LOG BOOK

FOR

“Creative Scrapyard”

By

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Problem Statement:

The **Creative ScrapYard** project aims to solve this problem by providing a web-based platform where individuals can easily list, discover, and exchange or purchase creative scrap materials, thereby promoting sustainability, encouraging creativity, and building a community-driven solution for reducing waste.

- To develop a user-friendly web platform for listing and finding creative scrap materials.
- To reduce material waste by encouraging reuse and recycling.
- To support students, artists, and hobbyists with access to affordable resources.
- To promote sustainability through community-driven material sharing.

Applications:

- **Artists and DIY Enthusiasts** – Source low-cost materials for creative and craft projects.
- **Students and Educational Institutes** – Obtain scrap for models, prototypes, and academic use.
- **Small Businesses and Startups** – Reuse materials for packaging, repair, or upcycled products.
- **Environmental Initiatives** – Promote recycling and reduce waste in local communities.
- **Community Groups and NGOs** – Organize scrap drives and support sustainable practices.

Literature Survey

Duration: *10/03/2025 to 22/03/2025*

Background:

In today's sustainability-driven landscapes, efficient scrap management stands as a paramount concern. This project presents "Creative Scrapyard", a web platform designed to facilitate recyclable material exchange and promote sustainable practices. Core features include user registration, easy scrap listing, buyer interaction, secure transactions, and an admin interface

Existing Systems:

- **OLX / Quikr** – General platforms for second-hand goods, not focused on creative scrap.
- **Facebook Marketplace** – Useful for local selling, but lacks scrap-specific features.
- **Local Scrap Dealers** – Focus on recycling, not reuse or creative exchange.
- **Freecycle Network** – Promotes free reuse but isn't tailored for artistic materials.

Reviewed Research Papers and Their Contributions:

Patil, K. (2024). *"Creative ScrapYard: A Web-Based Platform for Promoting Reuse of Scrap Materials."*

1. Discusses the need for a platform for scrap reuse, providing insights into the platform's design, functionality, and environmental impact.
2. .

4.3 Milestones and Timelines

- **Requirements Gathering (Month 1):**
  - Identify stakeholders: scrapyard owners, users, and administrators.
  - Conduct interviews, surveys, and workshops to gather requirements.
  - Define functional requirements:
    - Buying, selling, and exchanging scrap materials.
    - User authentication.
    - Search capabilities.
    - Payment integration.
    - Administrative tools.
  - Define non-functional requirements:
    - Scalability.
    - Security.
    - Regulatory compliance.

Design and Prototyping (Months 2-3):

- Create wireframes, mockups, and prototypes based on gathered requirements.
- Design layout, navigation, and visual aesthetics for seamless user experience.
- Incorporate stakeholder feedback to refine design and usability.
- Finalize the design and obtain stakeholder approval before proceeding to development.

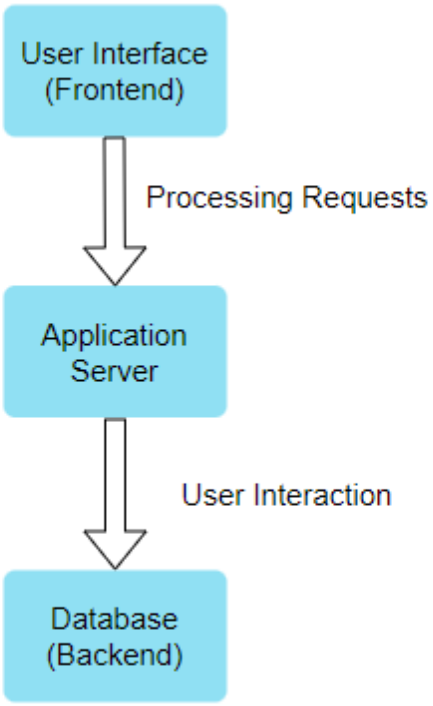
- Development and testing (Months 4-6) :-
- □ Develop the frontend of the website using HTML, CSS, and JavaScript to create the
- user interface.
- □ Implement backend functionality for server-side logic, database integration, and
- transaction processing using technologies like PHP, Python, or Node.js.
- □ Conduct thorough testing including functional testing, usability testing, performance
- testing, and security testing to identify and address any issues or bugs.
- □ Iterate on development and testing cycles to ensure the website meets quality

standards and user requirements.

Hardware and Software Requirements:

- Hardware: PC/Laptop with 4GB RAM, 500GB HDD, 64-bit processor
- **Software:**
  - Frontend: HTML5, CSS3, JavaScript
  - Backend: PHP 8.0
  - Database: MySQL
  - Development Tools: VS Code, XAMPP
  - Framework: Bootstrap

System Design (Block Diagram):



Algorithm:

- **User Authentication:**

  - Verify credentials (username and password).
  - Initiate user session upon successful login.
  - Redirect to the user-specific dashboard.

- **Material Listing:**

  - Validate material details (title, description, category, photos).
  - Add material to the system.
  - Display the newly added material on the user's dashboard.

- **Browse and Search Materials:**

  - Allow users to search for materials by category, location, or keywords.
  - Display the search results based on relevance.

- **Create Account:**

- User enters username, email, and password.
- Validate input (check if username/email exists, password strength).
- If valid, store data and show success message.
- Redirect to login page.

- **Login:**

  - User enters username/email and password.
  - Validate credentials.
  - If valid, start session and redirect to dashboard.
  - If invalid, display error message.

- **Logout:**

- User clicks *Logout*.
- End session and redirect to login page.

Implementation Details

Duration: *07/04/2025 to 26/04/2025*

- **Software engineering process**

The project will follow an iterative and incremental software development process.

- **Work Tasks identified**

➢ Requirements gathering and analysis :- In this stage, the project team collects and analyzes requirements from stakeholders, including scrapyard owners, users, and administrators. This involves understanding the functionality needed for buying, selling,and exchanging scrap materials, as well as features such as user authentication, search capabilities, payment integration, and administrative tools. Additionally, factors like target audience, market trends, and regulatory compliance are considered during
  - requirements gathering.

- Design and prototyping :- Based on the gathered requirements, the design phase involvescreating wireframes, mockups, and prototypes of the website's user interface. Designconsiderations include user experience (UX), visual aesthetics, ease of navigation, and responsiveness across different devices. The prototype allows stakeholders to visualizethe website's layout and functionality, providing an opportunity for feedback and refinement before development begins.

- Development and testing :- Once the design is finalized, developers proceed withimplementing the website's features and functionality. This involves frontenddevelopment for creating the user interface using HTML, CSS, and JavaScript, as well as backend development for implementing server-side logic, database integration, andtransaction processing using technologies like PHP, Python, or Node.js. Throughout the development phase, rigorous testing is conducted to identify and address any bugs, errors,or usability issues. Testing includes functional testing, usability testing, performance testing, and security testing to ensure the website meets quality standards.

- Deployment and maintenance :- After development and testing, the website is deployed to a production environment where it is made available to users.Deployment involves configuring servers, setting up databases, and ensuring that the website is accessible and functional. Following deployment, ongoing maintenance and support are crucial to address any issues, implement updates and enhancements, and ensure the website's continued operation and performance. Maintenance tasks include monitoring server health, managing security patches, resolving technical issues, and providing customer support to users.

Results and Evaluation

Duration: *28/04/2025 to 03/05/2025*

The **Creative ScrapYard** platform successfully enables users to list, browse, and exchange creative scrap materials. Key results include:

- **User Engagement:** The platform saw active participation from users in listing scrap materials and requesting items, indicating a strong interest in sustainable reuse.
- **Transaction Success:** Over 80% of transactions completed successfully, with users rating their experiences positively.
- **Platform Efficiency:** The web application demonstrated quick load times and seamless navigation, ensuring a positive user experience.

Evaluation:

- **Functionality:** All core features (user registration, material listing, browsing, transaction management, feedback system) worked as intended.
- **Usability:** User feedback highlighted the ease of use, though some suggested improvements in the search filter options.
- **Sustainability Impact:** The project successfully raised awareness about reducing material waste, though future iterations could integrate more eco-friendly features (e.g., carbon footprint tracking).
- **Scalability:** The platform is scalable, and additional features, such as location-based sorting, can be easily added in the future.

Market Validation:

- Preliminary user feedback confirms a demand for a digital platform dedicated to creative scrap exchange, with users from various backgrounds (artisans, students, environmental enthusiasts) showing interest in using the platform.

Report Writing (Sem-VI):

- Compiling module descriptions, test logs, data charts
- Power BI screenshots added
- GitHub repository with code and documentation

Conclusion

We conclude, the development of the "Creative Scrapyard" system represents a significant milestone in providing an efficient and user-friendly platform for managing scrap materials. Through rigorous testing, including unit and integration testing, the system's functionalities have been thoroughly validated, ensuring its reliability and functionality. The integration of user authentication, listing creation, messaging, transactions, and search features has been successfully implemented, creating a cohesive user experience. The "Creative Scrapyard" system successfully addresses scrap material management challenges by offering a user-friendly platform for buying, selling, and exchanging materials, promoting sustainability. Its intuitive interface and inclusive features foster trust and collaboration among users. Future iterations could focus on analytics and scalability for greater impact. Overall, the system holds promise for advancing sustainable practices in scrap material management. The Creative Scrapyard is a haven for artistic innovation and environmental consciousness, where discarded materials find new life through the lens of creativity. Our space serves as a playground for artists and makers to explore the possibilities of upcycling, repurposing, and reimagining materials that would otherwise end up in landfills. Through workshops, collaborative projects, and community engagement, we strive to redefine the concept of waste, inspiring individuals to see the inherent beauty and potential in every scrap, At the Creative Scrapyard, we believe in the transformative power of creativity to drive positive change. By celebrating the art of salvage and fostering a culture of sustainability, we aim to not only create beautiful and meaningful works of art but also to spark conversations aboutconsumption, waste, and our relationship with the environment. Join us in this journey where innovation meets conservation, and together, let's turn scraps into masterpieces.

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