

TECH-EXPO

IDEA ON THEME -
SUSTAINABLE DEVELOPMENT
(Senior Category)

BY SHRISTI

Project Abstract: GreenLoop – Revive, Reuse, Reimagine

In today's fast-paced consumer culture, countless usable items — especially clothing — are discarded after minimal use. *GreenLoop* offers a smart and sustainable solution by connecting individuals with a purpose.

Our platform empowers users to **donate pre-loved items** with ease. By simply uploading a photo, our system captures their location and displays **verified nearby donation centers** like NGOs, orphanages, and shelters.

For items unsuitable for donation, we offer a **Recycle Guide**. Users can check if a product is recyclable or waste. If recyclable, our **AI-powered chatbot** provides creative, DIY reuse ideas to **upcycle** the item — promoting zero waste.

With Green Loop, sustainability becomes simple, social, and smart.

Methodology :

1. Frontend & User Interaction

- Developed using **EJS templating** and **CSS** for a lightweight, fast-loading interface.
- User uploads item images and views personalized nearby donation options.

2. Backend Logic

- Built with **Node.js and Express.js** to handle routes, form submissions, and API logic.
- **Bcrypt** secures user data and authentication.

3. Database Integration

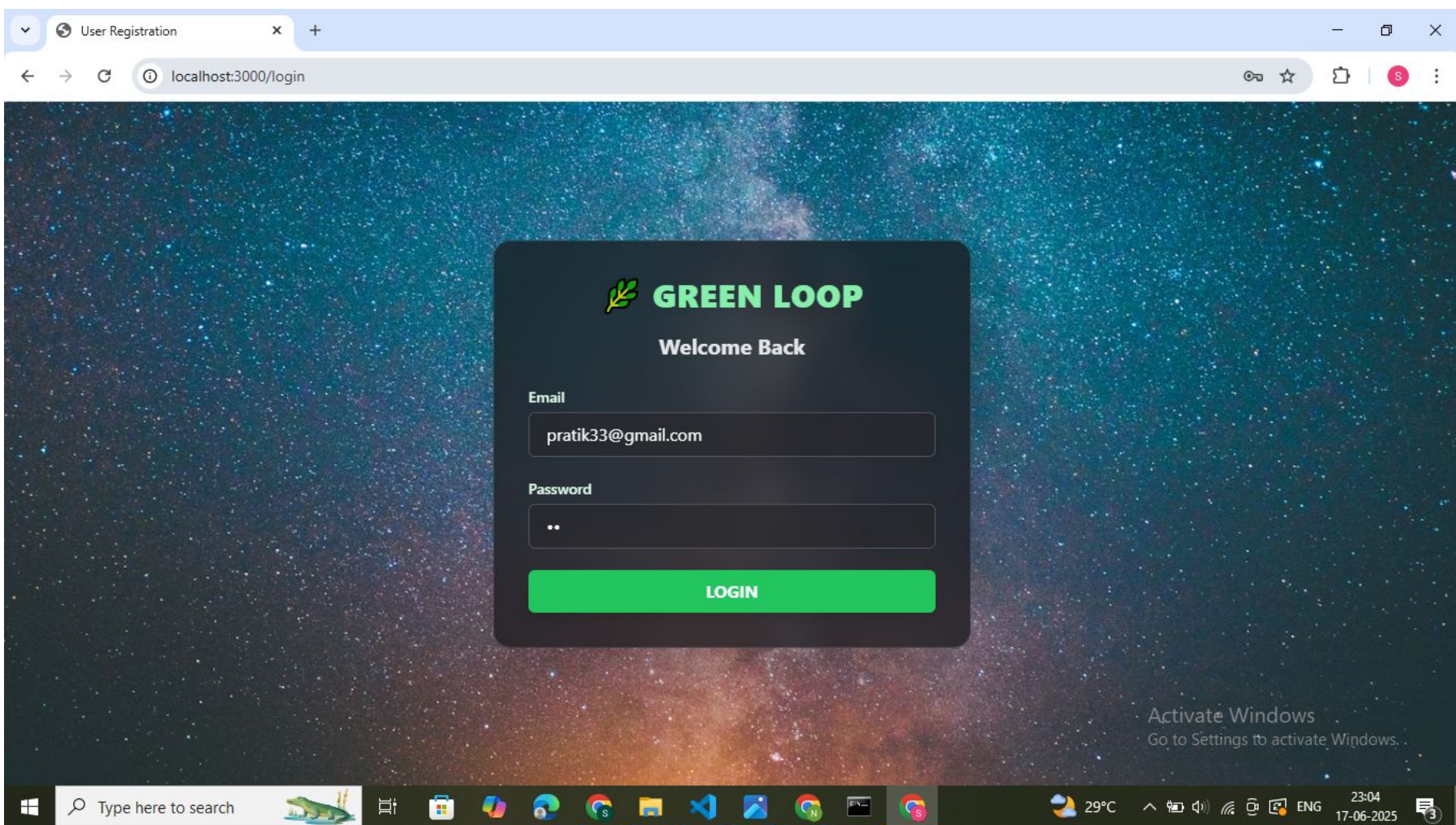
- Used **MySQL** for structured data storage — donation centers, user profiles, uploaded items.

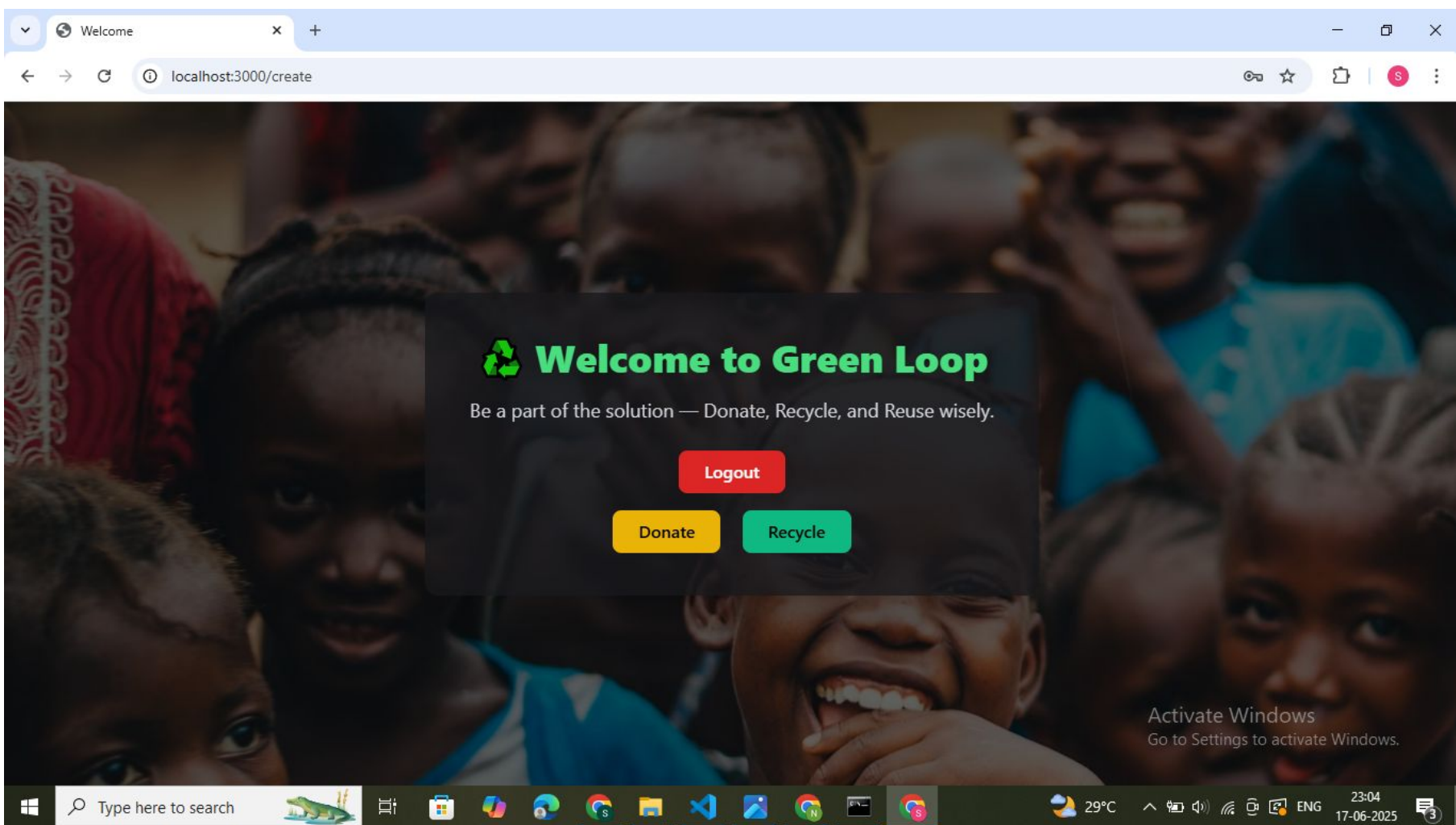
4. AI & Intelligence

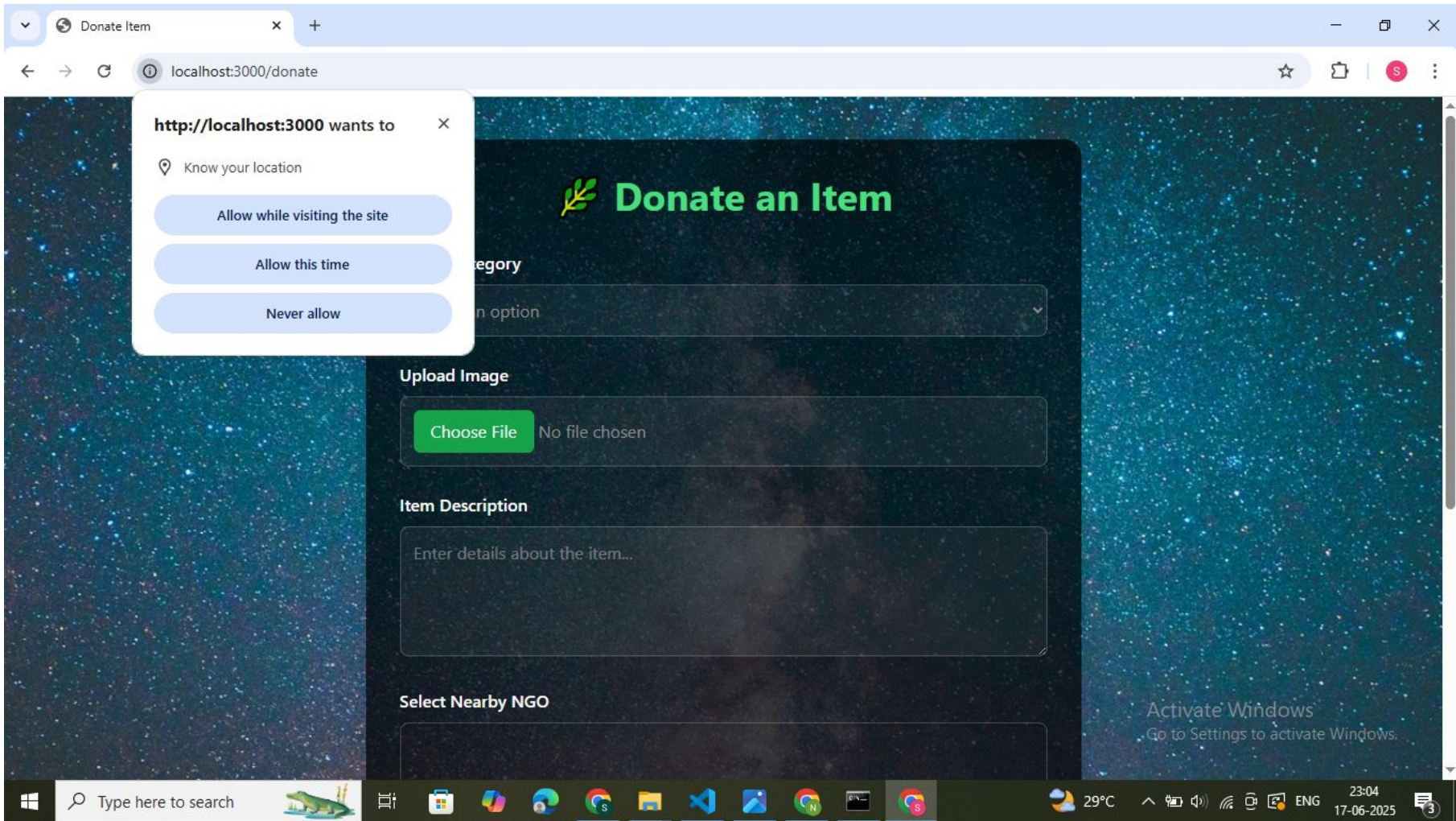
- **Gemini API (Google AI)** powers the chatbot to suggest upcycling ideas interactively.
- **Hugging Face API** helps in classifying item types or checking recyclability (based on description/image).

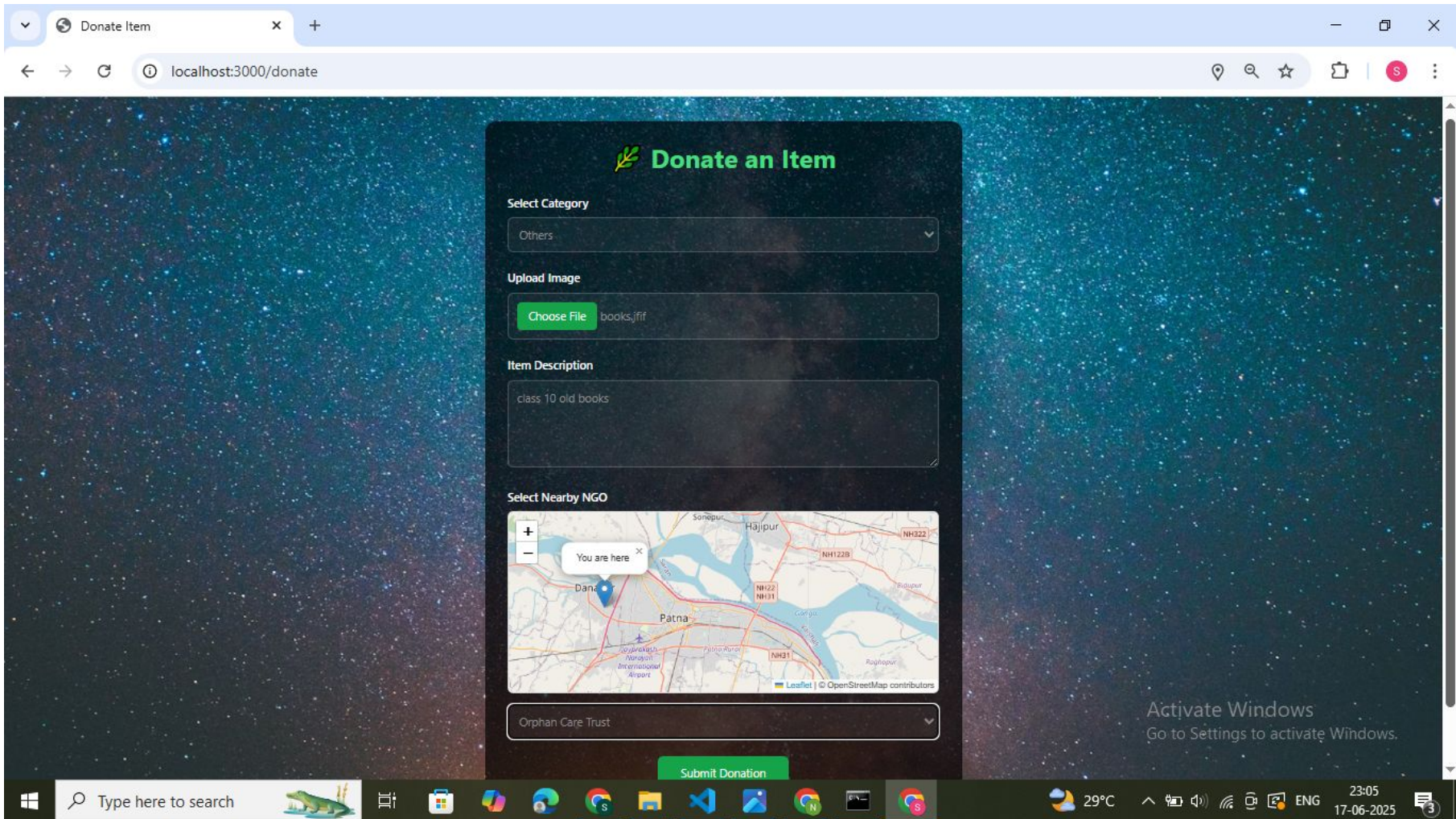
5. Smart Features

- **Location tracking** via browser geolocation.
- **NGO mapping** using filtered database results based on location.










AI Analysis Result

localhost:3000/recycle





AI Analysis Result


Detected Item: mailbag, postbag

Item Age: 34 months

Suggestion: Recycle appropriately if possible. Try to reuse or repurpose the item before disposing of it.

 Analyze Another


 Back to Dashboard

 Get Detailed Tips

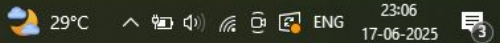
Activate Windows

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Type here to search



29°C



Welcome To Your ECO-Buddy!

how to make this bag reusable

Okay, Eco-Buddy here, ready to help make that bag reusable! Here are a few ideas, focusing on practicality and sustainability: * **Durability is Key:** If the bag is flimsy, reinforce seams with stronger thread or add a lining made from recycled fabric (old t-shirts, sheets, etc.) to give it more structure and support heavier items. * **Easy to Clean:** Apply a water-resistant coating (look for eco-friendly options) to the inside. This will help protect against spills and make it easier to wipe clean. * **Folding and Storage:** If the bag is bulky, add a simple closure like a button and loop, or a small snap, so it can be folded up compactly for easy storage in a purse or car.

Ask a medical question...

Send

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Match



14:01
14-06-2025



```
mysql> use userd;
Database changed
mysql> show tables;
```

```
+-----+
| Tables_in_userd |
+-----+
| donations      |
| users          |
+-----+
2 rows in set (0.09 sec)
```

```
mysql> select * from users;
```

```
+-----+-----+-----+-----+-----+
| id | username | email | password | age |
+-----+-----+-----+-----+-----+
| 12 | gsajhs | shristi2860@gmail.com | $2b$10$p7r0s4/RabRy.7VIg6MNP0SFgQJw5/wFFxLlqqgWM7gc5j8nz17zu | 1 |
| 13 | xyz | zz@gmail.com | $2b$10$1Gq2R4b6hAWdGq.jWHvC1ui2nJufgJt1GQa3axt0dIK3MSQWn1E6S | 25 |
| 14 | xyz | zz@gmail.com | $2b$10$aYVPsRiesMcz1DqnQB54a02XCSEJu187n.j03waBs4TXXwpc3T7xS | 25 |
| 15 | pratik | pratik33@gmail.com | $2b$10$GF./vxpfq48rHZ9oSrjw0eNYgYDyrId6CEnXGn6XgHR6Jpi.pYU0K | 20 |
+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)
```

```
mysql> select * from donations;
```

```
+-----+-----+-----+-----+-----+-----+-----+
| id | category | description | image_path | created_at | selected_ngo | userloc |
+-----+-----+-----+-----+-----+-----+-----+
| 74 | others | class 10 old books | image-1750181734088-502045934.jfif | 2025-06-17 23:05:34 | Orphan Care Trust | 25.6180224,85.0558976 |
+-----+-----+-----+-----+-----+-----+-----+
1 row in set (0.01 sec)
```

```
mysql>
```

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Results

- **Seamless Item Donation:** Users could easily upload items and find nearby donation centers (NGOs, orphanages) based on auto-location.
- **Recyclability Checker:** Products were successfully identified as recyclable or waste using Hugging Face API.
- **Smart Upcycling Bot:** Gemini-powered chatbot offered DIY ideas — helping users creatively reuse over 70% of recyclable items.
- **Impact Potential:** The platform encourages circular economy habits, reduces textile waste, and supports underprivileged communities.
- **Tested with Real Users:** Functional end-to-end with secure login, data storage, and interactive features in place.

Conclusion

GreenLoop is more than just a donation platform — it's a step toward a **sustainable, conscious society**. By enabling users to **donate, recycle, and upcycle** unused items effortlessly, we bridge the gap between waste and need. Our solution fosters **environmental awareness**, supports **social welfare**, and promotes a **zero-waste mindset** — making sustainability **accessible and actionable** for everyone.

THANK YOU