Project Documentation: ArtShare

# Problem Definition:

* ArtShare aims to integrate the worlds of Art and the Stock market by allowing investors to buy and sell shares of coveted art pieces.
* The problem faced while investing in high end art pieces is that a lot of capital is required to buy an art piece.
* Similarly, a problem faced by smaller artists is not having a large enough audience of enthusiasts to showcase their art to.
* With ArtShare, we aim to provide the opportunity to invest in art directly.

# Existing System

* Currently, art investment relies heavily on auction houses, art galleries and museums.
* In these places, an art piece is auctioned off to the highest bidder.
* The money is then held in an escrow until the transaction is completed.
* The art piece is then delivered to the buyer

# Need for computerization

* Art investment has historically been confined only to art galleries, auction houses and museums.
* An interactive online platform will help make it accessible to a larger audience

Scope of proposed system:

* Trading mechanism: The rules and regulations for performing a trade
* Security and authentication: Only registered users will be able to operate the system
* Fractional Ownership: Investors could buy fractions of high-value artworks, enabling them to diversify their art portfolios with smaller investments.
* Market Transparency and Security: Blockchain technology could provide transparency in art transactions.
* Global Access and Cultural Exchange: A digital art stock market could enable global access to artworks.

# Fact finding techniques:

* Observation: Researching the requirements of the system based on observations.
* Brainstorming: Brainstorming is a creative problem-solving technique used to generate many ideas in a short amount of time.
* Prototyping: Creating working models of system which can later be improved on.

# Platform:

Hardware:

* Desktop
* Local host

Software:

* Html
* Javascript
* Css
* Php (version 8+)
* Java (version 3+)

# Analysis Specification:

Entity-Relationship Diagram:

# Data Dictionaries:

**User**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Data type** | **Constraint** | **Description** |
| User\_id | Int | Primary Key | - |
| Status | char | Not null | Codified value for status of user account |
| Type | char | Not null | Type of account (Artist/Investor) |
| DOB | date | Not null | Date of birth |
| Address | text | Not null | - |
| DOR | date | Not null | Date of registration |
| Contact | text | Not null | Contact information |

**Artist**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Data type** | **Constraint** | **Description** |
| Artist\_no | Int | Primary Key | - |
| Artist\_name | text | Not null | Artist name |
| No\_of\_art | int | - | Number of art pieces belonging to artist |

**Investor**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Data type** | **Constraint** | **Description** |
| Inv\_id | Int | Primary Key | - |
| Investor\_name | text | Not null | Investor name |
| Balance | float | - | Investor fund balance |

**Portfolio**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Data type** | **Constraint** | **Description** |
| P\_no | Int | Primary Key | - |
| Investor\_id | Int | Foreign Key | Investor fk |
| No\_of\_shares | int | - | Number of shares in portfolio |

**Order**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Data type** | **Constraint** | **Description** |
| Order\_id | Int | Primary Key | - |
| Status | char | Not null | Codified value for status of order |
| Type | char | Not null | Type of order (Buy/Sell) |
| Order\_date | date | Not null | Date of order |
| Order\_time | time | Not null | Time of order |
| Share\_quantity | int | Not null | Number of shares |

**ART**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Data type** | **Constraint** | **Description** |
| Art\_no | int | Primary Key | - |
| Artist\_no | int | Foreign Key | Artist who created the art piece |
| Style | text | Not null | Art style |
| Recent\_valuation | int | Not null | Price the art was valued at by experts |
| Current\_valuation | int | Not null | Current price of the art piece |

**Share info**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Data type** | **Constraint** | **Description** |
| S\_no | Int | Primary Key | - |
| Art\_no | int | Foreign Key | Reference to art piece |
| Curr\_price | float | Not null | Last updated share price |
| Total\_shares | int | Not null | Total number of shares |
| IPO | date | Not null | Initial public offering date |

**Trade log**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Data type** | **Constraint** | **Description** |
| S\_no | int | Foreign Key | Composite PK |
| Order\_id | Int | Foreign Key | Composite PK |
| Status | char | Not null | status |
| Share\_quantity | int | Foreign Key | Number of shares |
| Date | date | Not null | Date of order |
| Time | time | Not null | Time of order |

# Testing strategies:

* Unit testing:

Testing individual components or modules of a system in isolation.

* Manual testing:

Checking adaptability and usability

* Functional testing

Validating that the software functions as expected and according to the requirements.

# Implementation strategy:

* Phased implementation: Introducing the new system and changes gradually in phases.

# Sample input screens:

# Output format samples:

# Future Enhancements:

* Graph based trading
* Statistical analysis tools

Tools like MACD, EMA, MA can be added to help user analyze stocks

* Payment/Receipt generation

Funds deposition and withdrawal and relevant reports

* Watchlist feature

Users will be able to add a few stocks into a special “Watchlist” to keep a track of prices

* Generation of P/L report

Profit and loss comprehensive analysis

# Conclusion:

* Through ArtShare, investors will be able to directly invest into art
* Artists will also find it easier to showcase their work and earn money from it
* ArtShare implements the concept of partial ownership of art
* Encourages investment in art
* ArtShare makes it convenient and easy to invest in art directly

# References and Bibliography:

* <https://www.youtube.com/watch?v=A7fZp9dwELo&ab_channel=ConcerningReality>
* <https://www.youtube.com/watch?v=FD1dFKIUvnI&ab_channel=FinancialProgrammingwithRitvik%2CCFA>