# BCDV – 1011
# DESIGN PATTERNS FOR BLOCKCHAIN

**Team Members**

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|---|---|
| Feiya Wang | 101036160 |
| Muzammil | 101281406 |
| Neraj Obla KumarBabu | 101275194 |
| Patterson Thamba | 101280376 |
| Vidyavathy Venkataseshadri | 101266772 |

# Requirements Analysis for Arts Provenance Project

## PROBLEM

For artists, it is difficult to connect dealers and collectors efficiently in terms of selling their products, and even if they managed to connect with dealers and collectors, the parties on the other side may not be interested in buying the artist's product. Selling the artwork to the next owner may take a long time due to the layers of the middlemen. These intermediaries may not be honest and may switch the original work and sell counterfeit artwork instead. The entire process is not transparent and efficient. It is common to see the artworks misplaced, marked with inaccurate information, and become untraceable during transfers.

## GOAL

The main goal of the project is to make sure that the artwork is original and the person who is selling it is the rightful owner, previous history of ownership is needed to ensure the art is original. Currently, only the most famous artists' paintings are provided with this kind of information.

Blockchain is a technology that can provide opportunities to make the process efficient, transparent, and reliable. Our blockchain-based, decentralized system for artwork verification provides instant and immutable information for each of the artwork including the artist's name, year, and a one-way hash of the content that can be used to retrieve and verify the information.

This project is based on ERC721-NFT tokens. These NFT tokens can be used to represent the digital ownership of the artwork. When the owner of artwork issues a token-ID, along with the original artist's information, the token can be used to track the entire transaction records when the artwork ownership is transferred to its current owner. Moreover, the other attributes that can also be attached to the token for tracing are the artist's info, the painting title or theme, detailed description, and a sales agreement.

## STAKEHOLDERS

This project serves various parties such as artists, art enthusiasts, professional buyers, art agencies, and allows the parties to retrieve and share the real records of certain artwork directly with others in a secure, timely and tamper-resistant way.

## STATE DATA

- The token-ID of the artwork and history of ownership is being tracked.
- Title, Date, Description, Price and an image of the artwork.
- The record of ownership is being generated

## RESTRICTIONS

- If a customer wants the art piece immediately there will be some restrictions on geography.

- If an agency or a customer failed or delayed paying the full price for the art there will be consequences.
- Without a background verification one cannot sell or buy the artwork due to fraudulent activities.

## Expectation

- The betting price for everyone must be secure.
- To access the token code of the art piece multi-factored authentication must be imposed to avoid any kind of breaches.