Basic Details of the Team and Problem Statement

Ministry/Organization name/Student Innovation : Ministry of Environment

PS Code:1392

Problem Statement Title : E-Waste Facility Locator

Team Name : Eco-FriendDIT

Team Leader Name : Snehal Budale

Institute Code (AISHE):6207

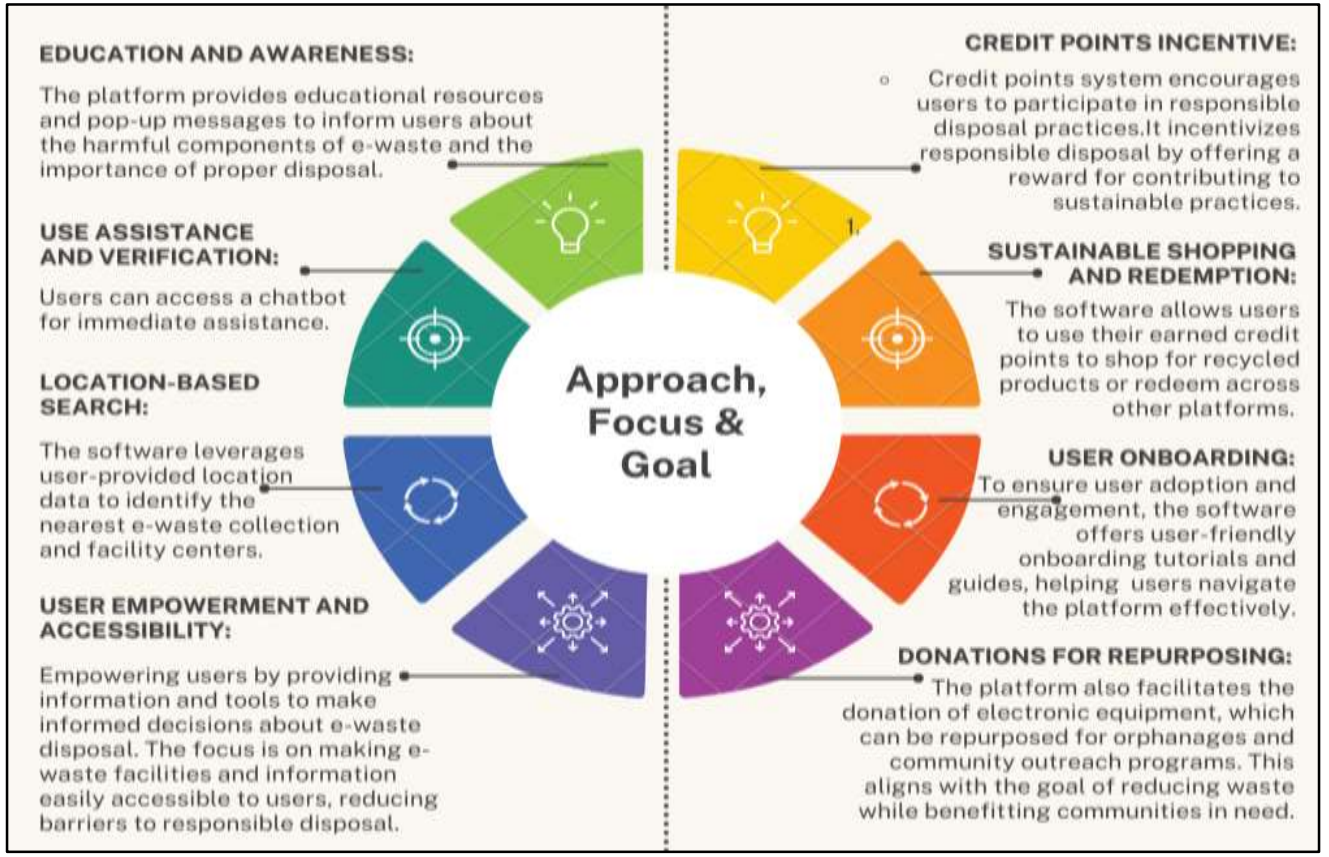
Institute Name : Dr. D. Y. Patil Institute of Technology

Theme Name : Smart Automation

Idea/Approach Details

Our Methodology aims at crafting a robust **web** based software that **facilitates** users to easily **find** the **nearest** and most **suitable** E-Waste collection and **facilities**. The main **objective** is to **encourage eco-friendly routines** and to engage in **building** a **sustainable future**. The prototype will perform as mentioned below:

- Users **go through** the E-waste **materials' list** to confirm if their items **qualify** as **E-waste.** regarding the same.
- one can **consult** our **chatbot** about the eligibility of an item or understanding the environmental impact of E-waste, our chatbot is there to assist 24/7.
- **Using** user **input** details of state, city and area, **provide** them with list of nearest **facility centers** along with **contact** details, **location** and an option to **schedule pickup.**
- Generation of **credit points** for **selling** and giving input details about their old electronic devices, and based on the amount of precious **metals recovered** through proper disposal.
- Use Credit points to **shop** recycled **products from same site** or **redeem** across **other platforms** (vouchers, discount coupons, deals).
- Facilitating **donations** of outdated electronic equipment(**in specific cases**) that will be **repurposed** for orphanages/community outreach.
- Our website includes **educational pop-ups** that will educate people about **consequences of harmful components** of E-waste.
- **To help users** understand how to **navigate** and utilize the **site's features** there will be **user-friendly** onboarding **tutorials** and **guides.**



TECHNOLOGY STACK

Front-end Development:
- HTML/CSS/JavaScript: For building the user interface and handling client-side interactions.
- React JS: JavaScript libraries for building interactive and responsive user interfaces.

Back-end Development:
- Programming Language: Python/JavaScript (Node.js)
- Web Framework: Flask/Django
- RESTful APIs: To handle data requests and interactions between the front-end and back-end.

Database:
- Relational Database Management System (RDBMS): MySQL, or SQLite for storing user data, locations, and e-waste information.
- MongoDB for handling unstructured data if needed.
- Database: To store user credits, transactions, and history.

Geolocation Services:
- Google Maps API: To provide location-based services that is finding the nearest e-waste collection facilities.

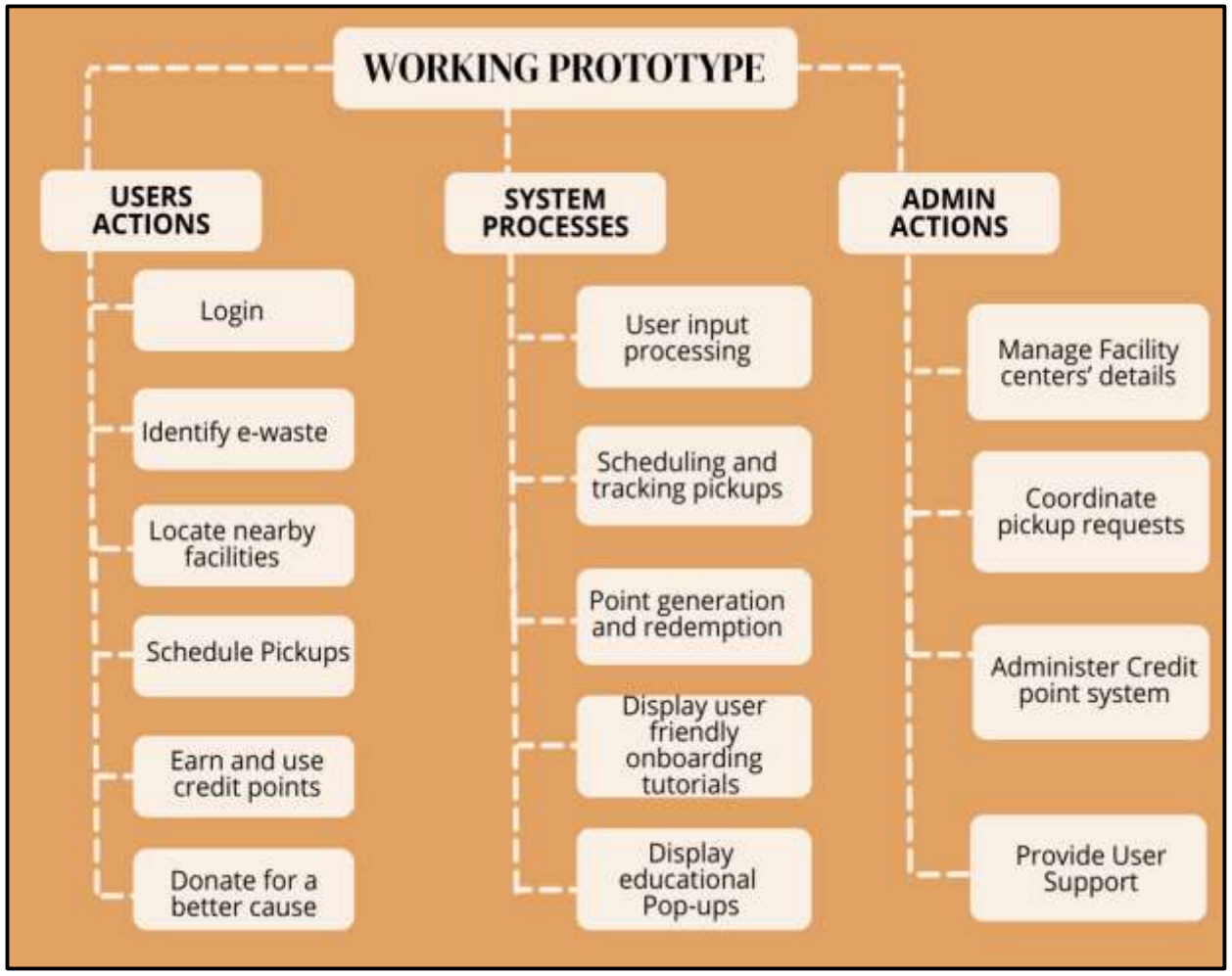
Chatbot:
- NLP Framework: Google's Dialogflow for creating chatbot , it supports natural language understanding.
- Node.js: To build server-side components for handling webhook interactions with Dialogflow.

Server Hosting:
- Web Hosting: AWS, Google Cloud, Azure, or other cloud hosting services.
- Database Hosting: Managed database services or self-hosted databases.

Idea/Approach Details

Describe your Use Cases here

Here is a structured approach to describe our project's working prototype:



Describe your Dependencies / Show stopper here

- **Dependencies/Show Stoppers :**
- **Dependencies:**
- **Geospatial Data**: To locate e-waste facility centers or collection points, we need access to geospatial data . We have to obtain this data from sources including government agencies, open data initiatives, or commercial APIs like Google Maps etc.
- **Feature Engineering**: Identify and extract relevant features from the dataset, for predictions and recommendations of facility centres.
- **E-Commerce Integration:** Integration with e-commerce platforms for users to shop with credit points.
- **Scalability:** Building the platform to handle increased user traffic as it gains popularity.
- **Show stoppers:**
- **Legal and Ethical Considerations**: Legal and ethical considerations, such as privacy laws, **data accuracy** and data protection regulations, that apply to our project.
- **Low user Awareness and Adoption:** Even with a well designed and dynamic website, if users are not aware of its existence or do not understand how to use it, our project may not achieve its objectives.
- **Incomplete or inaccurate facility Data:** Obtaining reliable data sources, or data that's not regularly updated. If the information about facility centers is outdated, inaccurate or incomplete, users may loose trust in our service, it can also lead to failed disposal attempts.
- **Donation and Repurposing:**Challenges in finding organizations willing to accept donated equipment or difficulties in repurposing as well as organizations willing to donate.
- **Technical limitations:** Technical limitations leading to slow performance or outages during high traffic.

Team Member Details

Team Leader Name: Snehal Budale

Branch (Btech/Mtech/PhD etc) :BE | Stream (ECE, CSE etc):AI&DS | Year (I,II,III,IV) : II

Team Member 1 Name: Rajas Fegade

Branch (Btech/Mtech/PhD etc) :BE | Stream (ECE, CSE etc):AI&DS | Year (I,II,III,IV) : II

Team Member 2 Name: Aman Shaikh

Branch (Btech/Mtech/PhD etc): BE | Stream (ECE, CSE etc):AI&DS | Year (I,II,III,IV): II

Team Member 3 Name: Hrishikesh Banait

Branch (Btech/Mtech/PhD etc): BE | Stream (ECE, CSE etc):AI&DS | Year (I,II,III,IV): II

Team Member 4 Name: Nilkant Gudpale

Branch (Btech/Mtech/PhD etc): BE | Stream (ECE, CSE etc): AI&DS | Year (I,II,III,IV): II

Team Member 5 Name: Sujal Gosavi

Branch (Btech/Mtech/PhD etc): BE | Stream (ECE, CSE etc): AI&DS | Year (I,II,III,IV): II

Team Mentor 1 Name: Ms. Disha Sengupta

Category (Academic/Industry):Academic | Expertise (AI/ML/Blockchain etc): Networking and database | Domain Experience (in years): 9 years

Team Mentor 2 Name: Ms. Aparna Kulkarni

Category (Academic/Industry):Academic | Expertise (AI/ML/Blockchain etc): Deep learning and ML | Domain Experience (in years): 9 years