AGB1211 – DESIGN THINKING

Department of Artificial Intelligence and Data Science

Academic Year: 2024 – 2025 (Odd Semester)

Year : **IIND YEAR**
Semester : **III**
Section : **A**
Date : **05/12/2024**

PRESENTED BY
1. AAFFRIN AR (230811724322001)
2. ABINAYA S (230811724322006)
3. AKSHAYA AP (230811724322010)
4. AKSHAYA PRIYA T (230811724322011)

Title of the Project

RECYCLING USED/OLD THINGS

Problem Identification

- **Lack of Awareness**: Insufficient knowledge and engagement in recycling practices.
- **Inadequate Infrastructure**: Limited facilities for waste segregation and processing.
- **Contamination**: Mixing recyclables with non-recyclables reduces recycling efficiency.
- **Economic Challenges**: High costs and fluctuating demand for recycled materials.
- **E-Waste Issues**: Complex disposal of electronics with hazardous components.
- **Standardization Gaps**: Inconsistent recycling rules and unclear product labeling.
- **Consumer Behavior**: Preference for disposables and products with short lifespans.
- **Global Disparities**: Inequitable recycling capabilities between developed and developing nations.
- **Underutilized Methods**: Limited use of upcycling and composting practices.
- **Environmental Costs**: Energy-intensive recycling processes may offset benefits.

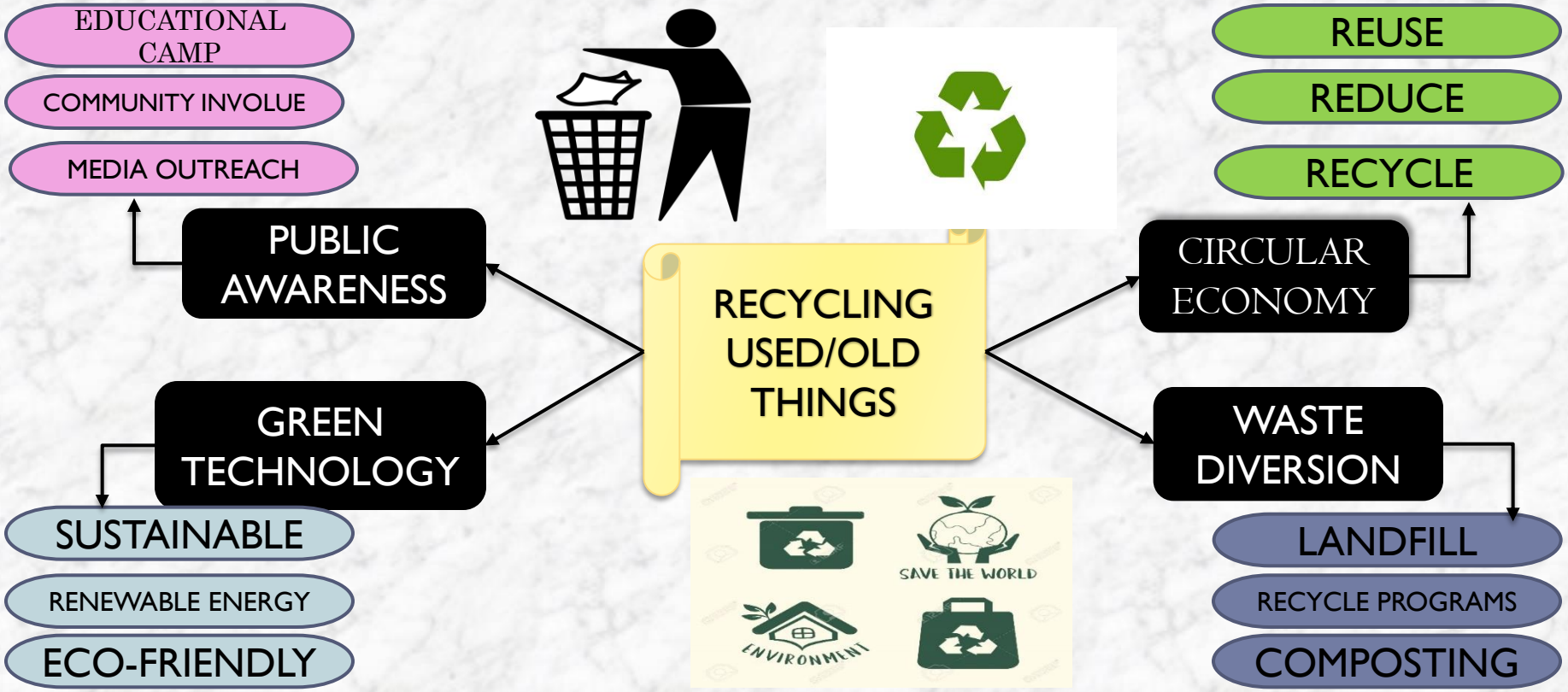
Objective

- **Reduce Waste**: Minimize waste sent to landfills and incinerators.
- **Conserve Resources**: Preserve natural resources by reusing and recycling materials.
- **Protect the Environment**: Decrease pollution and greenhouse gas emissions.
- **Promote Sustainability**: Foster a circular economy through reuse and repair.
- **Raise Awareness**: Educate communities on recycling's importance and methods.

BrainStorming

CIRCULAR ECONOMY	**ZERO WASTE**	JUNK REMOVAL	CIRCULAR ECONOMY
REUSE	BIODEGRADABLE	SCRAP	MATERIAL RECOVERY FACILITY
REPURPOSE	GREEN TECHNOLOGY	E-WASTE	UPCYCLING
REFURBISH	RECYCLING CONTAMINATION	FREECYCLE	EXTENDED PRODUCER RESPONSIBILITY
RECLAIM	PUBLIC AWARENESS	RESALE	REPAIR
SALVAGE	WASTE DIVERSION	DOWNCYCLE	RENEWABLE

Mind Map


EDUCATIONAL CAMP
COMMUNITY INVOLUE
MEDIA OUTREACH
PUBLIC AWARENESS
GREEN TECHNOLOGY
SUSTAINABLE
RENEWABLE ENERGY
ECO-FRIENDLY
RECYCLING USED/OLD THINGS
REUSE
REDUCE
RECYCLE
CIRCULAR ECONOMY
WASTE DIVERSION
LANDFILL
RECYCLE PROGRAMS
COMPOSTING
SAVE THE WORLD
ENVIRONMENT

Primary Research

Surveys and Questionnaires: Collect data from individuals to understand their recycling habits, awareness levels, and challenges faced in recycling.

Interviews: Conduct interviews with recycling center managers, environmentalists, or users of recycling platforms to gather insights.

Observations: Observe and document the recycling processes in communities or organizations to identify inefficiencies.

Focus Groups: Host discussions with potential users to learn about their expectations from a recycling app.

Secondary Research

Market Analysis: Study reports and statistics on recycling trends, waste generation, and environmental impact.

Competitor Analysis: Analyze existing recycling platforms/apps to identify strengths, weaknesses, and gaps

Policy Review: Review government policies and initiatives related to recycling and waste management.

Academic Studies: Refer to research papers, case studies, and articles on sustainable practices and circular economies.

Proposed Work

This project aims to develop a user-friendly app that promotes sustainable waste management.

User Authentication: Secure login and registration ensure personalized experiences and data privacy.

Image Analysis: Users upload images of items, which the app analyzes to determine recyclability.

Recycling Guidance: Provides recycling steps for recyclable items and eco-friendly disposal methods for non-recyclable items.

Awareness and Tracking: Educates users on sustainability and tracks their recycling contributions over time.

The app simplifies recycling, encourages eco-friendly actions, and reduces waste impact.

List of Modules

1.AUTHENTICATION MODULE

2.IMAGE UPLOAD AND ANALYSIS MODULE

3.RESULT AND DISPOSAL GUIDANCE MODULE

Module 1 Description

AUTHENTICATION MODULE:

Objective: Ensure secure and personalized access to the app.

Features

- **User Registration**: Allow new users to create an account through a simple sign-up page.
- **Secure Login**: Enable existing users to log in using their credentials.
- **Data Privacy**: Protect user data through encryption and authentication protocols.
- **Purpose**: This module ensures that only authenticated users access the app, safeguarding personal data while enhancing user experience.

Module 2 Description

IMAGE UPLOAD AND ANALYSIS MODULE:

Objective: Provide a streamlined way for users to identify the recyclability of items.

Features:

- **Image Upload**: Users can upload pictures of items directly through the app interface.
- **Image Processing**: The system analyzes the uploaded image using AI/ML algorithms to determine the item's recyclability status.
- **Seamless Interaction**: A user-friendly interface ensures intuitive navigation and smooth operations.
- **Purpose**: This module acts as the foundation for the app's functionality, bridging user input and actionable insights.

Module 3 Description

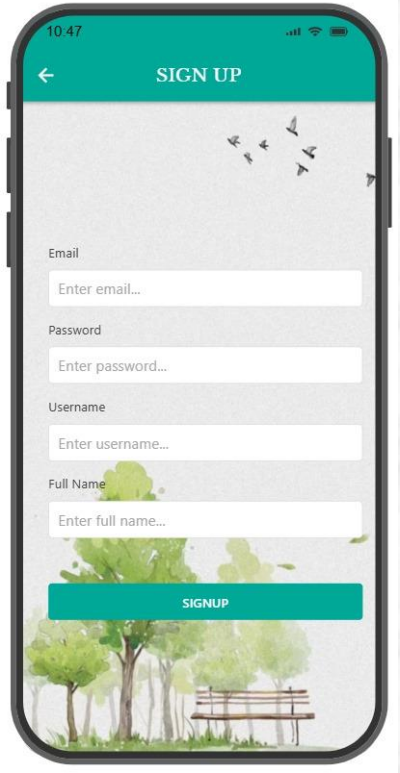
RESULT AND DISPOSAL GUIDANCE MODULE:

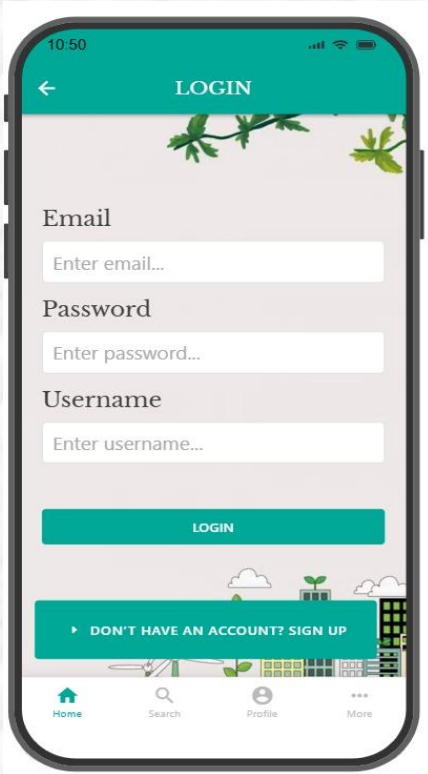
Objective: Offer clear and actionable guidance on recycling or safe disposal.

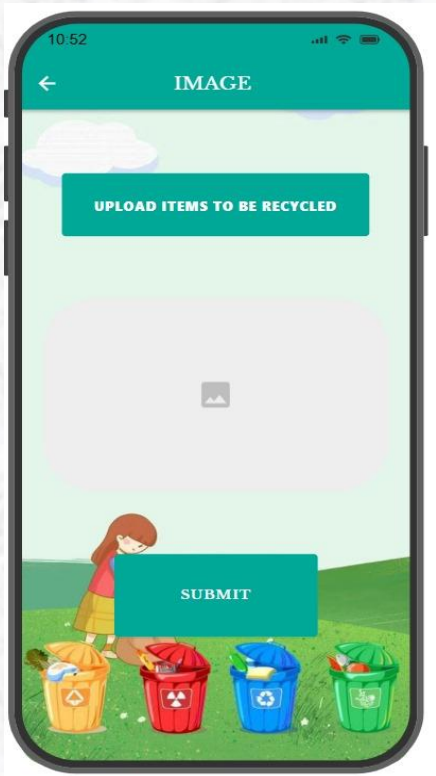
Features:

- **Recyclability Status**: Display whether the uploaded item is recyclable or not.
- **Recycling Steps**: Provide step-by-step instructions for recyclable items.
- **Disposal Guidance**: Suggest environmentally safe disposal methods for non-recyclable items.
- **Purpose**: This module empowers users to take eco-friendly actions, fostering sustainable habits.

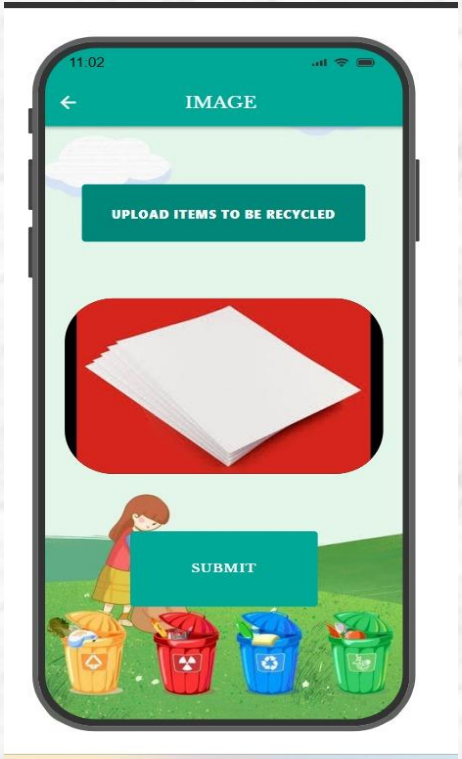
Results


10:47
SIGN UP
Email
Enter email...
Password
Enter password...
Username
Enter username...
Full Name
Enter full name...
SIGNUP

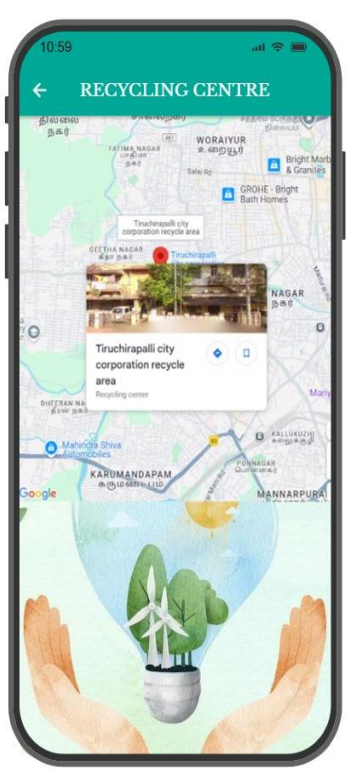

10:50
LOGIN
Email
Enter email...
Password
Enter password...
Username
Enter username...
LOGIN
DON'T HAVE AN ACCOUNT? SIGN UP
Home
Search
Profile
More


10:52
IMAGE
UPLOAD ITEMS TO BE RECYCLED
SUBMIT

Results


11:02
IMAGE
UPLOAD ITEMS TO BE RECYCLED
SUBMIT


11:02
RESULT
THE GIVEN ITEM IS
RECYCLABLE


10:59
RECYCLING CENTRE
Tiruchirapalli city corporation recycle area
Recycling center
KARUMANDAPAM
MANNARPURA
Google

Results


11:50
IMAGE
UPLOAD ITEMS TO BE RECYCLED
SUBMIT


10:53
RESULT
THE GIVEN ITEM IS
NOT RECYCLABLE


10:53
SAFE DISPOSAL
DISPOSABLE METHODS
Sort and Bag Properly Use sturdy, sealed bags to contain waste securely.
Follow Local Rules Check your area's waste disposal guidelines.
Use Designated BinsDispose of items in labeled bins (e.g., landfill, hazardous)
Avoid Burning or DumpingAlways dispose of waste through approved facilities.

Conclusion

The proposed recycling app addresses critical challenges in waste management by providing a user-friendly, technology-driven solution that simplifies and promotes recycling. By incorporating features like AI-powered item identification, GPS-enabled recycling center locators, and a reward system, the app encourages users to adopt sustainable practices. It also raises awareness about recycling's environmental benefits and facilitates community engagement in reducing waste. Through innovative use of modern technologies, this app has the potential to contribute significantly to a cleaner, greener, and more sustainable future, making recycling an accessible and rewarding habit for all.

Thank You

ANY QUERIES???