I started to design my website according to the data flow diagram. After designing the website,

I have integrated PHP 7 to connect the website to the database. For the database, I've used InnoDB, and as a Web server, I used Xampp. It took me a while to do all of the backend work. After completing the website I started to write the report and for testing purposes, I used manual testing which is also called unit testing.

1.6 REPORT LAYOUT

The project layout of this paper is given below:

Chapter-2: In chapter 2, I am going to introduce my project firstly. After that, I want to discuss the motivation and objective of this project. Then I will compare my website with the existing websites.

Chapter-3: In this part, the requirement specification of making this website will be discussed. That contains Business Process Modeling, Requirement Collection, and Analysis, Use Case Modeling, and Description. Design Requirement

Chapter-4: In this chapter, the design specification of the system will be shown through diagrams. There will be multiple diagrams to demonstrate the system for both frontend and backend.

Chapter-5: In this section, I want to demonstrate the whole system by providing screenshots of the websites. That includes both the front end and the backend. The testing part is also included

here.

Chapter-6: After Chapter 5, I wish to discuss the social impact of this website and what type of social change can be done by this website. After that, the impact of this website on the environment will also be discussed. As ArtDrawer is for creative people, ethics plays a vital role here. This will also be enclosed. For making arts many types of mediums are needed so we should have a sustainable plan for making our world a better place.

Chapter-7: The conclusion of the report is in this section. I want to conclude the project by discussing the scope to work on this project shortly. In this part, I want to state my opinion about what type of development is needed to deploy the website globally.

2. BACKGROUND

2.1 Preliminaries/Terminologies

Before coming to the implementation, there is a lot of research that should be done. The art drawer is an online-based website, so we need to go through a lot of research about other websites from other countries. During this pandemic, we saw so many creations of random people on Facebook. They showed their talent through a video, their video got viral worldwide. All people appreciated their video well. We, the Bangladeshis, have more talent to explore and expand. So a thought came to my mind to expand our talent into the other part of the world though there were already some facebook Bangladeshi groups started to explore and appreciate others talent. I talked to some of them and got information. If there is a website in our country, how do they get help from this? They appreciated this thought as they also have an income source as all of them were students. I also stalked some people who shared their works. They also shared their works as an opportunity to earn more. This information and knowledge about their priorities in this field made me so encouraged to work on this project.

2.2 Related Works

There are many Art exhibition web applications out there. One named "**art.com**"[1] a renowned art website. They operate their business all over the world and sell their products starting from 49$ having additional shipping costs based on the location. Another is "**arts and culture**"[2] made by tech giant Google. They are focused on exhibiting different types of famous artworks around the world. "**Saatchi Art**"[3] is another great example in this field. They start from 100-5000 for selling their goods. "**Artsy.net**"[4] sells their products from a minimum of 60$ to -150,000$ maximum US dollars. They brought over a million artworks from their network of 4,000+ partners, including the world's leading galleries, auction houses, fairs, and institutions. "**Etsy.com**"[5] is another platform for selling and buying art products.

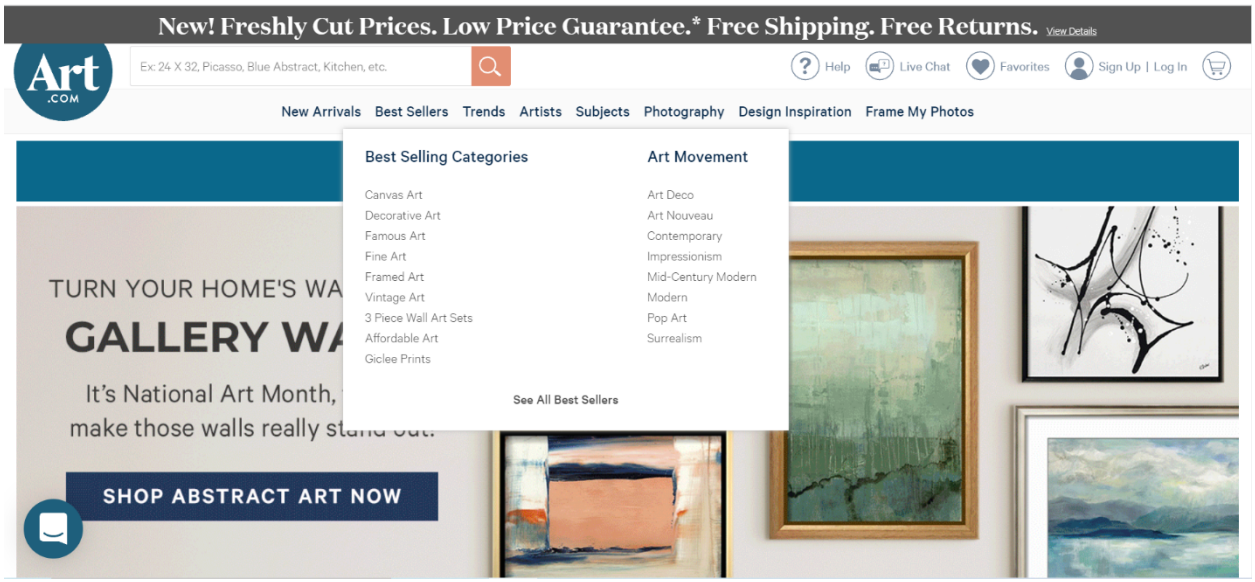


Fig 2: Art.com

Art.com is an art-based website from where one can find various art items all around the world. They have several shipping methods which are free and they have an e-commerce policy to return items free of cost.

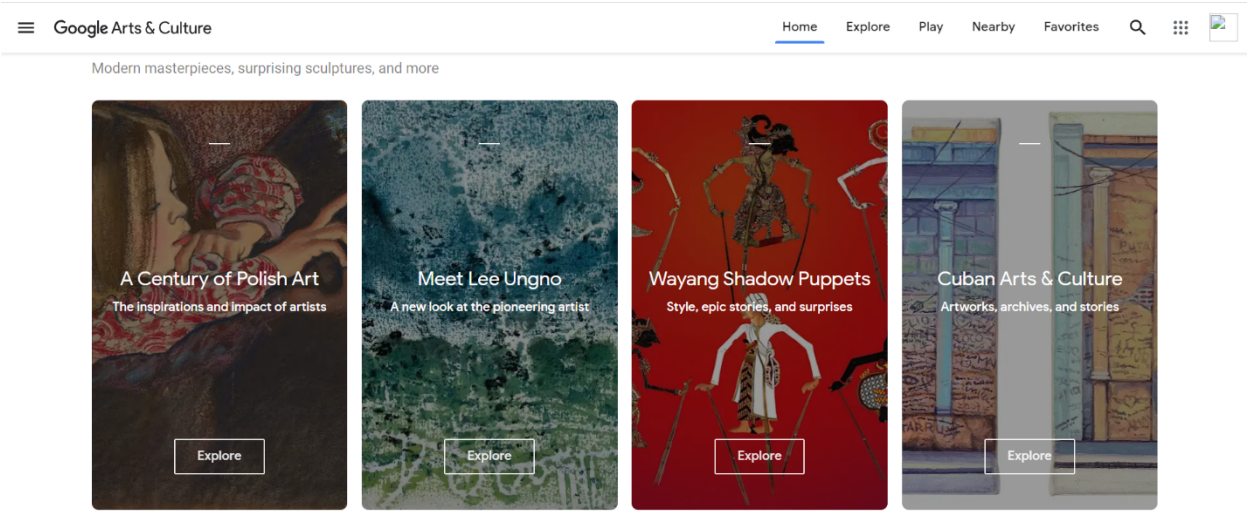


Fig 3: Arts and culture

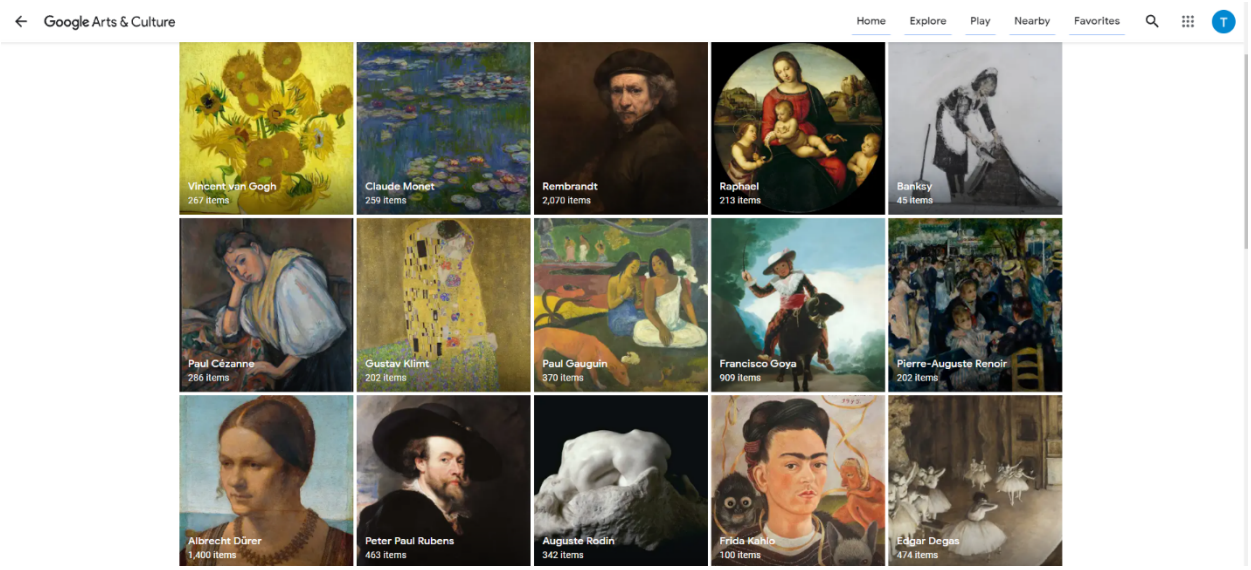


Fig 4: Arts and culture

Fig 3 & Fig 4 stands for Google's "**Arts and Culture**". They exhibit famous artworks all around the world with the histories and objective of making that art. But they don't run such businesses or any kind of buying or selling of art.

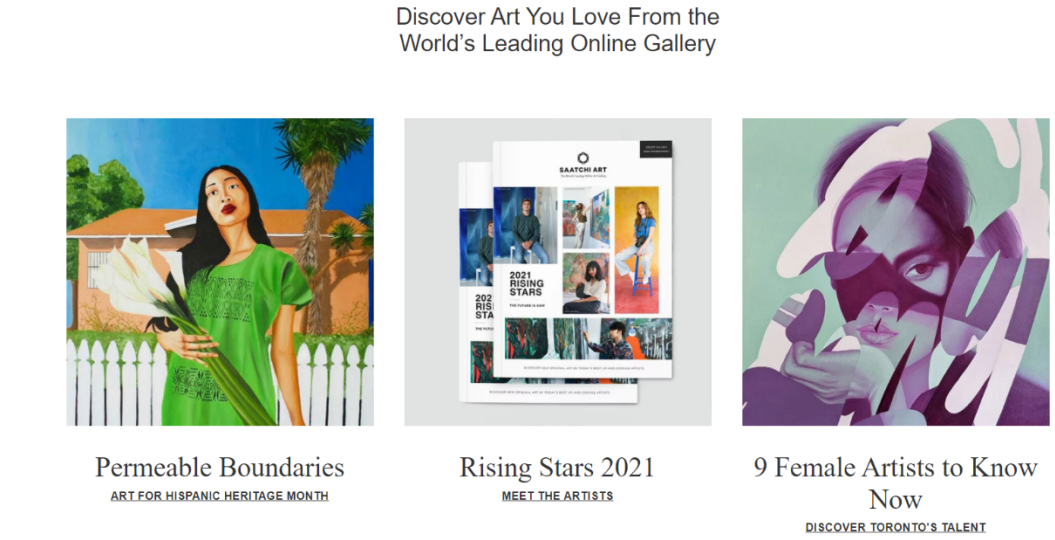
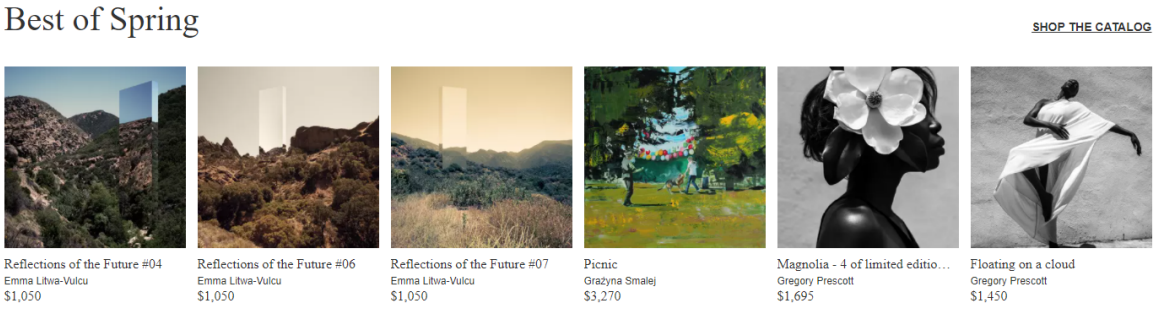


Fig 5: Saatchi Art



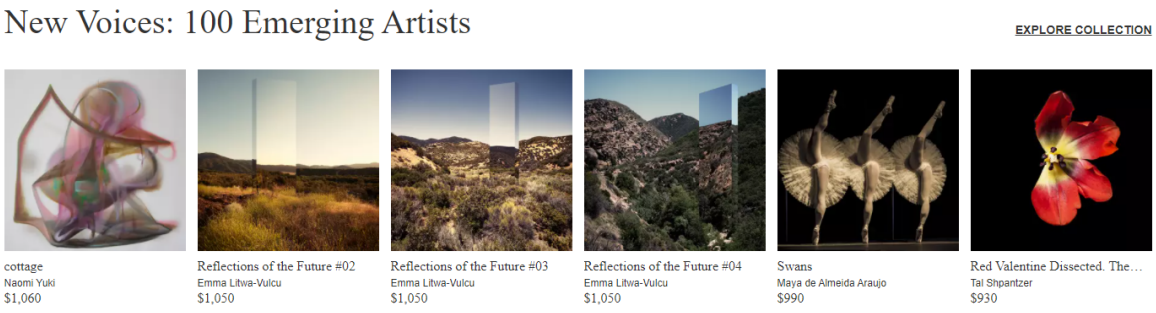


Fig 6: Saatchi Art

Fig 6 & Fig 7 are "**Saatchi Art**" an online art exhibition website but along with exhibiting artworks, they are involved in doing business by selling art products. Customers need to bid for particular art products if they wish to have the art in their collection.

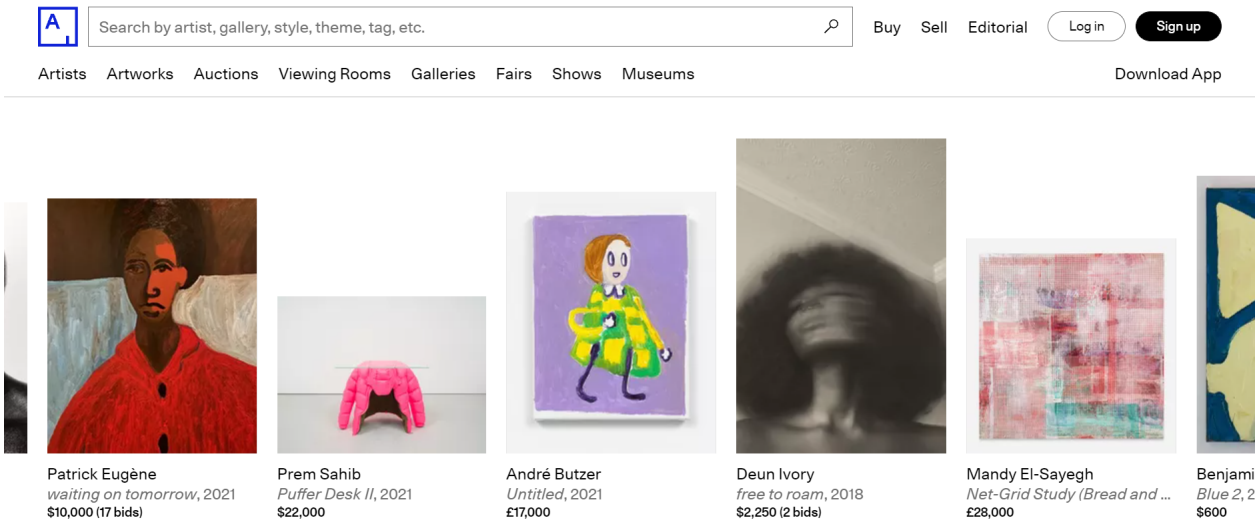


Fig 7: Artsy.net

In **Artsy**, one can buy and sell art products. Artsy is a leading marketplace to discover, buy, and sell fine art products.

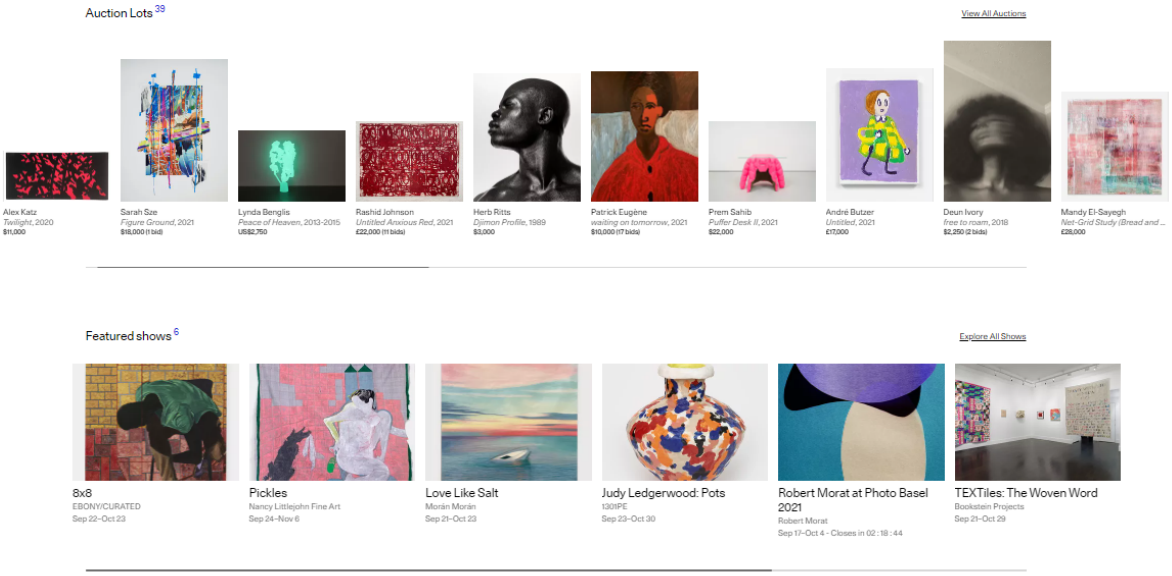


Fig 8: Etsy.com

Etsy.com is an online e-commerce website having various types of items in its collection. They sell various home decors, gift items, and self-care products. Besides those products, they also involved themselves in selling arts.

2.3 Comparative Analysis

ArtDrawer is a combination of those Art related websites. “Art.com” operates worldwide, where “ArtDrawer" is only focused on Bangladeshi people. Google’s “arts and culture” only exhibits the famous artworks done by well-known artists around the world whereas in ArtDrawer Bangladeshi artists will get the opportunity of exhibiting the works done by themselves. In “Saatchi Art ", they start from a high range of price which could be a huge amount in Bangladeshi currency. A maximum number of people in our country couldn’t get the opportunity to purchase art by spending so much money. But in ArtDrawer one can find great artworks at a reasonable price. In “Etsy.com” they sell various products for home decor, clothes, toys for children, and so on. But in ArtDrawer only fine arts can be found because Art Drawer is focused on only art-related products.

2.4 Scope of the Problem

In our country, many people love artworks and admire the artist for doing such things. But very few people are willing to pay a price for a beautiful art product. We live in a society where people will love to have an art piece as a gift but they will hesitate to buy one. So building an art website could be less beneficial than other websites. But for art-loving people, this can be a great platform to find all the artworks made by only Bengali artists under one roof.

2.5 Challenges

The main challenge I faced in this project is the post-approval by the Admin. Since In ArtDrawer one can register into the website and he/she wishes to upload his/her artworks into the website they can simply make a post by giving a Title of the Product, Artist Name, A short description of the product, a Category and the price of the product. After giving all of this information the post has been saved into the database. After that, The Admin has to look into the database to see if there is any product available. After that, the Admin has the only option to publish the post on the webpage or decline the post. I overcame the situation and I was able to section the products based on their categories.

3. REQUIREMENT SPECIFICATION

3.1 Business Process Modeling

This ArtDrawer website is made to give appreciation and recognition to art-loving people. So the business process modeling of this website is based on the artists themselves. Because art can't be measured by price. Artists are the driver of this website, they can wish to have any amount of price for their artworks. But ArtDrawer will earn from displaying various types of "Advertisements" on the website. After the deployment of the website, it will take 3-4 weeks to get approval from "Adsense" which is maintained by tech giant Google. This will need at least 15- 20 articles and a renowned domain service to get approval. After getting approval from "Adsense", according to the free spaces in the website Google will provide various advertising into the website.

3.2 Requirement Collection and Analysis

Registration: ArtDrawer will need a registration method for the users. The registration process should be easy and secured.

Login: There should be different login systems for the users and the admins. There must be options to go back to the user login system if the user tries to log in as an admin.

Blog: A blog page is also needed about the recent art-related news.

Add to cart: In ArtDrawer, there must be options for the customers to purchase art products from the website.

Add a post: There should be a process to add a new post to the website where both the admin and the user can add a new post.

Order system: After adding items to the cart, One needs to confirm the order by providing personal details.

Logout: To get out of the system there must be logout methods too.

3.3 Use Case Modeling and Description

Use Case Diagram:

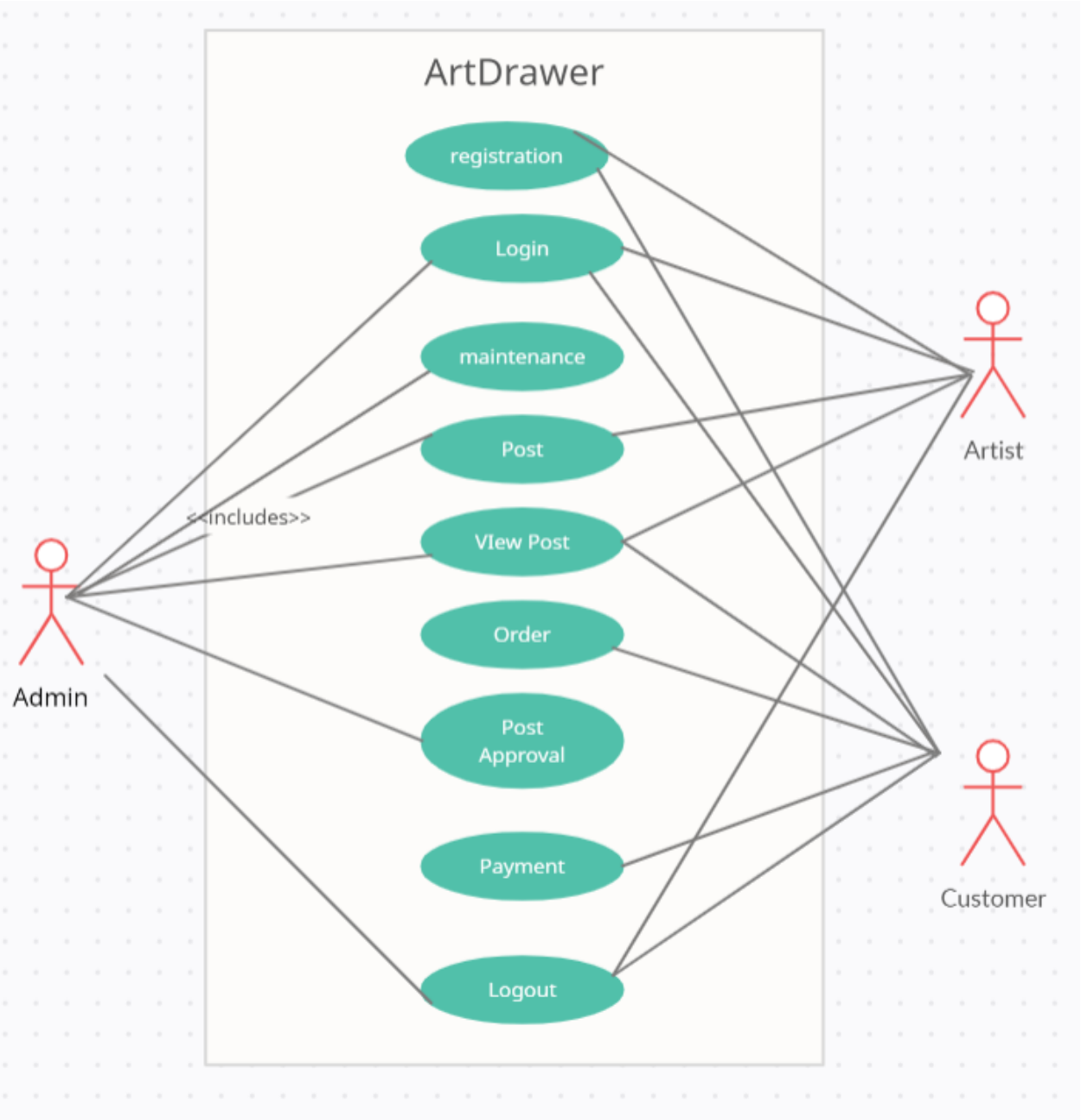


Fig 9: Use Case Diagram

In this diagram, there are multiple methods like registration, login, maintenance, post, view post, order, Post-approval, payment, and logout. As we can see there are three main actors in this system. Admin has multiple roles in this website as well as the artist. Artists

and Admins both can add and view posts but only Admin can approve posts. On the other hand, artists can register and then log in to the system but for Admin, they must be introduced by another admin. Every actor in this system can sign out from the website whenever they wish to.

3.4 Design Requirement

Design requirements of ArtDrawer are given as follows:

- A user-friendly interface for both Admin and users.
- A secured registration process for the users using authenticity.
- Easy Login system for both Admin and Users.
- An alternative login process if the user forgets the password.
- A wonderful website with simple styling.
- A system to allow the user to add posts.
- Allow the Admin to Upload the post into the website or Decline.
- Allow Admin to add new users and admins to the website.
- Allow admin To add new posts to the website.
- Cash on delivery system
- An easy log-out system for both admin and users.

4. DESIGN SPECIFICATIONS

4.1 Methodology

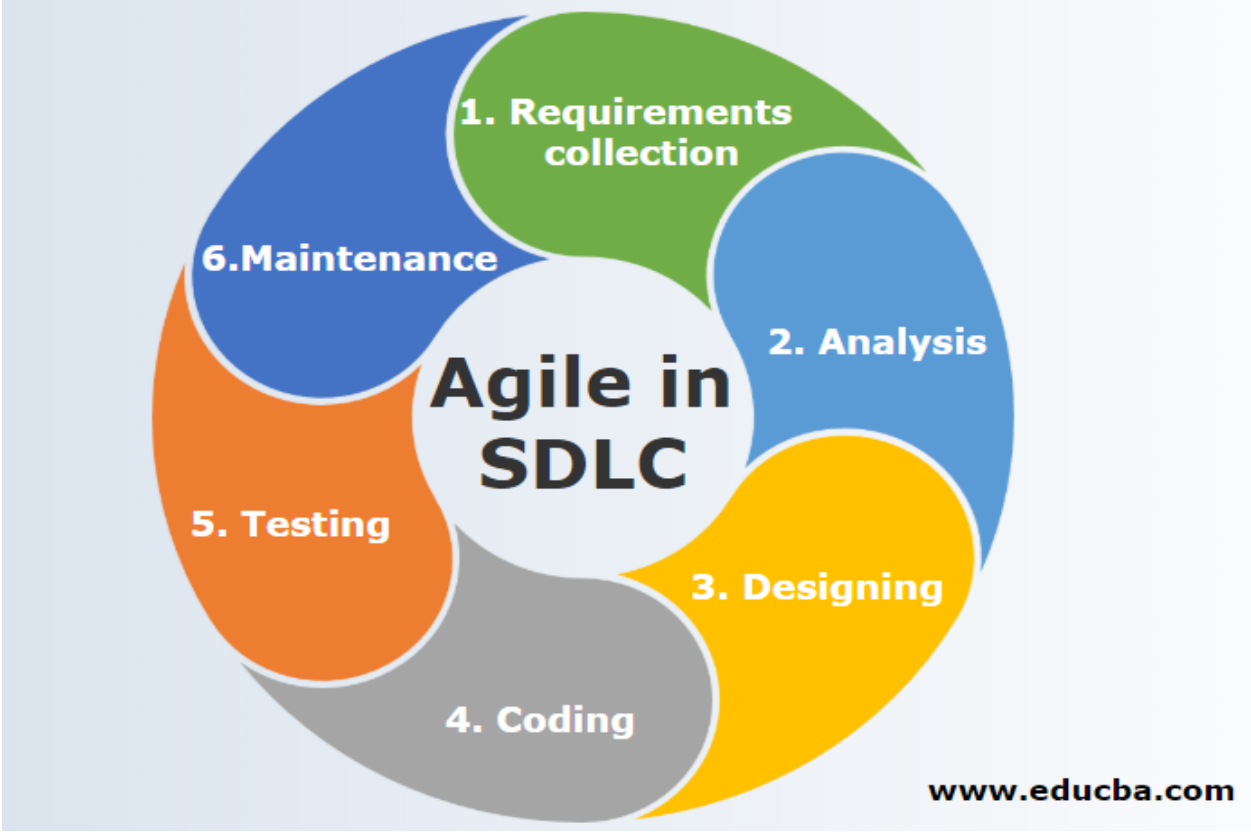


Fig 10: Agile Methodology

To complete my project, I followed "Agile Methodology". For that first, I needed to collect all the requirements to complete my project successfully. After that, I analyzed all the requirements that were needed. Then I designed the prototype of the project using diagrams. After designing I started to code and demonstrate the project based on the design that I did before. After implementing the coding part, I ran some manual testing to test the system. I did some maintenance based on some feedback from some dummy users.

4.2 Front-end Design

Data Flow Diagram:

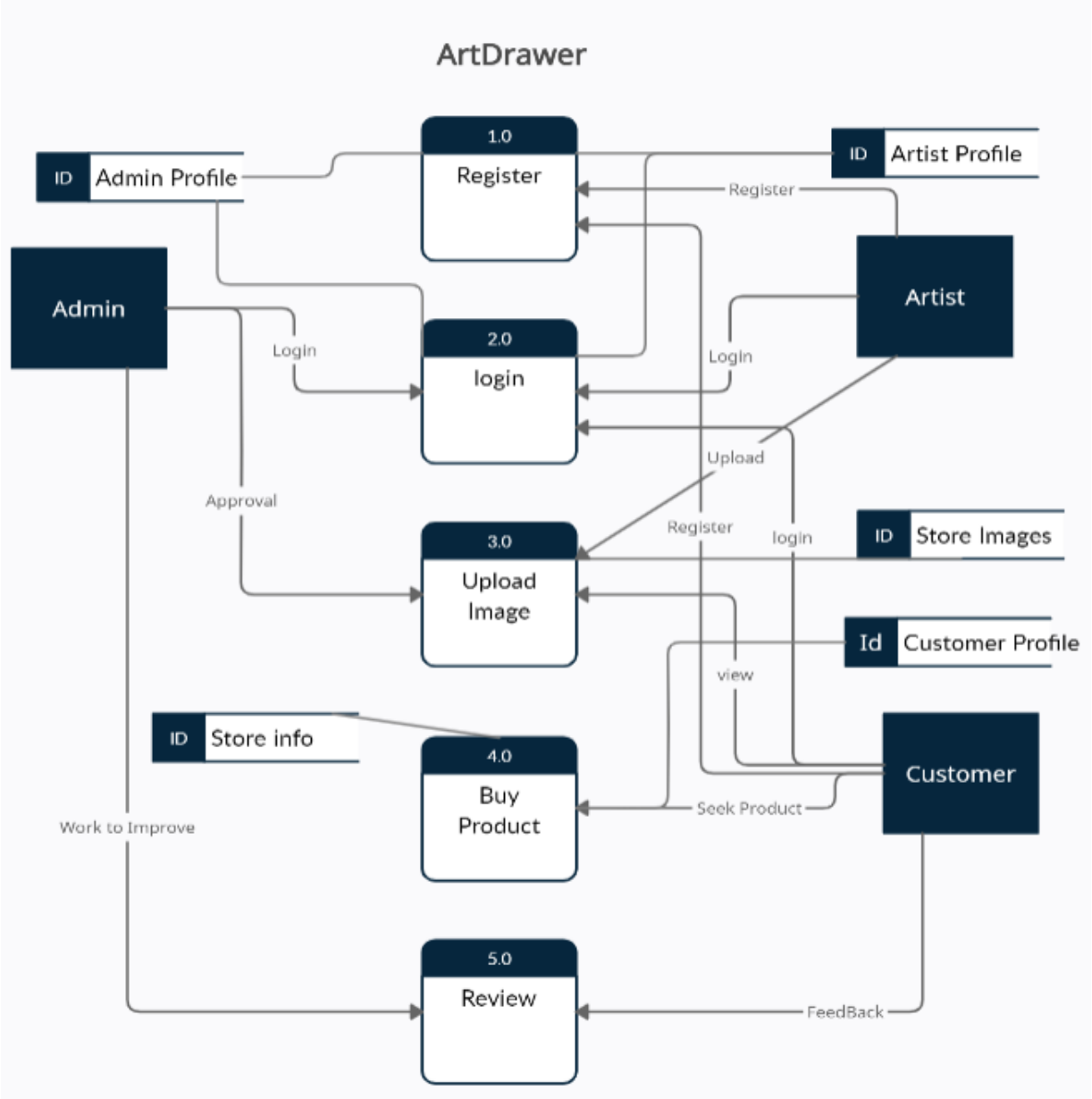


Fig 11: DFD Level 1

This Data Flow Diagram is also called DFD. Here is the level 1 Data Flow Diagram of ArtDrawer. Which is having multiple entities and processes with having databases for storing

such information. There are several numbers of actors having different inputs and outputs where there are also a bunch of processes according to the inputs.

4.3 Back-end Design

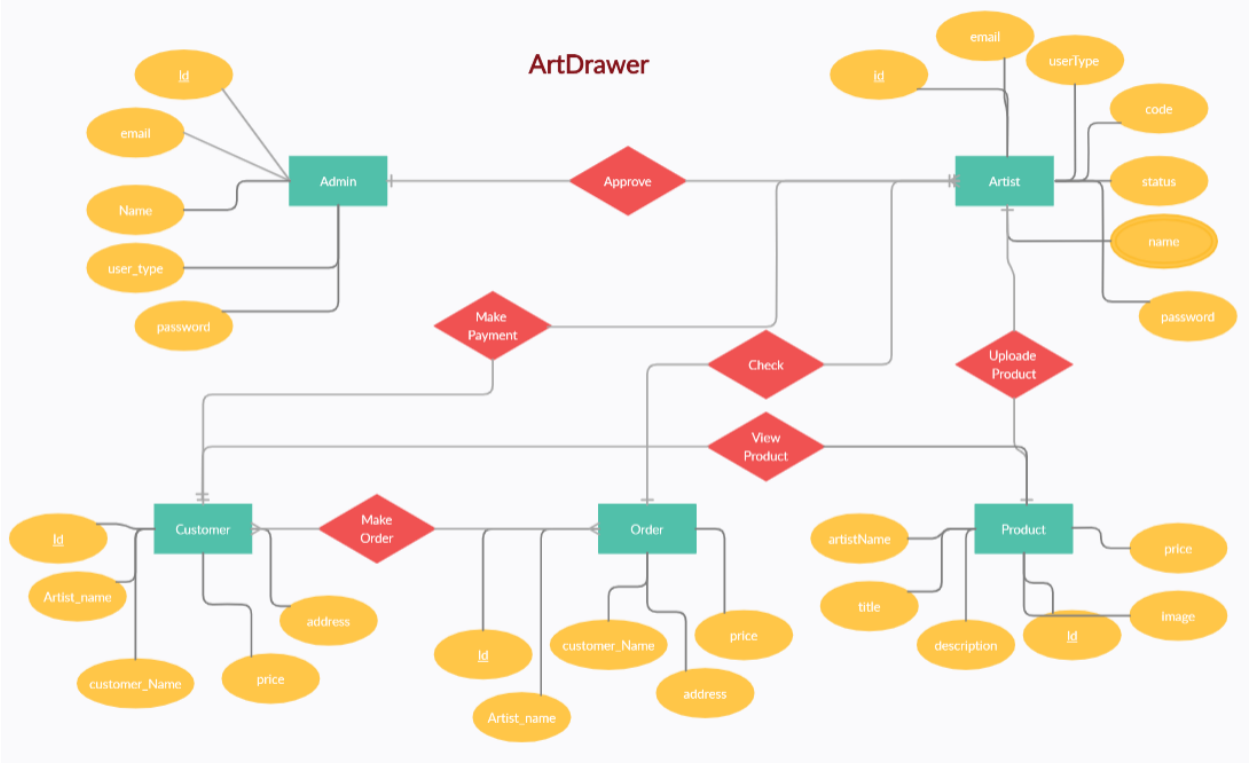


Fig 12: ER Diagram

This is an ER diagram to show the connection of the databases and the relation between them. In this diagram, there are 5 entities, but we are considering artists and the users as one. Because artists can also wish to buy other artworks from different artists. Every entity in this diagram has an id as its primary key. So we can easily implement a foreign key relationship if we need to.

4.3 Interaction Design and User Experience (UX)Add to Cart:

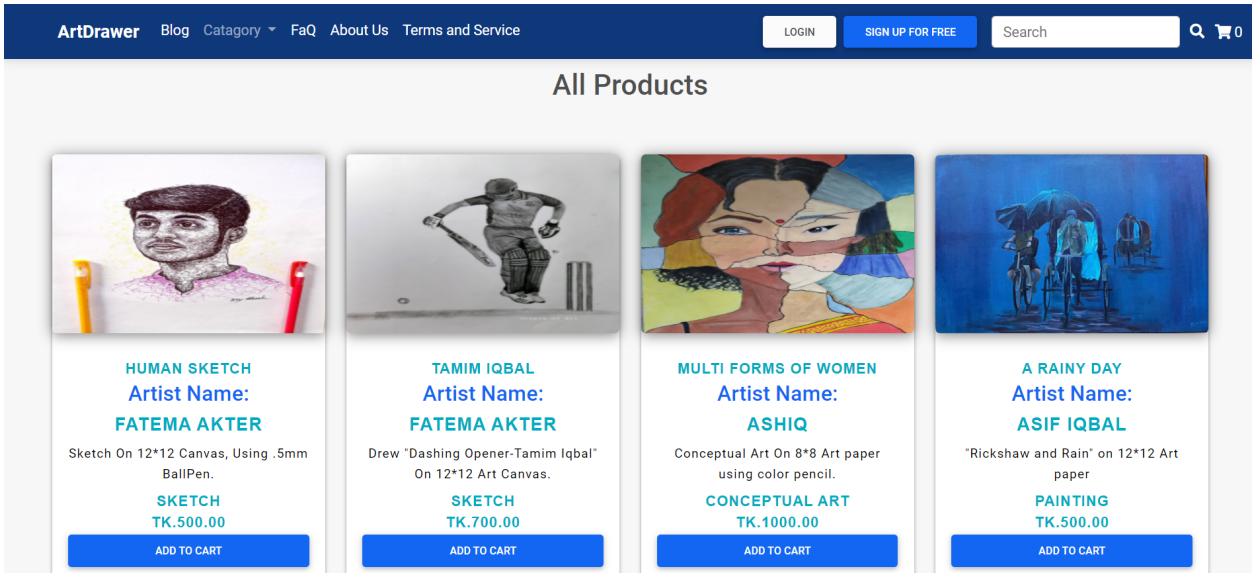


Fig 13: Add to cart

“Add to cart” is a functionality of ArtDrawer; by that functionality, one can easily interact with the system.

View Cart Items:

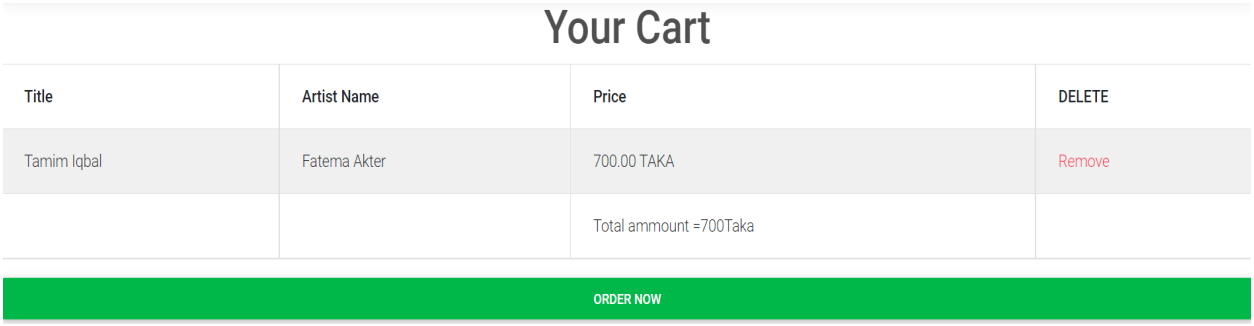


Fig 14: Cart list

By pressing the **Cart** button, one can easily view their carted items, From that, they can keep the item for a further order or delete the item from the list.

Checkout Form:

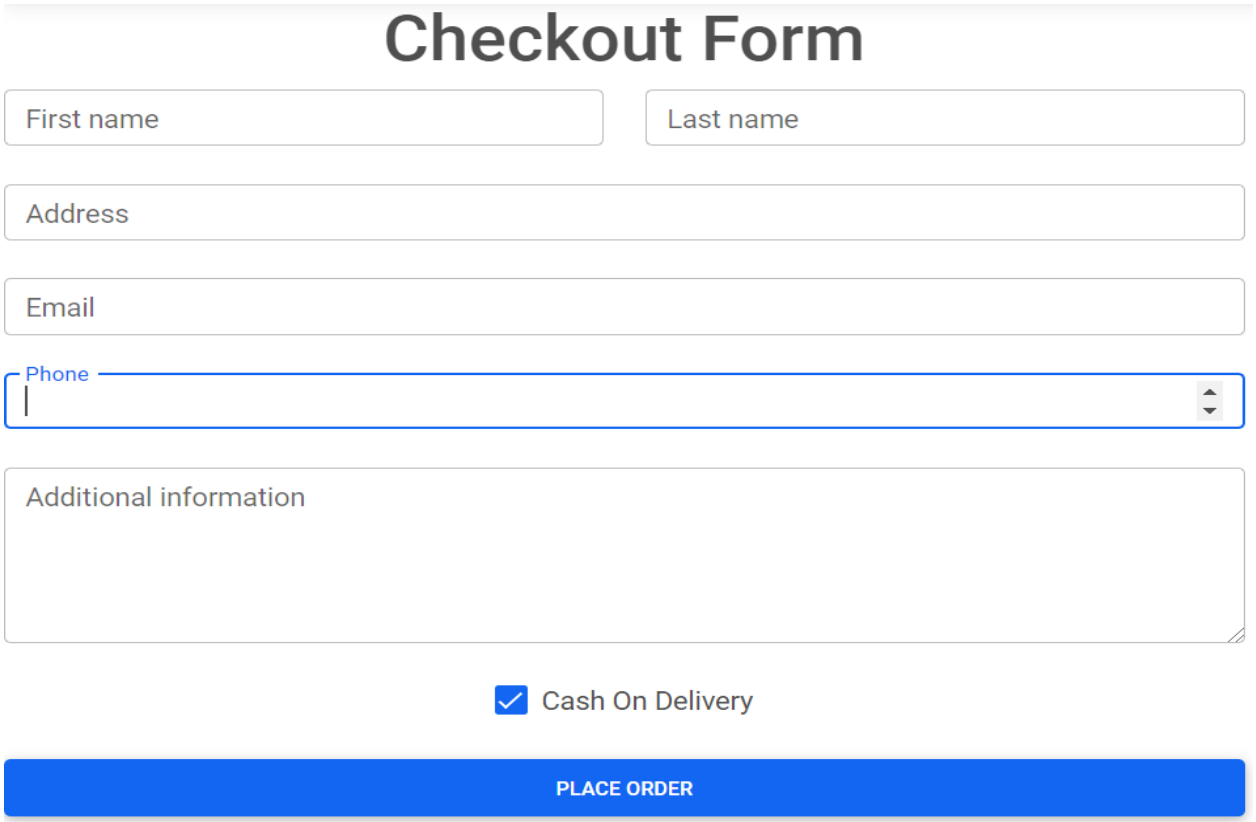


Fig 15: Checkout form

After viewing the Cart list, one can easily order the desired item by pressing the "Order Now" button and proceed to checkout by providing detailed information.

4.4 Interaction Design and User Experience

Users can interact with the system by purchasing art items. Firstly, they need to add products by “add to cart”. After that, they need to go to the cart page to see if the desired product is on the list or not. If the user wants to confirm the order_user table, he/she will need to provide personal information for completing the order from the order page.

4.5 Implementation Requirements

To implement the whole idea about making an art exhibition web application, I started researching and settling down the functionalities of the services that the web application should provide. Next, I have done an adequate amount of study on present systems and explored what are the drawbacks. When the functional requirements were completed, I switched my inspection on the existing popular browsers, suitable programming languages, and supporting features. Later, I met with my supervisor and decided to develop an Art Exhibition web application for Art loving people of our country.

Below are the technical requirements to develop

Software Requirements

- Operating System: Windows 10
- IDE: repl.it, Sublime Text 4 (Build 4113), Notepad++
- Database: MySQL,InnoDB, XAMPP Control Panel 3.2.4
- Front End: HTML5, CSS3, Bootstrap 5, JavaScript, Php

• Web Service: Apache HTTP Server 2.4.46

• Browser: Google Chrome, Firefox, Microsoft Edge

Hardware Requirements

• Processor: Intel core i3

• Processor speed: 2.70 GHz

• RAM: 4 GB

5. IMPLEMENTATION AND TESTING

5.1 Implementation of Database

Schema Table Names:
1. usertable
2. register
3. product
4. order_list

1. usertable

Column	Type	Size
id	**int**	**11**
name	**varchar**	**255**
email	**varchar**	**255**
password	**varchar**	**255**
code	**mediumint**	**50**
status	**text**	

Table 1: user

Table 1: "id" is the primary key of this table. This table is for storing the data of the users. By using this table, one can easily distinguish the status of verified and unverified users.

2. register

Column	Type	Size
id	int	11
username	varchar	255
email	varchar	255
password	varchar	255
usertype	varchar	255

Table 2: register

Table 2: This table is for the Admin. By using this table admin can easily add another admin/user to the system and differentiate by “usertype”.

3. product

Column	Type	Size
id	int	11
title	varchar	255
artist_name	varchar	255
description	varchar	255
catagory	varchar	255
price	double	10,2
prdct_img	varchar	255
status	int	11

Table 3: product

Table 3: This is the “product” table to store all of the products by their categories. all products uploaded by both admin and user will be stored here.

4. order_list

Column	Type	Size
id	int	11
first_name	varchar	255
last_name	varchar	255
address	varchar	255
email	varchar	255
phn_number	varchar	255
info	varchar	255

Table 4: order_list

Table 4: This table is for the orders that were made by the users. which contains the details of the user.

5.2 Implementation of Front-end Design

User/Artist **Home Page:**

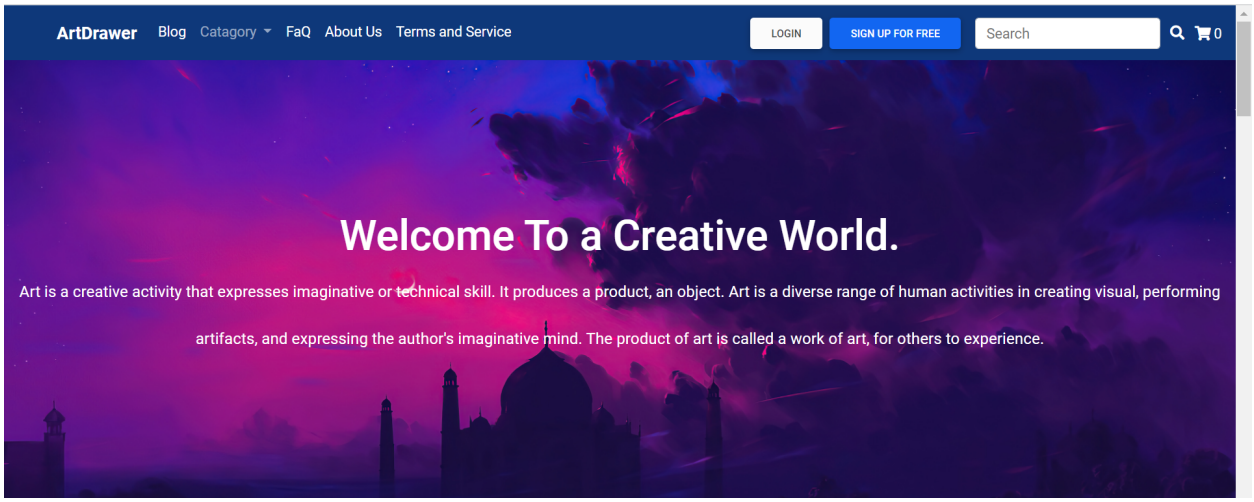


Fig 16: Home Page

This is the homepage of ArtDrawer having a navbar and welcome message and signup/login functionality in it. The Navigation bar also contains some other pages like a blog, about us, terms and conditions, and also the categories of different arts. There is a short description of what art actually means. As one can search by using different keywords from the navigation bar. This website is a fully responsive website. The web pages of this "Art Exhibition" will be shown as per the device of the users.

Carousal: Top Sell of the Week

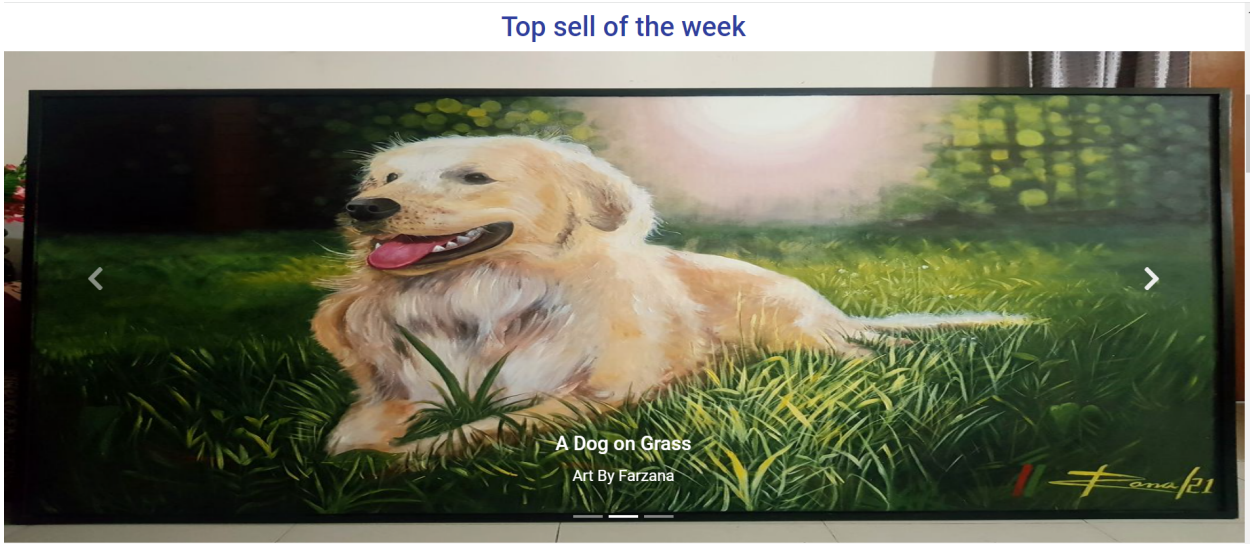


Fig 17: Carousel



Fig 18: Carousel

Fig 17 & Fig 18 is a Carousel, this is a section which will contain some best selling products of the week.

Top Artists:

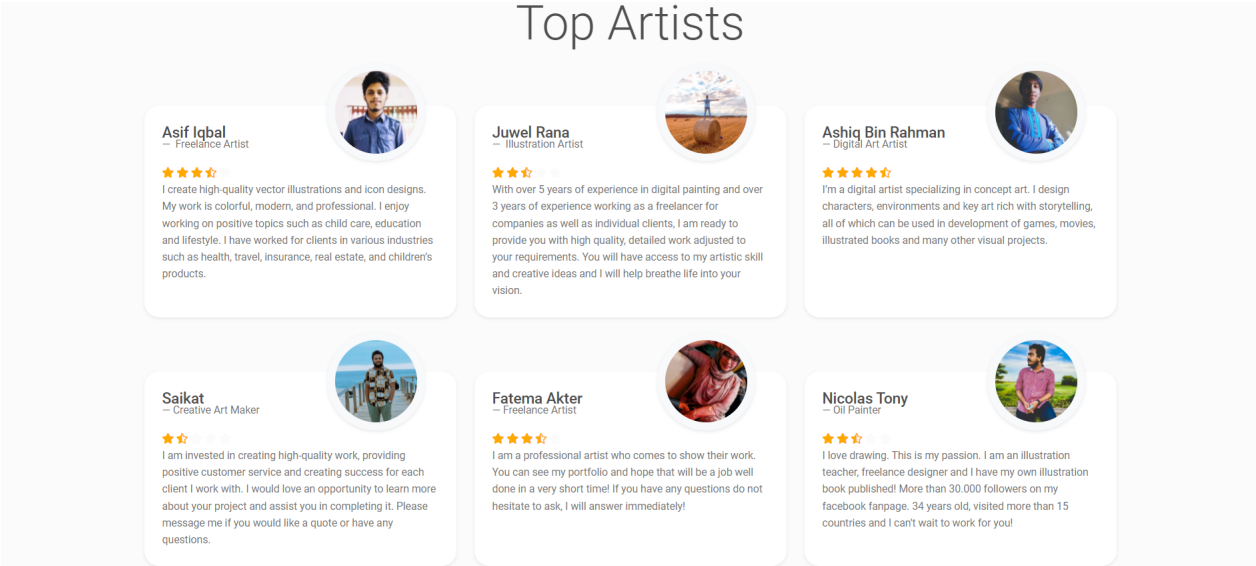


Fig 19: Top Artists

The top artist is another section that contains some featured artists list of the website having user rating and a short biography about the artists.

In the Spotlight:

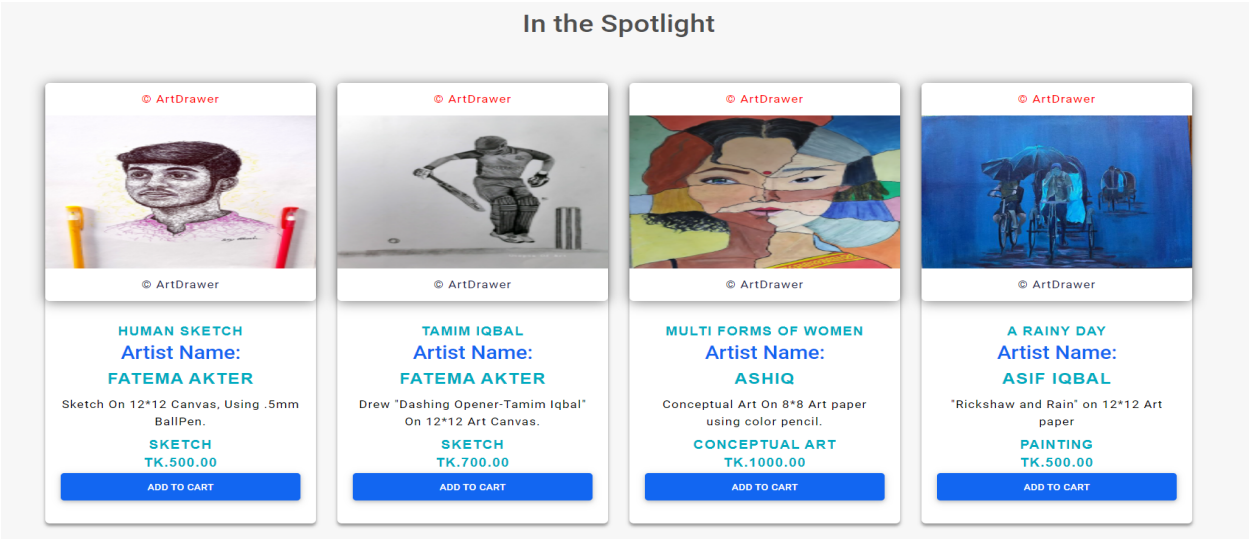


Fig 20: In the Spotlight section

Fig 19 is on the spotlight section having some beautiful art products.

Footer:

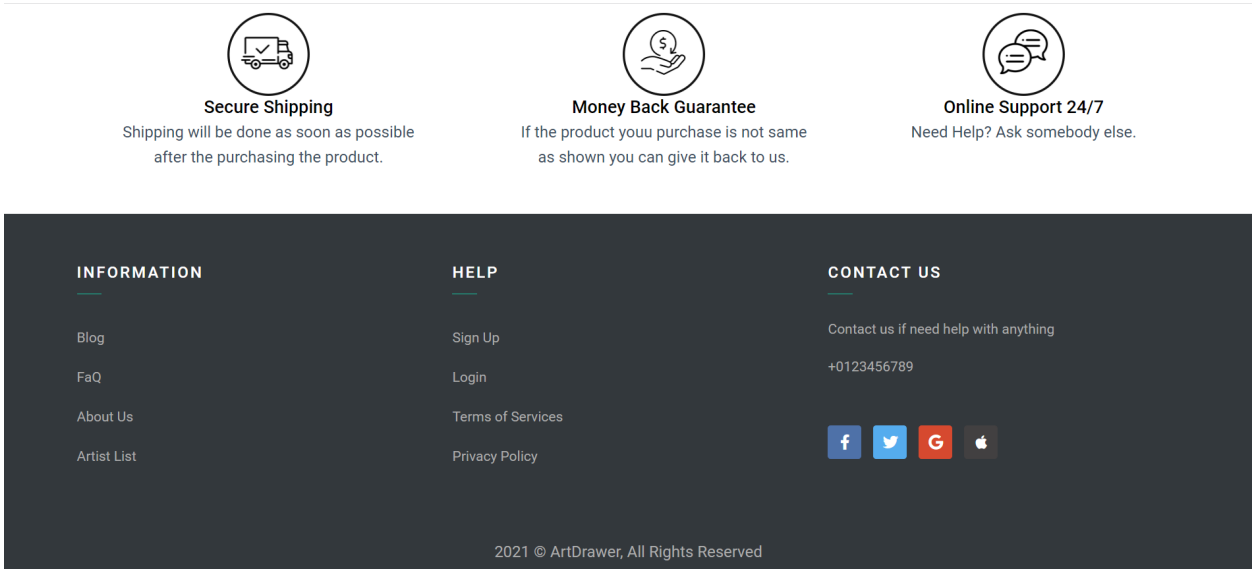


Fig 21: Footer

This is the footer section of ArtDrawer. That contains various hyperlinks with the other pages in the websites. One can easily go to the other sections of the websites just by using the links of this footer.

Signup Form:



Fig 22: Sign up form

This is the signup form, by using this form one can easily register an account by giving a **valid** email address.

OTP:

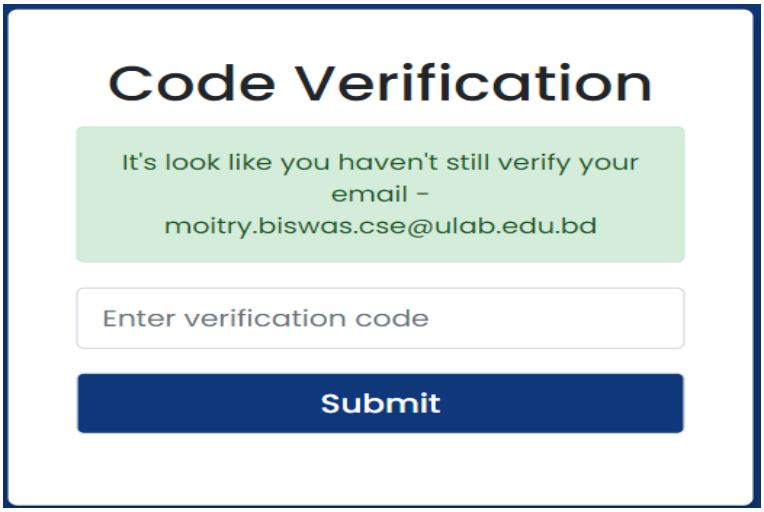


Fig 23: One Time Password(OTP)

If the user provides a valid email address then this section will display a successful message about sending OTP to that particular email address and looks for the OTP to go to the next page.

If OTP Error:

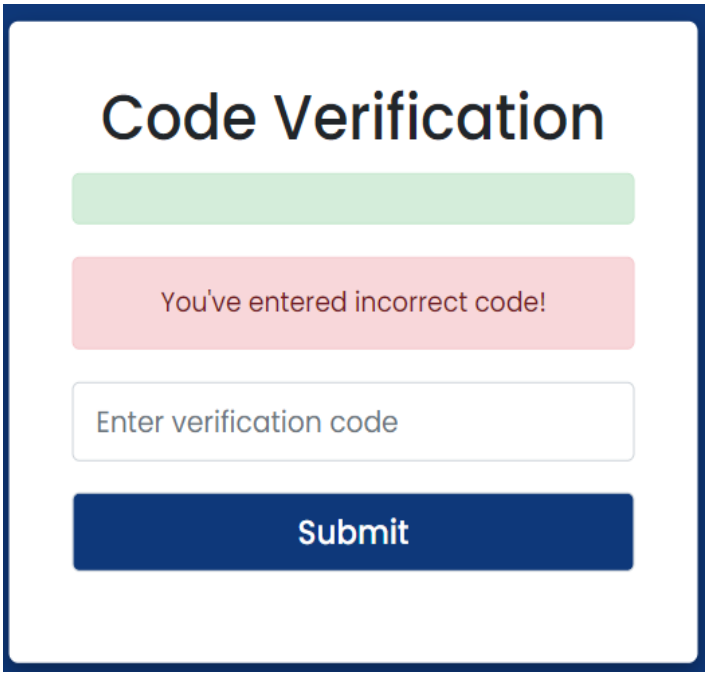


Fig 24: OTP error

If the user entered the **wrong** OTP this section will display the error message, And ask for the OTP that was given to the user.

Forget Password:

Step 1-

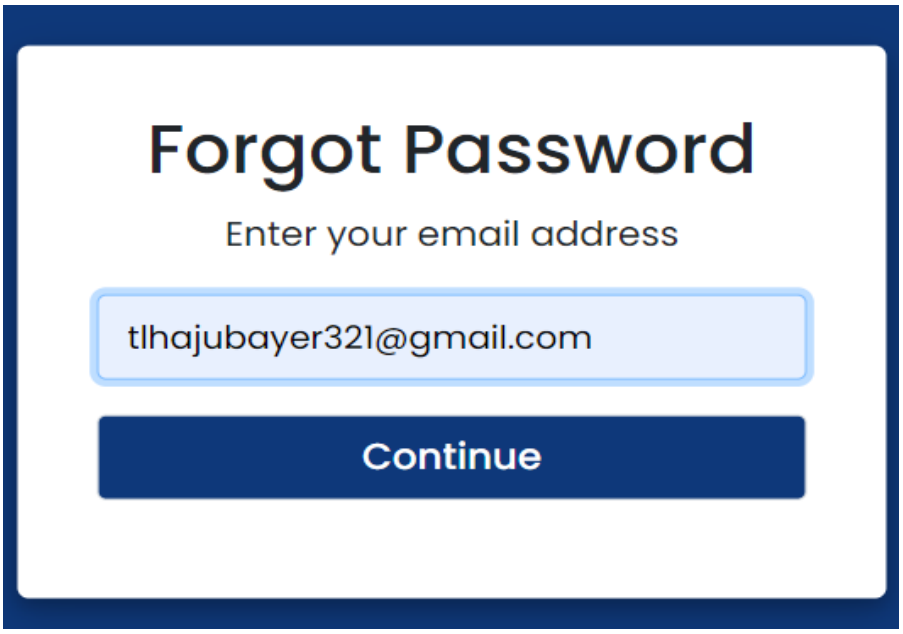


Fig 25: Forget Password

If the user forgets the password and wants to retrieve the account then they need to provide the registered email address.

Step 2-

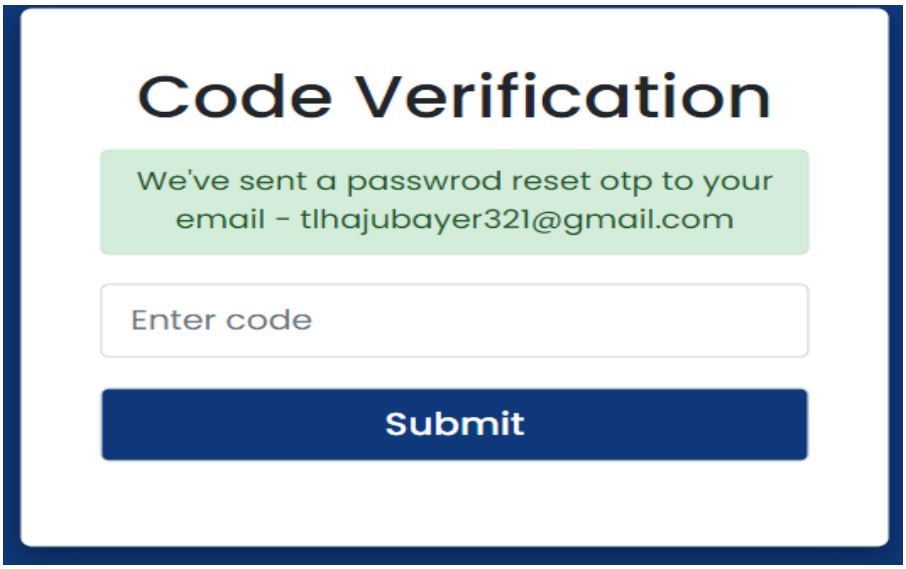


Fig 26: Code Verification

After providing the email address, a verification code will be sent to that email address and the user needs to enter the code and submit it to change the password.

Step 3-

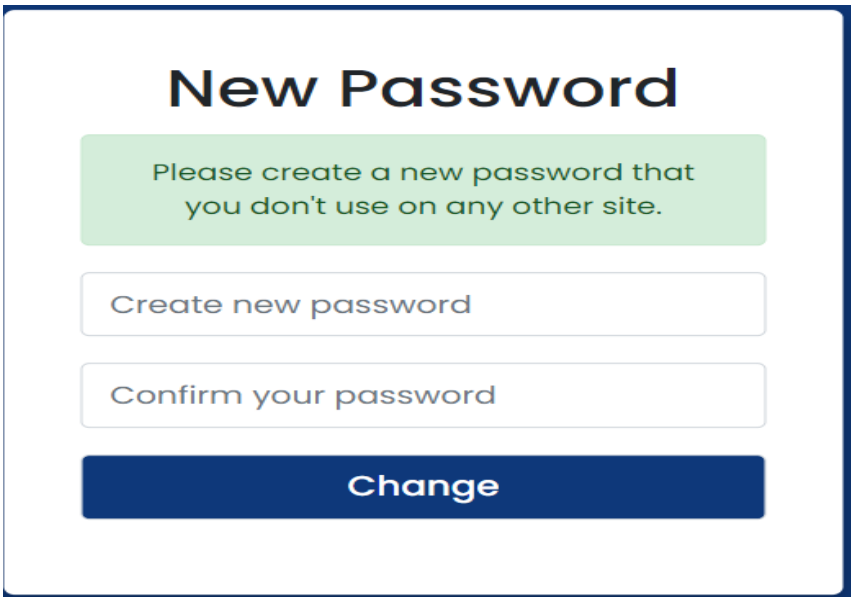


Fig 27: New Password

In this section, users can create a new password against their respective email addresses.

Step 4-

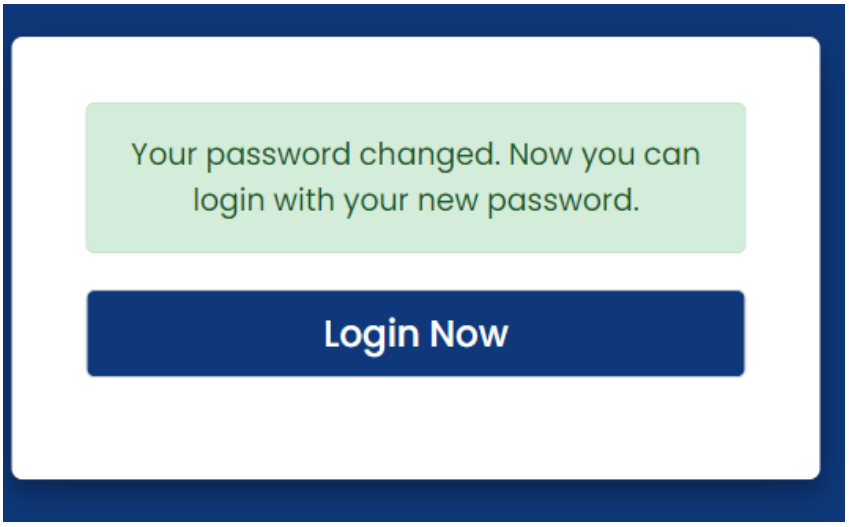


Fig 28: Confirmation

After creating the new password a confirmation message will be shown.

Blog-1:

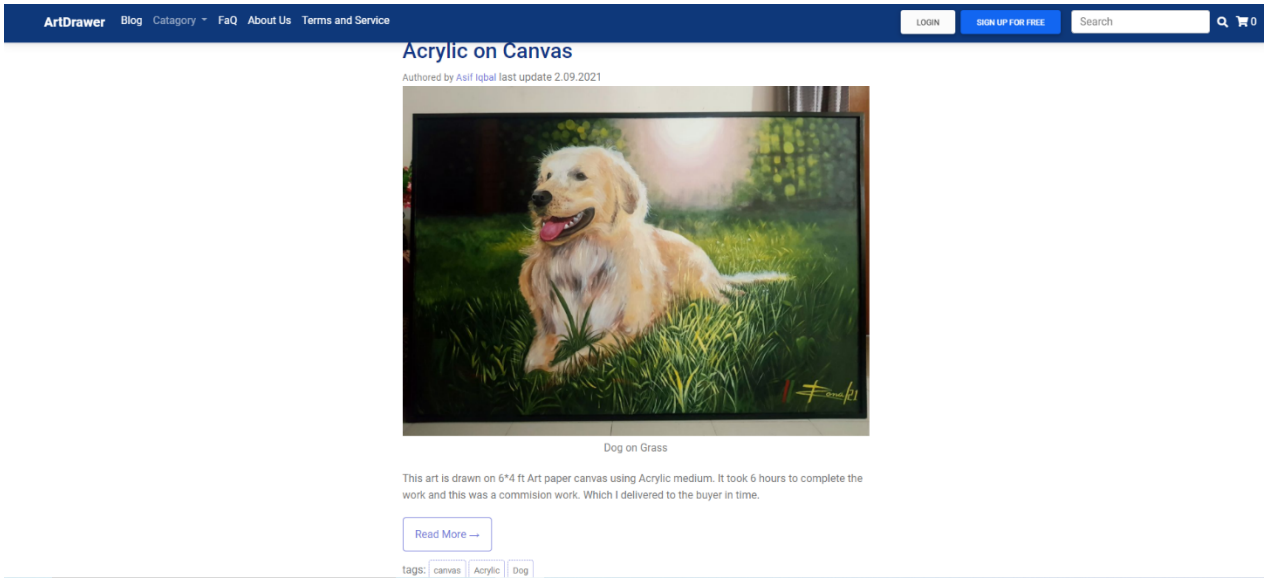


Fig 29: Blog 1

Blog-2:

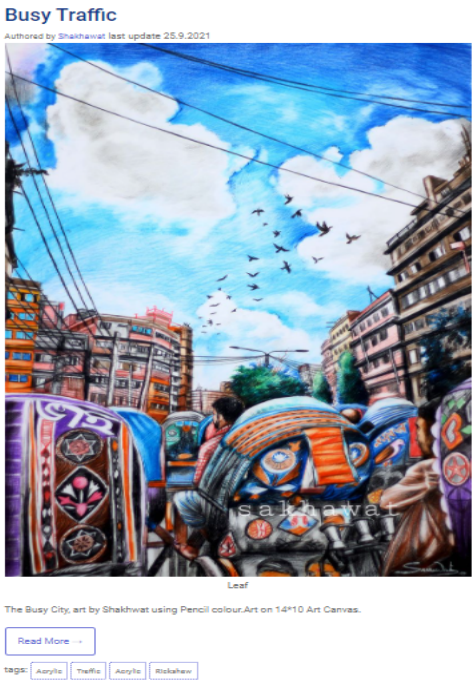


Fig 30: Blog 2

Blog-3:

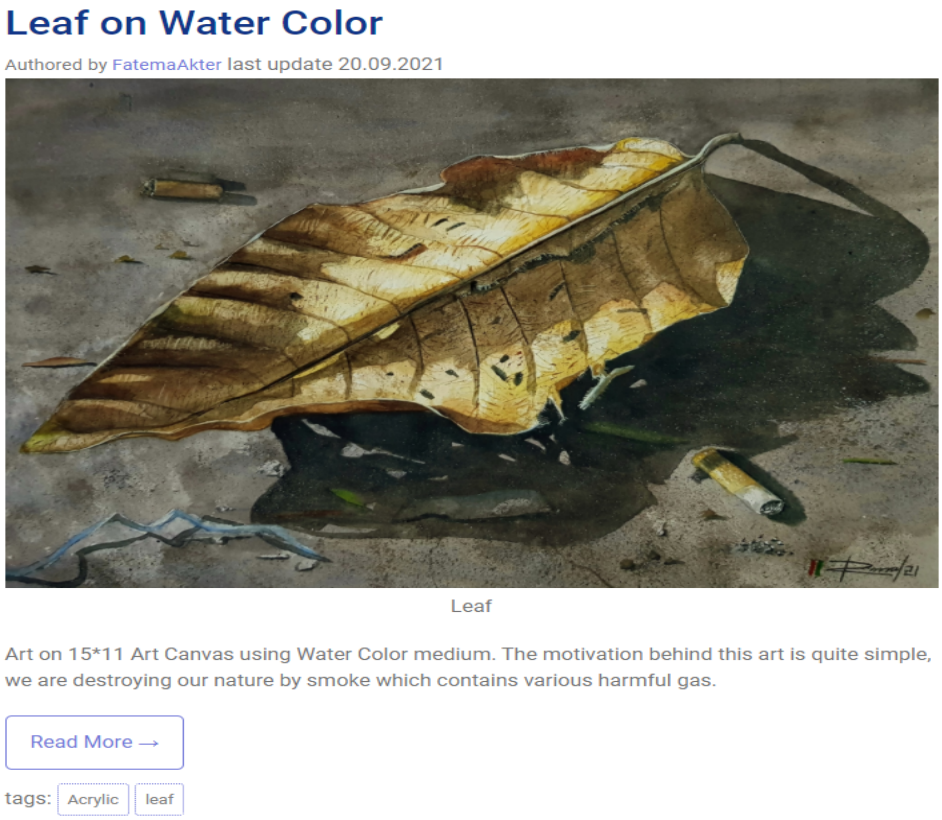


Fig 31: Blog 3

Fig 28, ,Fig 29 & Fig 30 contains information about the blog page. Multiple articles on various arts will be displayed on this page.

Category-All Product:

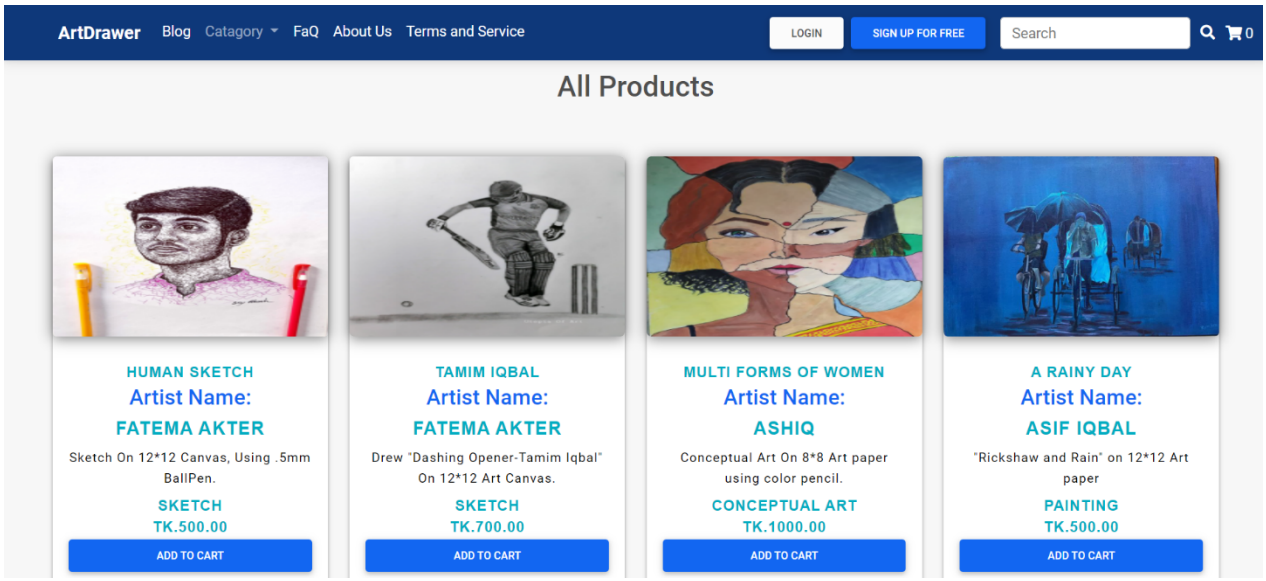


Fig 32: All products

More Products:

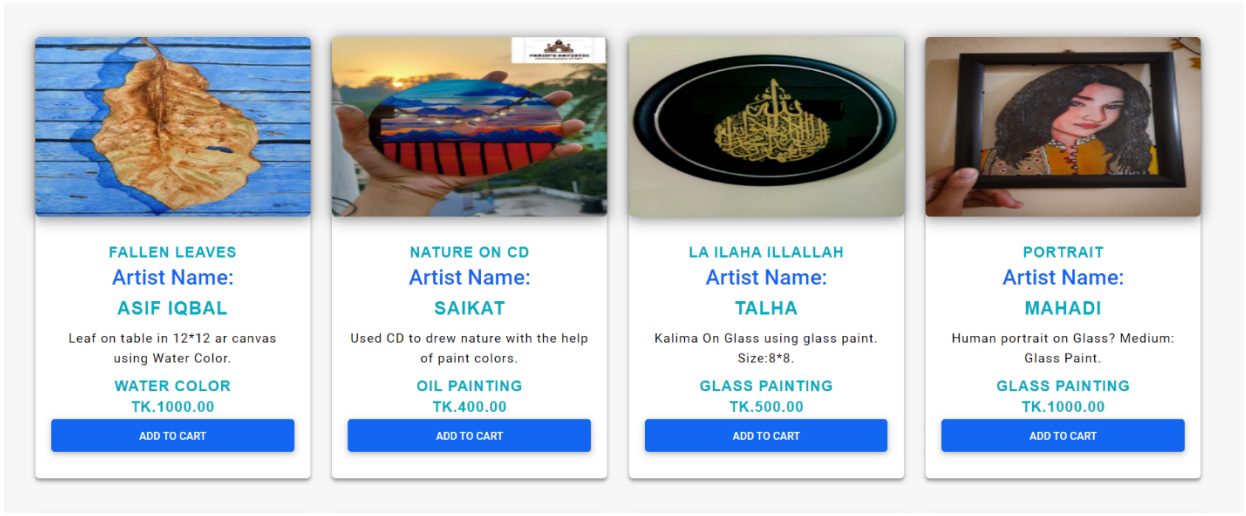


Fig 33: All products

Fig 32 & Fig 33 contains the products page of the ArtDrawer website. From this website, Onone can buy art according to their choice.

Acrylic Arts:

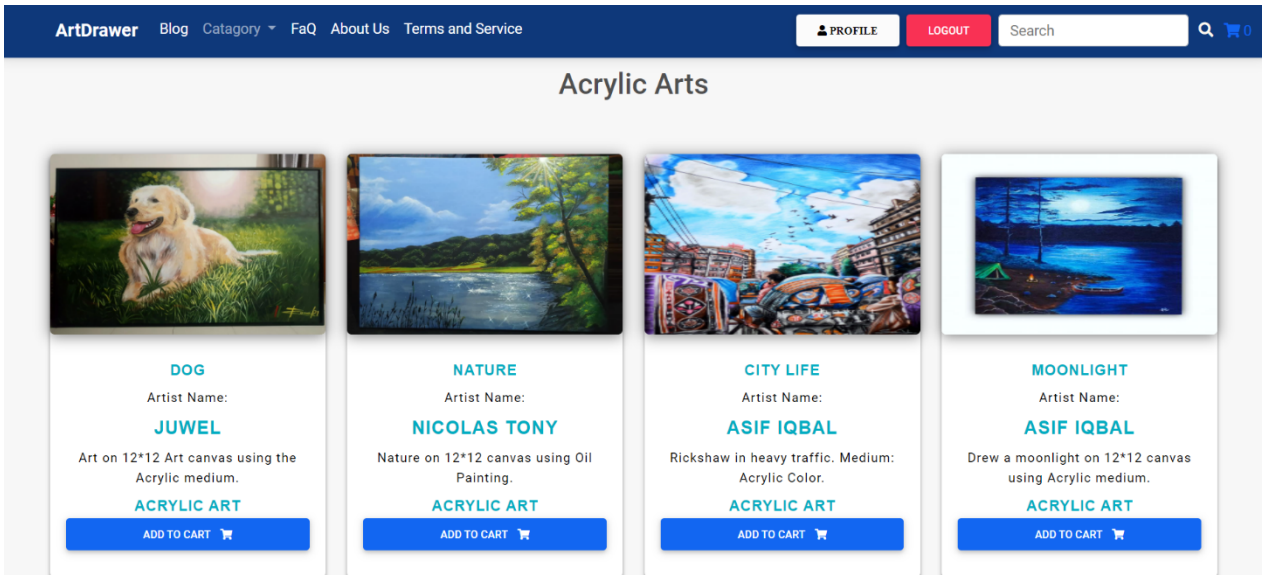


Fig 34: Acrylic Art

Acrylic Art is one of the categories of art mediums. On this page, art only the arts made by using acrylic colors will be displayed.

Illustration:

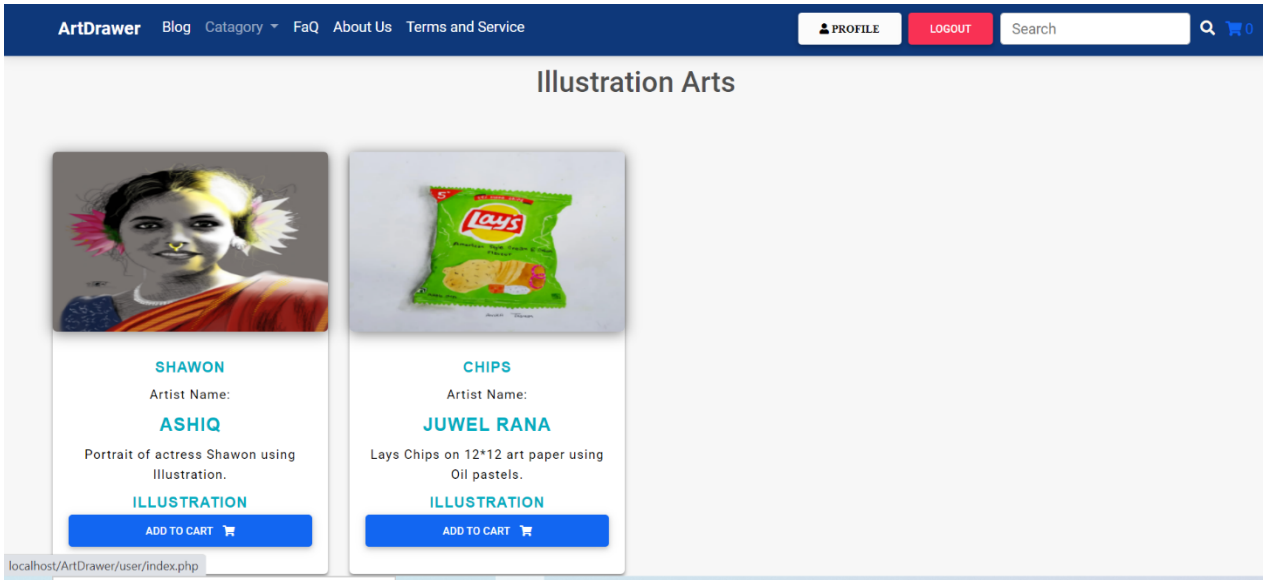


Fig 35: Illustration

On this Illustration page, all of the Illustration arts will be shown.

Conceptual Arts:

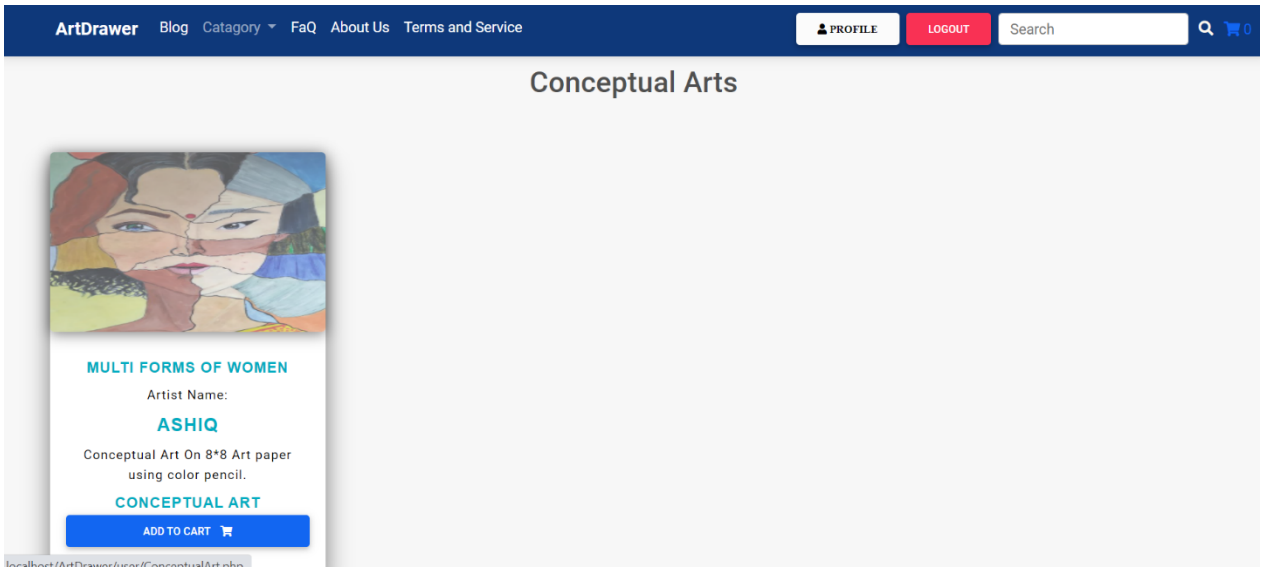


Fig 36: Conceptual Arts

Conceptual art is another category of art. Here in this section all of the conceptual arts will be displayed.

Oil Painting:

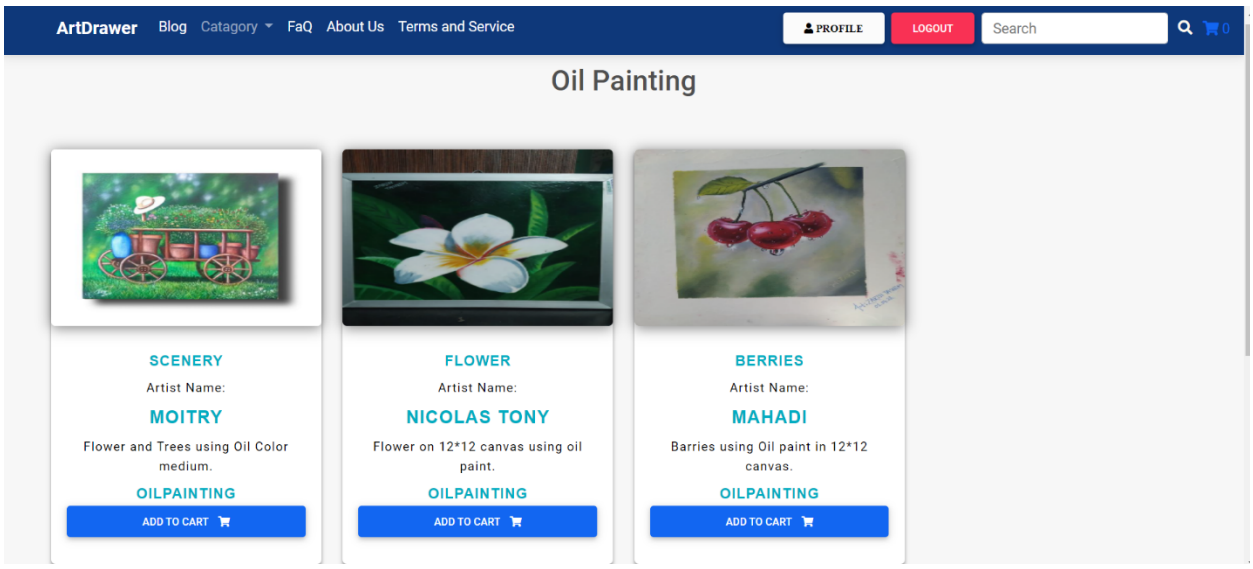


Fig 37: Oil Painting

People love to watch art that is made by using oil paints, So ArtDrawer has a specific category for Oil Paint.

Sketch:

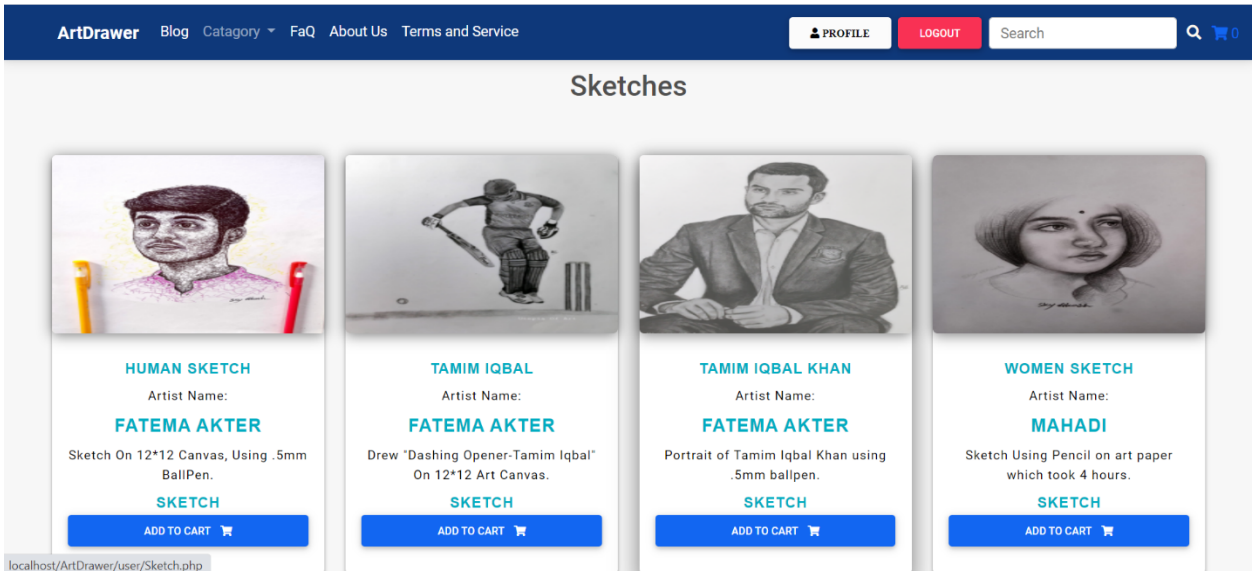


Fig 38: Sketch

The human sketch is another great example of fine arts. People love to see sketches that are made by using a pen or pencils.

Water Color:

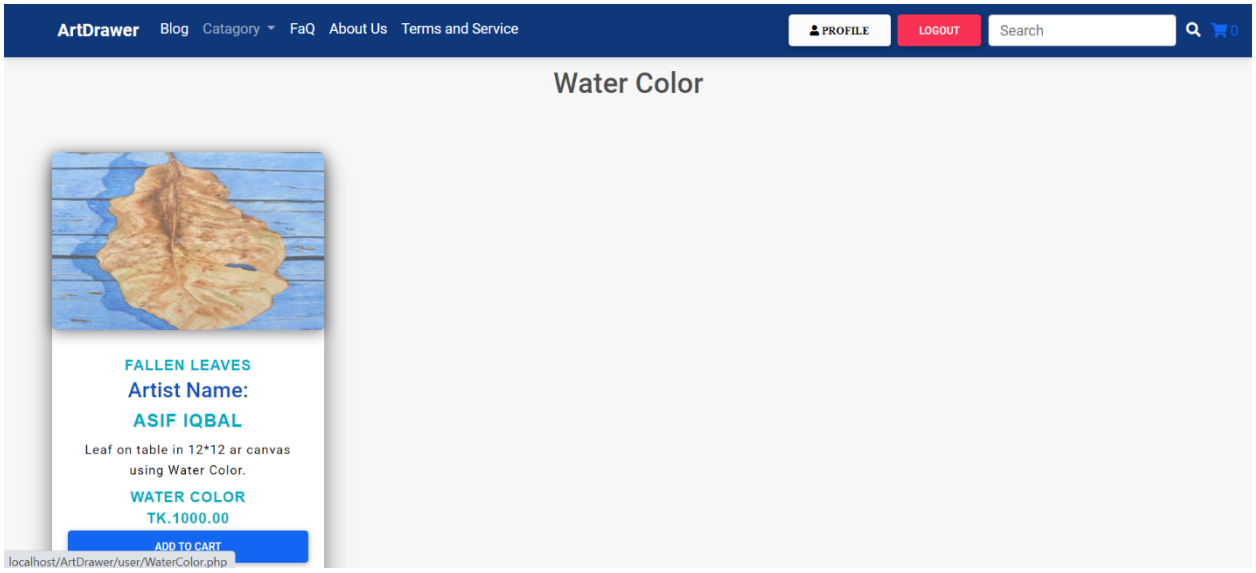


Fig 39: Water Color

Watercolor is another medium that is used for making different types of art. This section will display those arts which are made by using watercolors medium.

Creative Art:

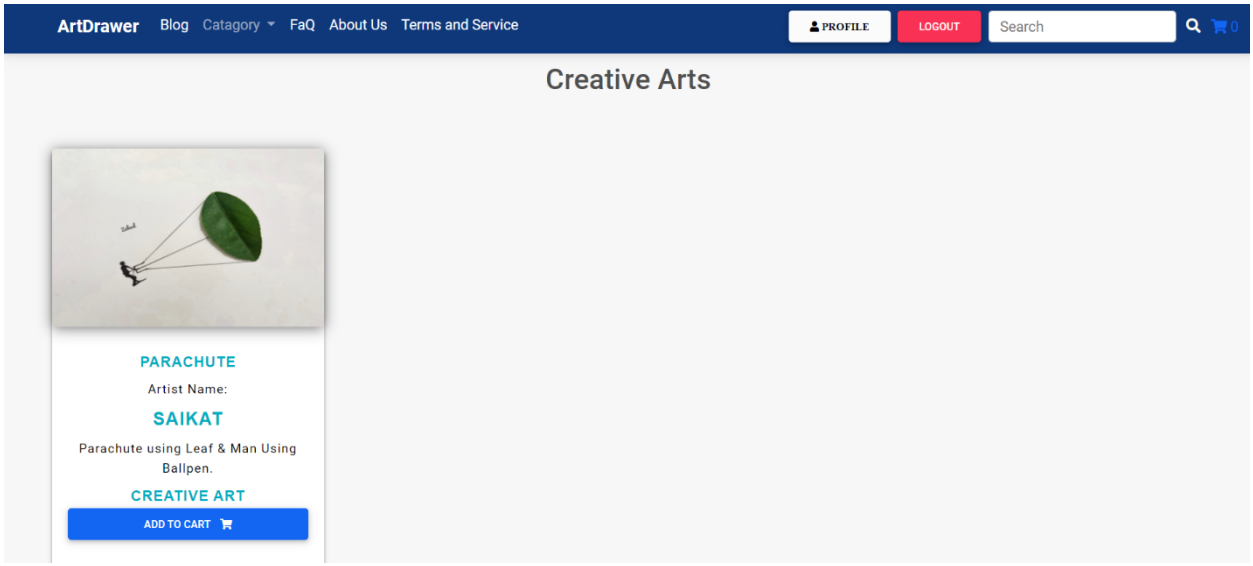


Fig 40: Creative Art

Creative art is another form of art where artists love to use various objects to demonstrate their creativity.

Painting:

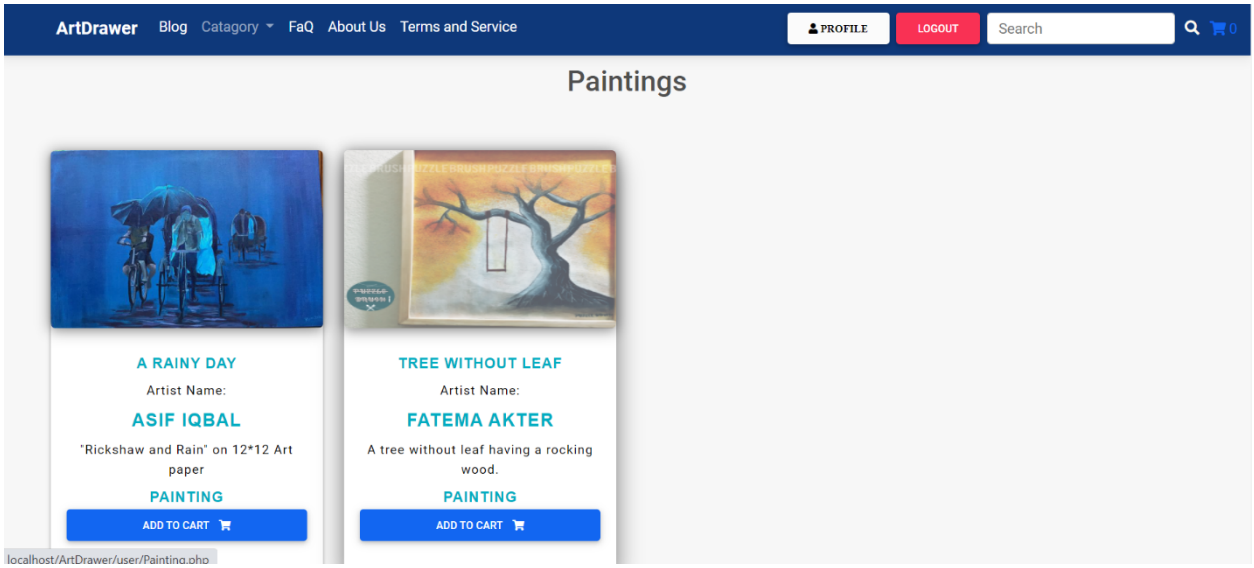


Fig 41: Paintings

There can be paintings as art. So this painting section is for containing those beautiful paintings by our artists.

Glass Painting:

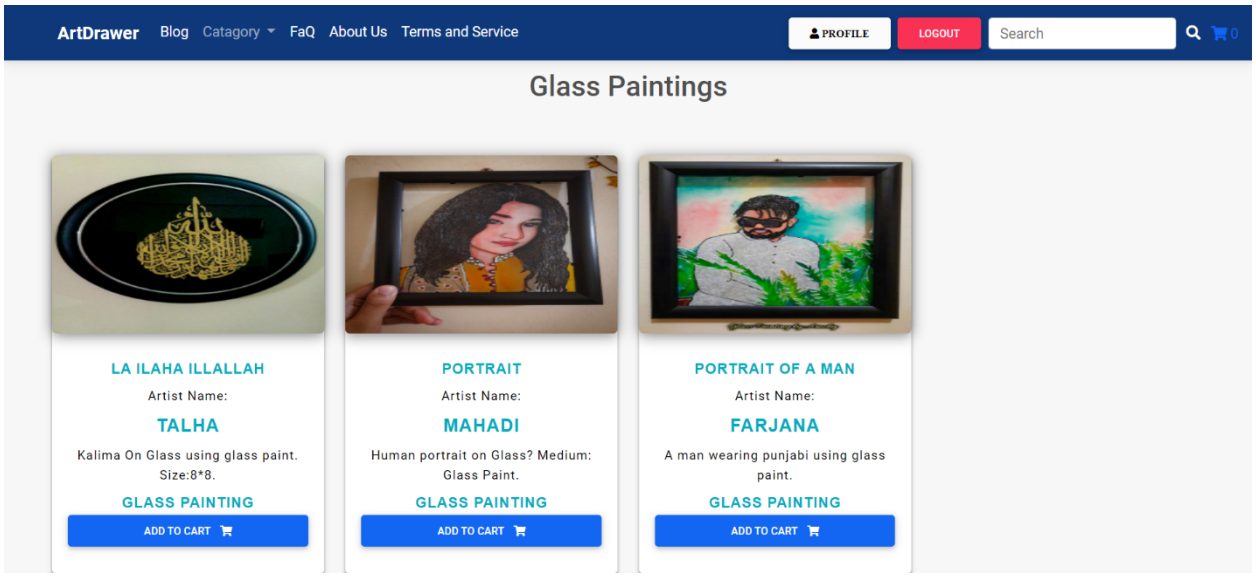


Fig 42:Glass Paint

Glass paint is another medium that gives scope to the artists to display arts over the Glass.

Frequently Ask Questions (FAQ):

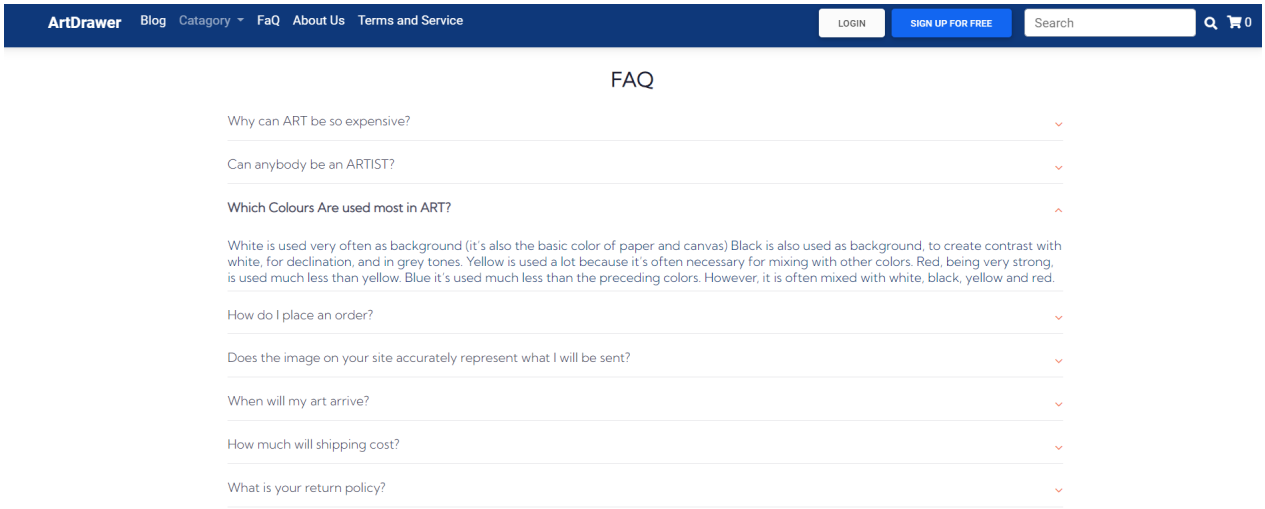


Fig 43: FaQ

On this page, here are some frequently asked questions by the users. The users will find the answers to these questions from this page.

About us:

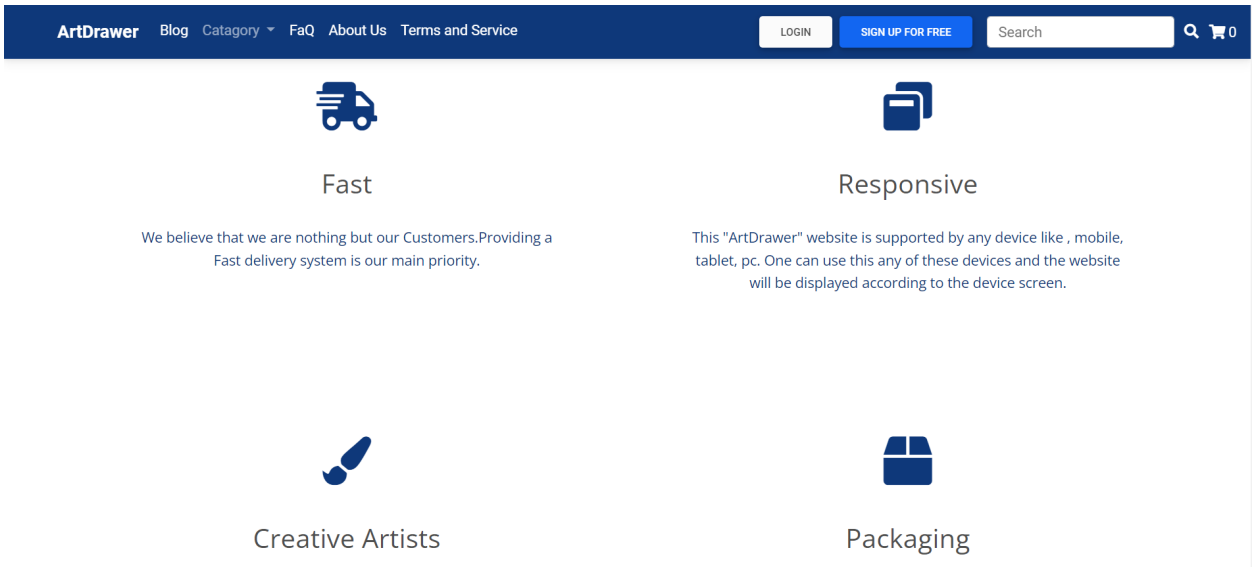


Fig 44: About Us

The About Us page contains a short description of ArtDrawer. From there one can easily find out everything about the ArtDrawer and our mission and vision.

Terms & Services:

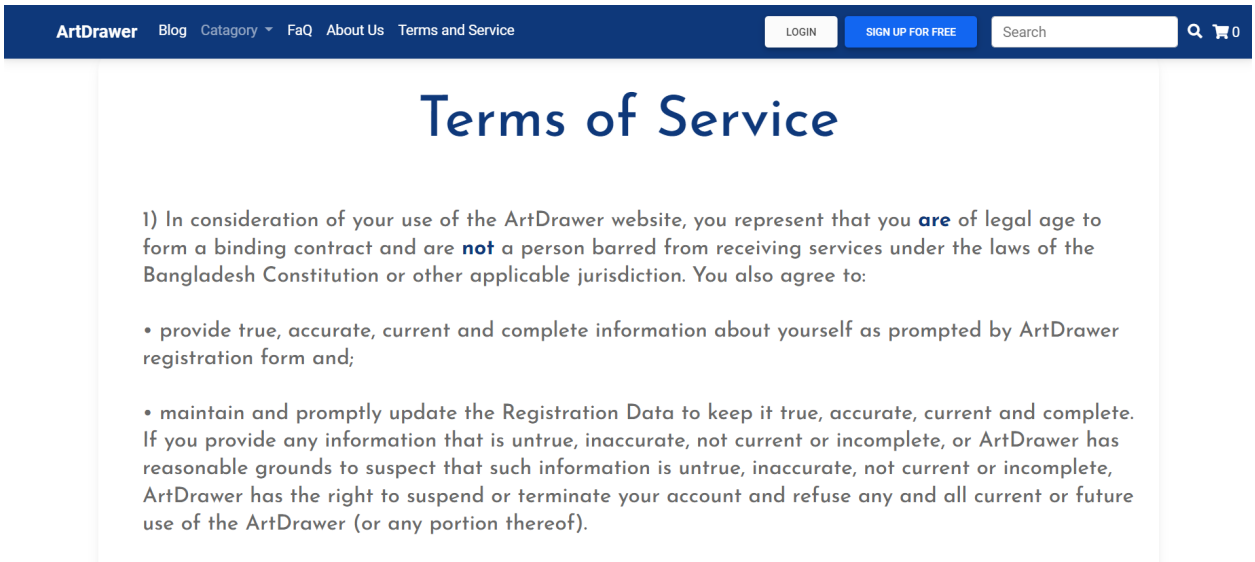


Fig 45: Terms and conditions

Terms & Services:

3) ArtDrawer provides **ONE** Id to each person. Trying to generate fake Id's are strictly **prohibited** and this act will result in **banning** of the person.

4) ArtDrawer is **copyrighted** and if any acts of **plagiarism** are discovered, legal action will be taken against the offender.

5) Flooding ArtDrawer with false requests and false complains is **strictly prohibited**

6) Registration Data and certain other information about you **is subject** to our Privacy Policy.

7) You expressly **understand** and **agree** that ArtDrawer and its subsidiaries, affiliates, officers, employees, agents, partners and licensors shall not be liable to you for any direct, indirect, incidental, special, consequential or exemplary damages, including, but not limited to, damages for loss of profits, goodwill, use, data or other intangible losses (even if ArtDrawer has been advised of the possibility of such damages), resulting from the use or the inability to use ArtDrawer.

8) You **agree** that ArtDrawer may **terminate** your access to ArtDrawer for violations of the TOS and/or requests by authorized law enforcement or other government agencies.

Fig 46: Terms and conditions

Fig 44 & Fig 45 contains some terms and conditions of ArtDrawers.

Artist Profile:

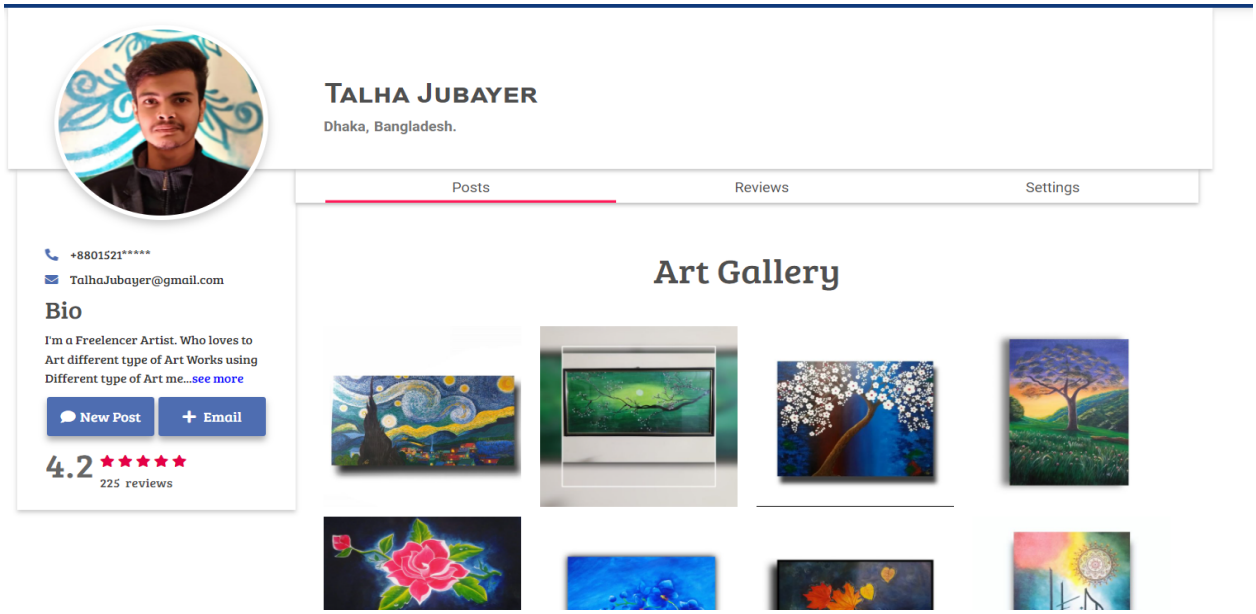


Fig 47: Artist Profile

Artist Profile Contains the detailed information of the artist and art gallery.

Add New Post:

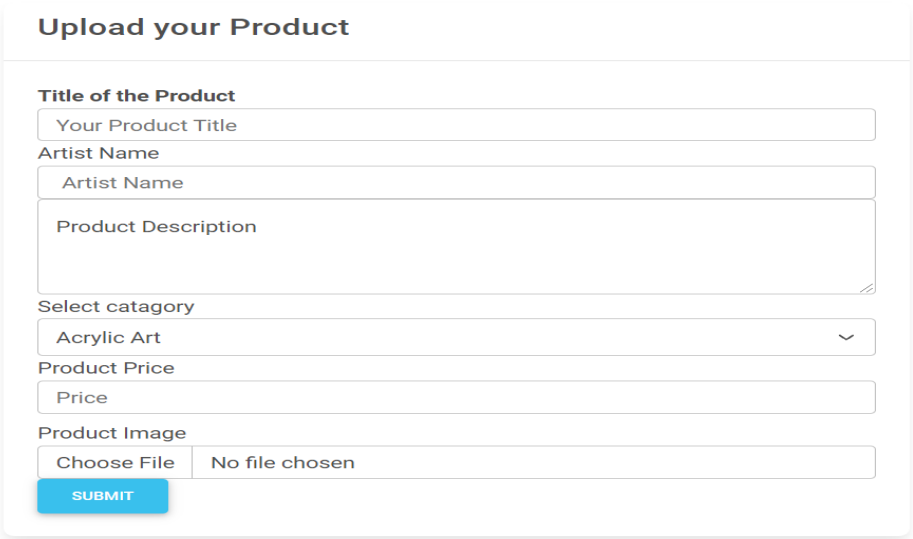


Fig 48: Add new Post

Add new post is a feature from where artists can make a new post of their art product.

Update Profile:

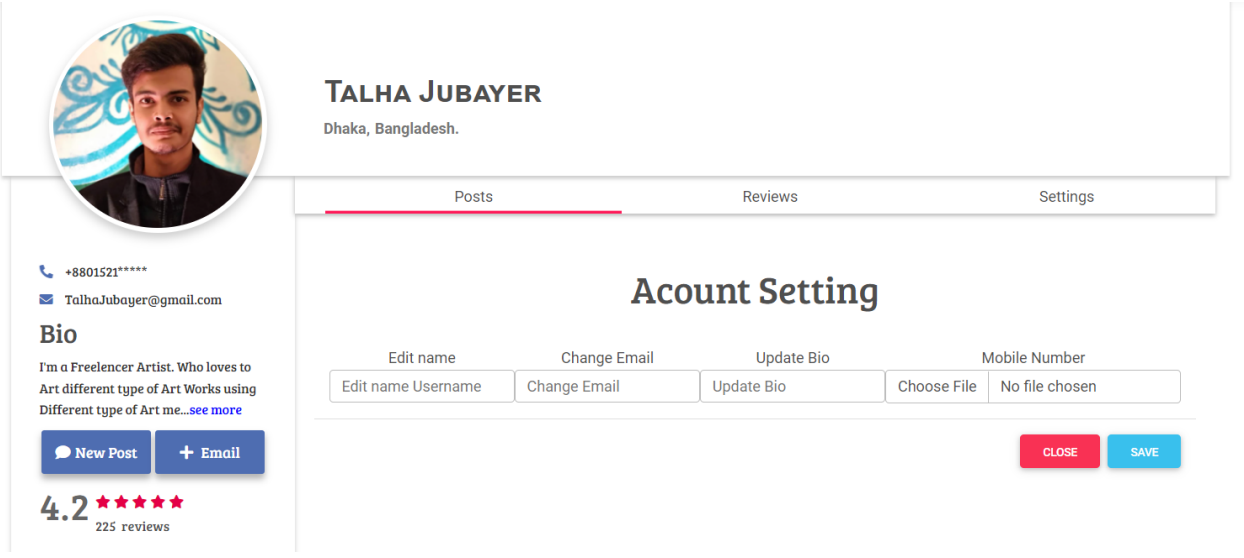


Fig 49:Update Profile

Users can update their profiles from this option.

Add to Cart:

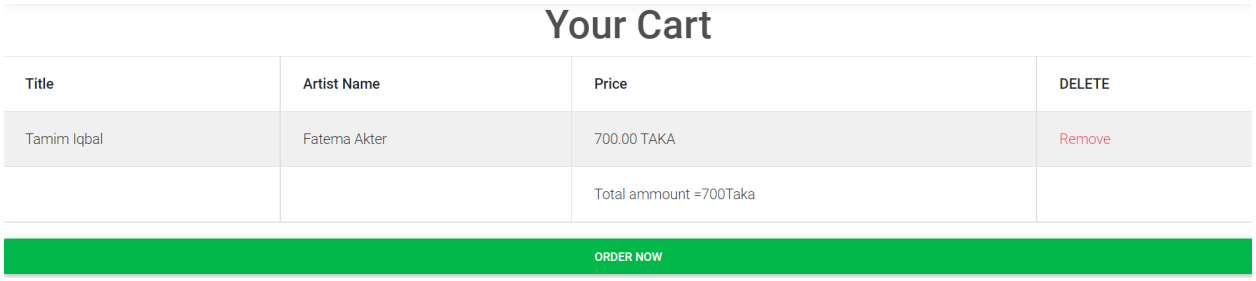


Fig 50: Cart list

Users can add items into their cart and see carted items in this section. They can also remove a product if they are not willing to buy that product.

Order Now:

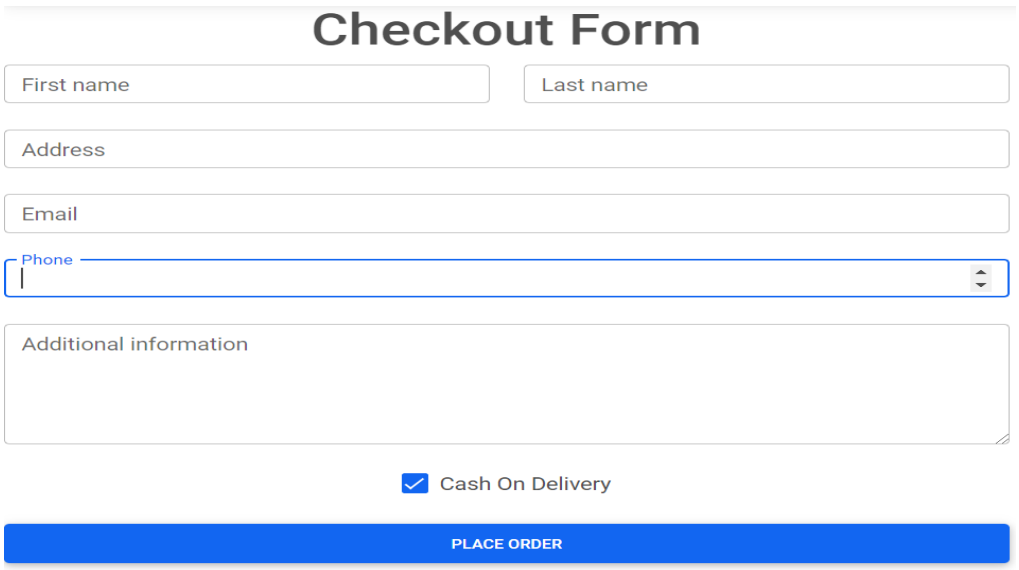


Fig 51: Checkout form

This form is for checkout purposes, this form will store the detailed information of the users if they wish to buy products.

If Error Occurred (User):

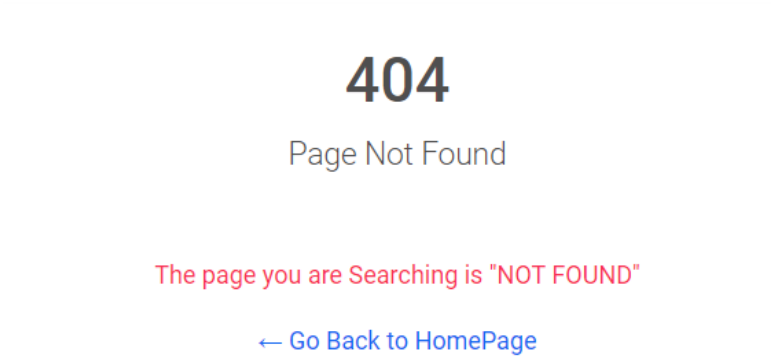


Fig 52: 404 Error

If the user tries to find a page that doesn't exist in the system, this error message will be shown.

Admin

Login:

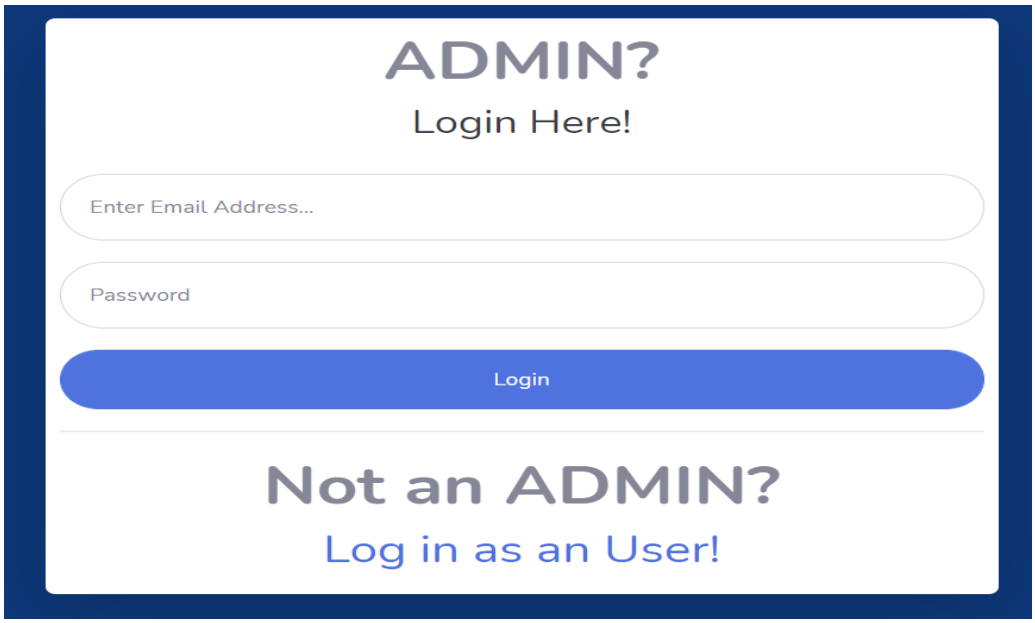


Fig 53: Admin Login

By using this login system, Admin can get into the dashboard.

Admin DashBoard:

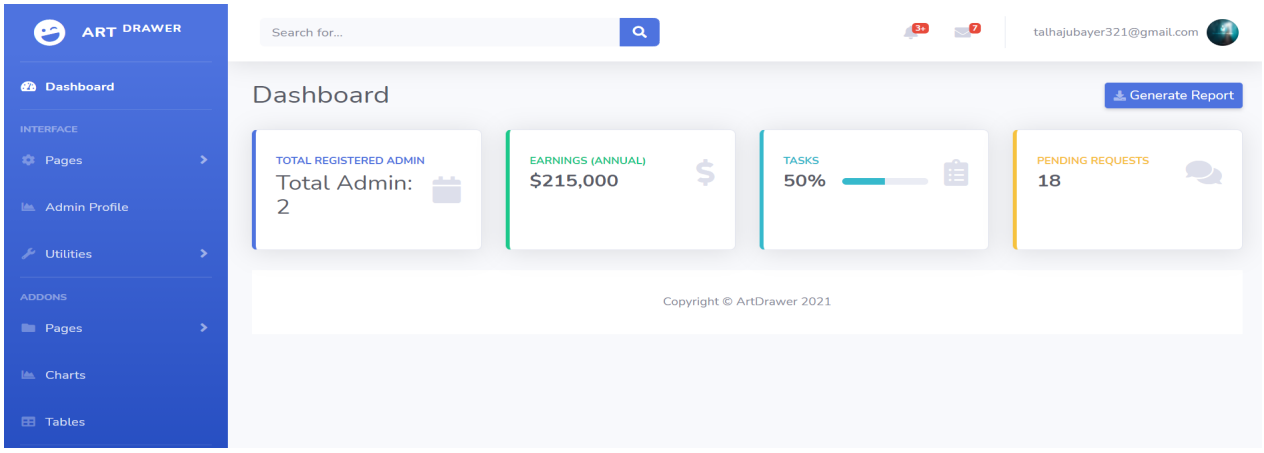


Fig 54: Admin Dashboard

This is the admin dashboard having multiple functionalities.

User List:

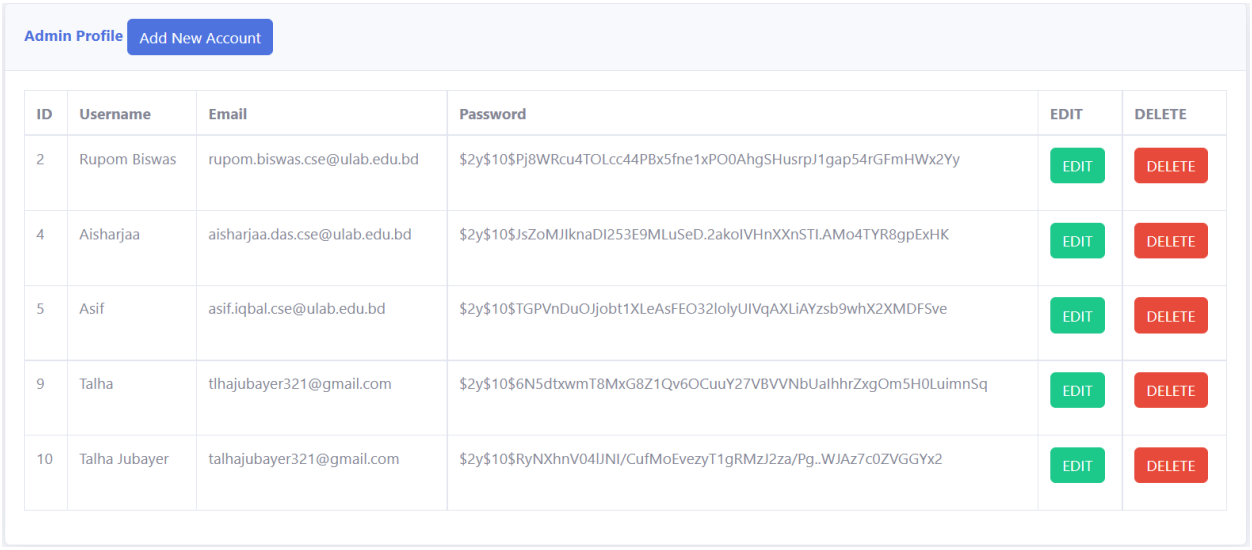


Fig 55: Cart list

Admin can view the registered user list of the system. And remove the user from the system.

Update Admin Data:

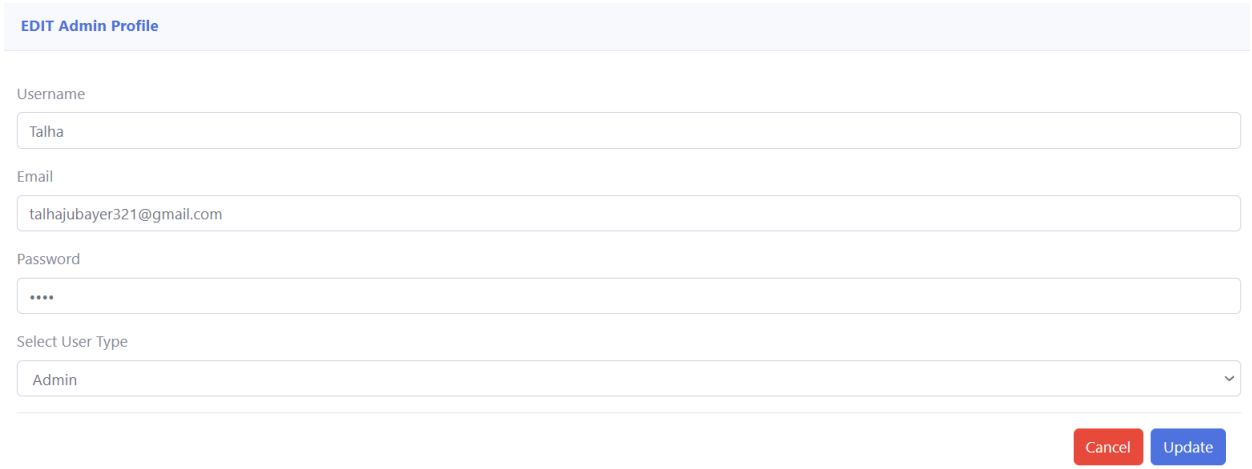


Fig 56: Update

Admin can update their name, email, and passwords if they wish to change those data.

Add new User (Both Admin and Artist/Customer):

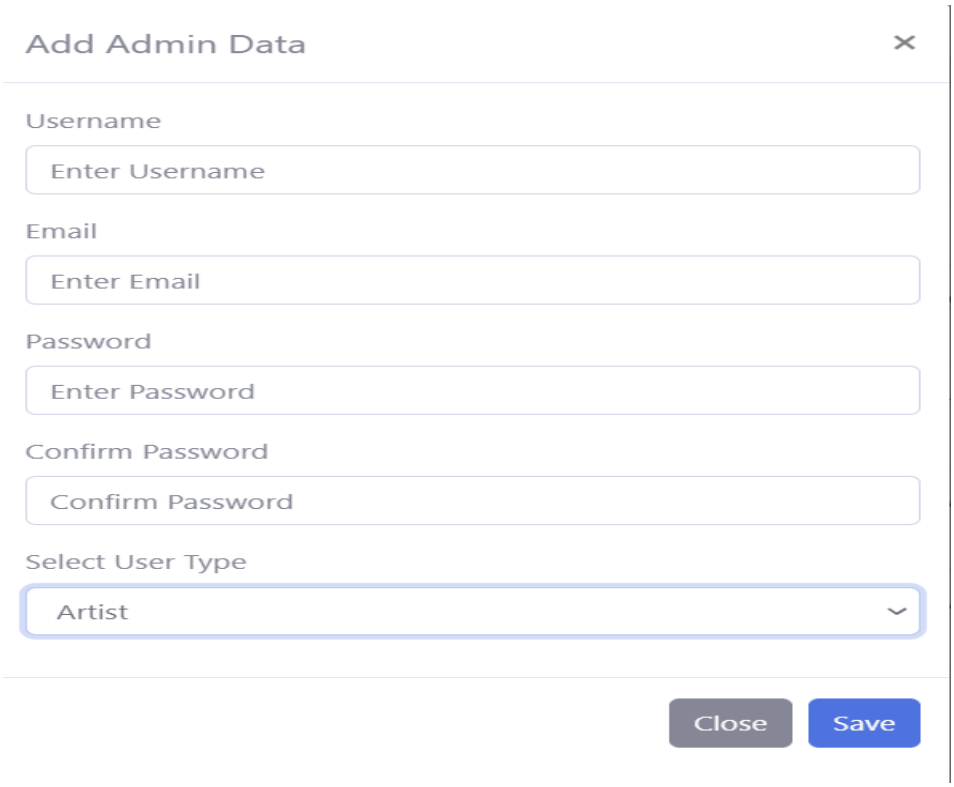


Fig 57:Add Users

Admin can add new users to the system from this functionality.

Add New Post:

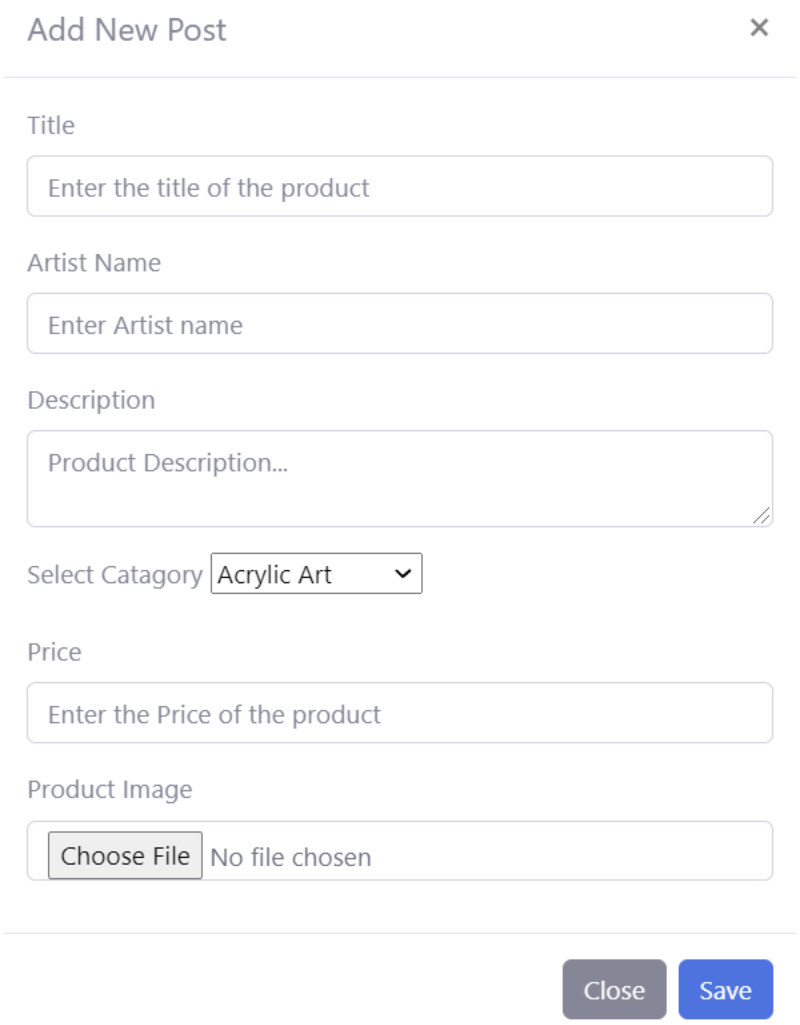


Fig 58:Add new post

Admin can also add a new post to the website, whenever they want to.

View Post:

ID	Title	Artist name	Description	Catagory	Price	Product Image	Status	Decline	Pending	Approve
1	Human Sketch	Fatema Akter	Sketch On 12*12 Canvas, Using .5mm BallPen.	Sketch	500.00		1	Decline	Pending	Approve
2	Tamim Iqbal	Fatema Akter	Drew "Dashing Opener-Tamim Iqbal" On 12*12 Art Canvas.	Sketch	700.00		1	Decline	Pending	Approve
3	Multi forms of Women	Ashiq	Conceptual Art On 8*8 Art paper using color pencil.	Conceptual Art	1000.00		1	Decline	Pending	Approve
4	A Rainy Day	Asif Iqbal	"Rickshaw and Rain" on 12*12 Art paper	Painting	500.00		1	Decline	Pending	Approve

Fig 59: Cart list

View More Post:

5	Shawon	Ashiq	Portrait of actress Shawon using Illustration.	Illustration	1000.00		2	Decline	Pending	Approve
6	Tamim Iqbal Khan	Fatema Akter	Portrait of Tamim Iqbal Khan using .5mm ballpen.	Sketch	1000.00		0	Decline	Pending	Approve
7	Dog	Juwel	Art on 12*12 Art canvas using the Acrylic medium.	Acrylic Art	1000.00		2	Decline	Pending	Approve
8	Nature	Nicolas Tony	Nature on 12*12 canvas using Oil Painting.	Acrylic Art	500.00		1	Decline	Pending	Approve

Fig 60: Cart list

9	Women Sketch	Mahadi	Sketch Using Pencil on art paper which took 4 hours.	Sketch	1000.00		1	Decline	Pending	Approve
10	Scenery	Moitry	Flower and Trees using Oil Color medium.	OilPainting	500.00		1	Decline	Pending	Approve
11	City Life	Asif Iqbal	Rickshaw in heavy traffic. Medium: Acrylic Color.	Acrylic Art	500.00		1	Decline	Pending	Approve
12	Chips	Juwel Rana	Lays Chips on 12*12 art paper using Oil pastels.	Illustration	300.00		1	Decline	Pending	Approve

Fig 61: Cart list

In Fig 53, Fig 54 & Fig 55, Admins can view the posts that were uploaded by the artists. And only the admin can approve or decline posts from the website.

If Error Occurred (Admin):

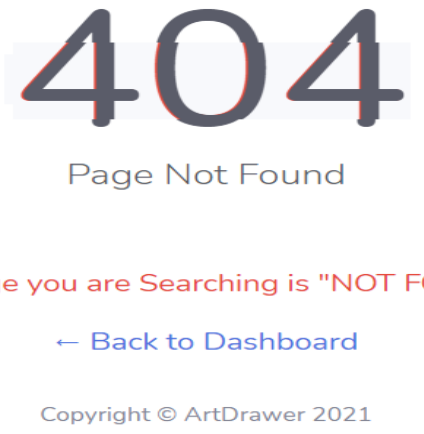


Fig 62: Error

This error message will be displayed whenever the admin tries to find a page that doesn't exist in the system.

5.3 Testing Implementation

Software testing is an examination that is carried out to offer information to stakeholders regarding the quality of the product or service being tested. Software testing can also give a corporation an objective, unbiased picture of the software, allowing them to grasp and comprehend the risks associated with software implementation. The process of executing a program or application to detect software bugs is known as testing (errors or other defects). Software testing is the process of evaluating one or more qualities of interest by executing a software component or system component. These features, in general, give an indication of which component or system under test is functional.

Testing focused on some aspects, those are:

1. whether the system satisfies the requirements that motivated its conception and design
2. Is the system capable of responding to a variety of inputs?
3. accomplishes its functions in a reasonable amount of time and is usable.
4. can be deployed and run in its intended surroundings, and produces the desired general outcome for its stakeholders.

5.4 Test Results and Reports

Test Cases:

A test case is a set of instructions and conditions used to determine whether a system is meeting the requirements or not.

A TEST CASE is a series of actions performed to validate a specific feature or functionality of your software application. A Test Case is a collection of test steps, test data, preconditions, and postconditions created for a specific test scenario to validate any requirement. The test case includes specific variables or conditions that a testing engineer can use to compare expected and actual results to determine whether a software product is functioning according to the customer's requirements.

I have planned and implemented a few test cases to ensure that my website is meeting functional requirements.

Below are the test cases for the Art Exhibition web application (ArtDrawer).

TEST MODULE	TEST CASE	EXPECTED RESULT	TEST RESULT
USERS	Provide a valid email for signup	Successfully registered to the system	PASS
USERS	Providing a fake or invalid email address	Cannot register into the system. No OTP was send	PASS
USERS	Password not matched	Cannot register	PASS
USERS	Wrong OTP	Cannot log in to the website	PASS
USERS	Password matched and valid OTP	Login to the website	PASS
USERS	Add to cart	Carted items Shown	PASS
USERS	Check Cart Items	List of the carted items	PASS
USERS	Make an order	Order Items	PASS

Table 1: Unit testing of User

TEST MODULE	TEST CASE	EXPECTED RESULT	TEST RESULT
ADMIN	Admin registration	Admin can be added only by another Admin	FAIL
ADMIN	Providing an invalid email or password	Display Error	PASS
ADMIN	Providing authentic data	Into the Dashboard	PASS
ADMIN	Edit personal info and change password	Update Data from database	PASS
ADMIN	Add new user or admin into the system	New admin/user added	PASS
ADMIN	Add New Post to the website.	Post Added	PASS
ADMIN	Approve or Decline User's post	Post Approved or Post-Declined	PASS
ADMINS	View Password of the User	Data Security	FAIL

Table 2: Unit testing For Admin

6. IMPACT ON SOCIETY, ENVIRONMENT, AND SUSTAINABILITY

6.1 Impact on Society

By using this website, we can change the view of our people towards the arts. This web application can be a great income source for the unrecognized artists of our country. They can also get recognition and appreciation from the people by demonstrating their artworks on this art exhibition platform. People can find various pieces of art under one roof through this website. Artists can get multiple fixed jobs all around the world or do freelancing works by using ArtDrawer.

6.2 Impact on Environment

Arts can be used to make the environment clean and suitable for the upcoming generation. There are lots of artworks based on the environmental change that is happening all over the world. Our artists can make different artworks to increase awareness of environmental change which can be dangerous for human beings. Where many sculptures were made from various non-reusable harmful materials like plastic, polythene to raise awareness among the people about the harmful effects of those materials. By this, we can reduce the use of plastic and other materials which are injurious to the environment. On the other hand, we know that art canvases are paper which is made by trees. So we must pay attention to find an alternative way to make other mediums for

our artists so that they can demonstrate their imagination with the help of colors. Also, the colors that are used to make artworks should be eco-friendly.

6.3 Ethical Aspects

As ArtDrawer is a website to showcase the creativity of creative artists, ethical aspects are very crucial for this website. Every artist of this should be ethical on their own. They must follow ethical aspects to make their fine arts by providing their customers good quality of their product. In our case, we are committed to our customers to provide them with good quality products. This could be done by approving or declining the products from the websites. We believe that “We are nothing but our Customers”. So we would love to take any kind of steps to give our customers and artists a better environment by maintaining ethical values. On the product page, we used the copyright claim of ArtDrawer so that one can’t easily take images from the website. We made a secured web system where one must verify his/her email address via OTP. We integrated hashing functions to secure the passwords that were given by the users. Those passwords can’t be seen by others or the admins. Besides, there can be loopholes in our system. Hackers could try to find those loopholes and steal data from the databases. We will try to monitor the activities and maintain the website as per the requirements. We will appreciate it if anyone comes forward to find the security issue and help us to resolve the issue.

6.4 Sustainability Plan

Sustainability is a notion associated with the production of products, goods, and services that include meeting our current demands without affecting future generations' ability to meet their own. The concept of sustainability acknowledges that the environment is a finite resource. As a result, it is critical to use and maintain the environment and its resources intelligently for the benefit of the Earth, our environment, humanity, and all living creatures. We ArtDrawer wished to have a safe sustainable world where sustainability enhances the quality of our lives by protecting our ecosystem and conserving natural resources for future generations. In the business world, sustainability is associated with a company's systematic perspective, which considers everything from manufacturing to transportation to customer service. Going green and sustainable is not only good for the company; it also maximizes the long-term benefits of an environmental focus. So ArtDrawer encourages every user of the system to use eco-friendly products to make our world a better place.

CONCLUSION AND FUTURE SCOPE

7.1 Discussion and Conclusion

There are a lot of art exhibitions that take place around the country every year. But new artists rarely get the opportunity to showcase their arts to the public. So ArtDrawer can be a great opportunity for the new talented artists of our country. By using this website, they can easily reach the people who love artworks. Where on the other hand, anyone who wished to have art products in their collection can easily find their desired arts from the website. So Art Drawer could be a great platform to bind the artist and the art-loving community. In addition, by selling their art products artists can make a profit and make their economical conditions better. This website could turn into a great income source for the underprivileged artists of our country. Besides all of those aspects, this website is licensed under "**creativecommon.org**". So any kind of use of images and other data outside of this website is strictly prohibited.

7.2 Scope for Further Developments

For now, Artdrawer is only a website. We can make a mobile application to reach people easily. Because most of us use smartphones over the computer and spend hours using various types of applications. Although Artdrawer has a website, making an application of it can be a new window for art lovers. So making a user-friendly, reliable, easier, secured mobile application can be made having some extra features. There can be a feature called “Hire an Artist”. By that feature, users could easily hire respective artists according to the category of the art mediums. There can be another feature for making “Sketches” of their own.

“With a warm welcome to the ArtDrawer, I’m concluding this report here.”

References

1. https://www.art.com/
2. https://artsandculture.google.com/
3. https://www.saatchiart.com/
4. https://www.artsy.net/
5. https://www.etsy.com/
6. Software Engineering, Ninth Edition, Ian Sommerville
7. Roger S. Pressman_ Bruce R. Maxin - Software Engineering_ A Practitioner's Approach-McGraw-Hill Education (2014)
8. https://www.w3schools.com/
9. https://www.fundaofwebit.com/
10. https://codepen.io/
11. https://www.tutorialspoint.com/index.html
12. https://mdbootstrap.com/
13. https://getbootstrap.com/
14. https://www.facebook.com/cotmofficials
15. https://www.facebook.com/groups/257832262010200
16. https://www.guru99.com/