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COLLEGE OF ENGINEERING
(AUTONOMOUS)

REART VAULT

20INMCA509 - Mini Project 2

Scrum Master

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AJC20MCA-I006

INMCA2020-25 S9

https://github.com/Aleenaginu/Miniproject_2-ReArt-Vault.git

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DEPARTMENT OF
COMPUTER APPLICATIONS

SYSTEM STUDY

Introduction

The concept of waste upcycling through artistic creation is emerging as a novel approach to sustainability, yet it remains relatively underdeveloped and lacks a standardized online platform. ReArt Vault aims to fill this gap by establishing an innovative digital marketplace where waste donors, artists, and buyers converge to promote eco-friendly art. This project seeks to streamline the process of transforming discarded materials into valuable artworks while facilitating sustainable shopping experiences for consumers.

This report documents the development of "ReArt Vault," focusing on its requirements, design, development, testing, and implementation phases. The platform's objective is to harness technology to enhance the accessibility and efficiency of waste upcycling within the art community.

Existing System

The concept of a comprehensive digital platform specifically dedicated to waste upcycling in the art sector is not widely established. Existing platforms primarily focus on general art marketplaces or recycling initiatives without a specific emphasis on artistic creation from reclaimed materials. This underscores the novelty and potential impact of ReArt Vault in pioneering a dedicated space for sustainable art.

Natural System Studied

The integration of waste materials into artistic creation has traditionally been fragmented, relying on individual initiatives and local community efforts rather than a unified digital ecosystem. ReArt Vault aims to study and enhance this natural system by providing a centralized platform that connects waste donors directly with artists who can creatively transform these materials into marketable artworks. By leveraging machine learning algorithms, the platform will also provide insights and suggestions to artists based on material availability and market demand, thereby optimizing the upcycling process.

Designed System Studied

The designed ReArt Vault system provides a user-friendly interface tailored to enhance the experience of waste donors, artists, and buyers. Waste donors can easily list and donate materials, while artists utilize these materials to create unique artworks showcased on the platform. Buyers can browse and purchase these eco-friendly creations securely through integrated payment gateways. The system incorporates machine learning algorithms to notify artists about available materials matching their preferred mediums, optimizing their creative process. Automated

notifications update users on donation statuses and product availability, ensuring a seamless user experience.

Drawbacks of Existing Systems

The current landscape of digital platforms related to waste upcycling in the art sector exhibits several limitations, emphasizing the need for innovative solutions like ReArt Vault:

1. Generalized Marketplaces: Existing platforms primarily serve as general art marketplaces, lacking specialized features for artists working with reclaimed materials.
2. Limited Emphasis on Sustainability: Many platforms focus on art sales without a dedicated emphasis on sustainable practices and the use of recycled materials.
3. Complexity in Material Sourcing: Artists often face challenges in sourcing specific reclaimed materials tailored to their artistic needs, leading to inefficiencies and limited creative possibilities.
4. Lack of Integration with Artist Preferences: Current platforms do not offer tailored notifications or insights based on artists' specific preferences for reclaimed materials, hindering efficient material utilization.
5. Insufficient Environmental Impact Tracking: There is a lack of comprehensive tools to track and showcase the environmental impact of artworks created from reclaimed materials, limiting transparency and accountability.

Proposed System

The proposed ReArt Vault system aims to revolutionize the waste upcycling process by providing a centralized platform for artists to create and sell eco-friendly artworks. It will feature:

- Real-Time Artist Notifications: Artists receive alerts on the availability of materials aligned with their artistic preferences.
- Machine Learning Integration: Algorithms suggest trending art styles and products based on market demand and user preferences.
- Enhanced User Experience: Personalized dashboards for artists and buyers, facilitating easy navigation and transaction management.
- Secure Payment Gateways: Integrated payment systems for seamless and secure transactions.

Advantages of Proposed System

1. Real-Time Artist Notifications
    - Description: Artists receive immediate alerts when new materials matching their preferred mediums (e.g., wood for woodworking) are donated.
    - Implementation: Utilizes real-time messaging services and event-driven architecture to notify artists instantly upon material availability.
2. Machine Learning Integration for Trend Analysis

- Description: Algorithms analyze market trends and user preferences to suggest popular art styles and products.
- Implementation: Implemented using machine learning models trained on historical sales data and user interactions within the platform.

3. Personalized Product Suggestions for Users
    - Description: Provides personalised recommendations to buyers based on their browsing history, purchase behaviour, and highly rated products.
    - Implementation: Uses collaborative filtering and recommendation algorithms to suggest artworks that match user preferences and maximise engagement.
4. User Insights and Decision Support
    - Description: Offers insights to buyers on highly rated and reviewed products to facilitate informed purchasing decisions.
    - Implementation: Utilizes data analytics to highlight top-rated products and user reviews prominently on the platform.
5. Advanced Chatbot with NLP
    - Description: Integrates a chatbot using Natural Language Processing (NLP) to enhance user interaction and provide real-time assistance.
    - Implementation: Implements NLP models for understanding user queries, providing product recommendations, and answering FAQs, improving overall user experience.