

COMP3030J Software Engineering Project 2024-2025

Goup6-DeepProgramme-User Documentation

JingwangLi
YixinNiu
YihanYan
YuzeRong
ChengkaiJing
ChenleQin

Contents

1	Introduction	2
2	Using Guidance	2
2.1	Overview	2
2.2	Recommended browser	2
2.3	Web Page Access	2
3	Customer Portal	3
3.1	Home Page	3
3.2	Index Page	4
3.2.1	Navigation Bar	4
3.2.2	Top Bar:	5
3.2.3	Desk Pet:	5
3.3	Features Overview	6
3.3.1	Maps and Places Autocomplete	6
3.3.2	AI-Powered Identification	6
3.3.3	Educational Resources	7
3.3.4	Interactive Games	7
3.3.5	My Coupouns	7
3.3.6	User Feedback	8
3.3.7	Personal Profile	8
4	Administrator Portal	9
4.1	Features Overview	9
4.1.1	Add Labels	9
4.1.2	Garbage Summary	9
4.1.3	Trash Report	9
4.1.4	Editorial Education Board	10
4.1.5	User Management	10
4.1.6	User Feedback Management	10
5	Statement	10

1 Introduction

Welcome to Campus Purge! We're passionate about building a greener campus through smart, sustainable waste management. Developed by students at the Beijing University of Technology, our platform empowers everyone on campus—students, faculty, and staff—to make eco-friendly choices with ease.

Campus Purge helps you sort waste correctly using AI-powered image recognition, locate nearby disposal bins in real-time, and learn more about recycling through interactive and gamified features. Whether you're looking to build better habits or just want to do your part, our platform makes it simple and rewarding.

Available on both web and mobile, Campus Purge is designed to make sustainable living part of your daily routine. Join us in creating a cleaner, smarter, and more sustainable campus—one small action at a time!

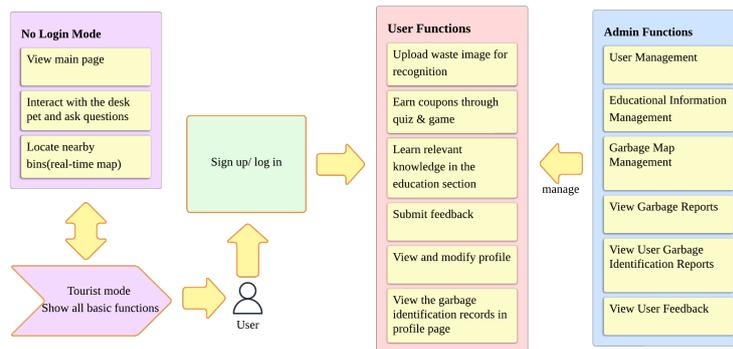


Figure 1: Flow Chart

2 Using Guidance

2.1 Overview

As a user, you can conveniently view the nearest trash bins and access detailed information about each one through our platform. The built-in map will guide you to the appropriate location for proper waste disposal.

You can also explore educational content about waste classification, complete related quizzes, play interactive mini-games, and share your feedback with us. To make the experience more rewarding, our system offers coupons as incentives when you take self-assessment quizzes or engage in the games—making learning both fun and beneficial.

2.2 Recommended browser

For the best experience, we recommend using the Google Chrome browser to access our website. If you are an administrator, you can use your administrator account to log into our management system to manage website content and user information.

2.3 Web Page Access

<https://csi420-02-vm8.ucd.ie/>

Due to the restrictions of Google Maps API, loading our website requires using a VPN.

Here are the two different types of account that are provided for you to use and test

Role	Email	Password
User	testUser@test.com	123123
Admin	admin@admin.com	123123

3 Customer Portal

3.1 Home Page

This page is a brief introduction to this system. It includes the introduction about us, introduction about this platform, the SDGs we achieved, our service, the testimonials, our instructors and how to contact to us. In the top bar of this page, you could click *Login* to enter the login page, click *Register* to enter the register page or click *Map* to access index page as a visitor.



Figure 2: Home page top bar

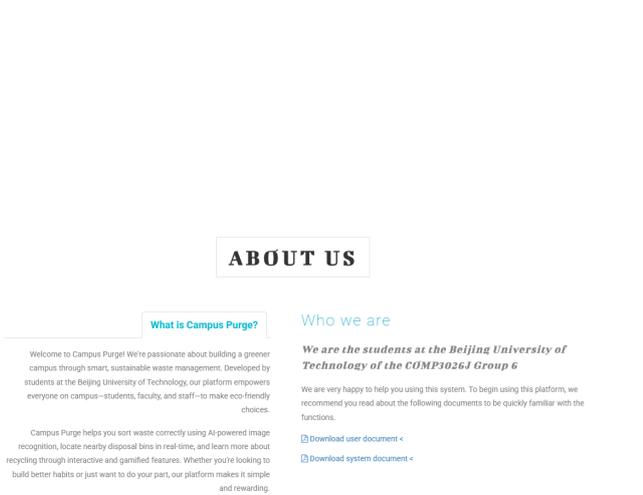


Figure 3: About us



Figure 4: SDGs

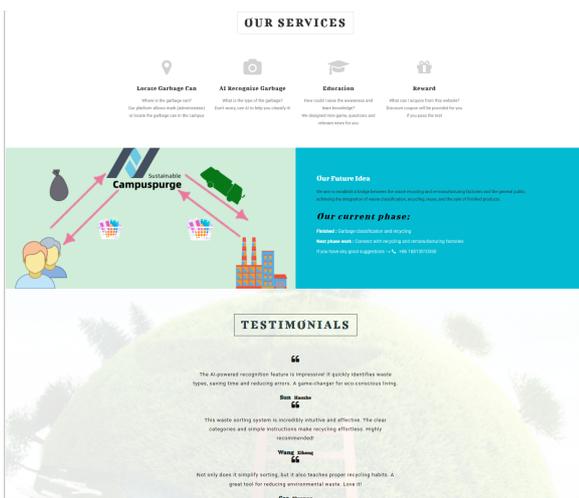


Figure 5: Service, Plan and Testimonials

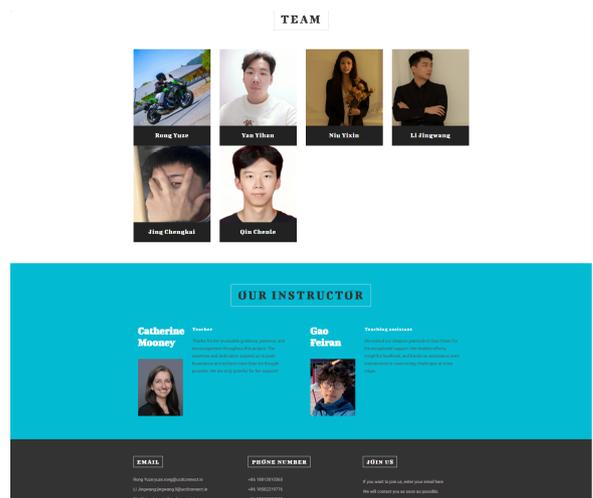


Figure 6: Team, Instructors and Contact Information

3.2 Index Page



Figure 7: Index page

Note: If you don't log in you will only see the top bar and the map, the navigation bar will not be visible. And your top bar will have three functions: *login* (Figure 9), *register* (Figure 10) and *change theme*



Figure 8: unlogin top bar

Figure 9: Login page

Figure 10: Register page

3.2.1 Navigation Bar

Customer Navigation Items:

- Bin Map – View the real-time smart bin distribution
- AI Classification – Upload waste images to receive instant sorting suggestions
- Garbage Classification Knowledge – View the relevant news or knowledge of garbage classification
- Eco Quiz – Test your knowledge of garbage classification through questions and win coupons
- Game – Use the mini game to learn how to sort different types of garbage and earn coupons
- My Coupons – View your coupons and use them to offset corresponding money
- Feedback – Provide your valuable suggestions

Administrator Navigation Items:

- Trash Report – Display the top ten types of garbage that students have queried
- Garbage Summary – Display the amount of garbage in the trash cans this month
- Add Tags – Add new tags for new garbage types
- Manage Garbage Classification Knowledge – Add new knowledge into the system
- Manage Problem – Add new quizzes, questions or categories into the system
- Browse Feedback – View all feedback from users
- User Management – Manage all system accounts

Common Navigation Items:

- Profile – View or change your personal information
- Logout – Log out from this platform

3.2.2 Top Bar:

- Campus Purge Logo – Click to return to the homepage
- Three hyphens – Click to hide the navigation bar
- Title – Show the current page without any functions
- Sun/Moon - Click to change the them between dark and light

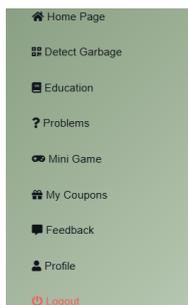


Figure 11: Customer Navigation bar



Figure 12: Admin navigation bar



Figure 13: Top bar

3.2.3 Desk Pet:

- Users can interact with desk pets and ask questions. You can also change the style of the pet or ask it follow your mouse.

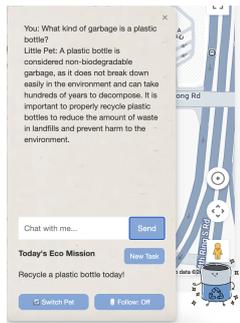


Figure 14: Desk Pet



Figure 15: Change the style

3.3 Features Overview

Our waste classification platform offers four core functionalities to make recycling easy and engaging (we provide both dark theme and light theme, user could click the small icon in the top bar to change it, to save space, the dark theme will not be shown in detail for here):

3.3.1 Maps and Places Autocomplete

- Locate and monitor the garbage content. Map will show you the distribution of garbage can and the content of the garbage in each can. Click on the buttons indicated by the red boxes in figure 11 to locate your position.

Note: Because browsers usually obtain location information relying on network data (such as Wi-Fi or IP addresses), which is not as precise as the built-in GPS of mobile phones, inaccurate positioning may occur sometimes. Additionally, since the API is enabled, the location may occasionally default to the API server's location, causing the coordinates to fall back to the default position.

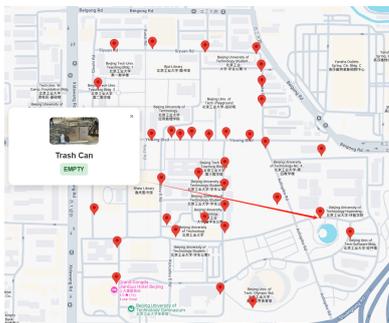


Figure 16: Map

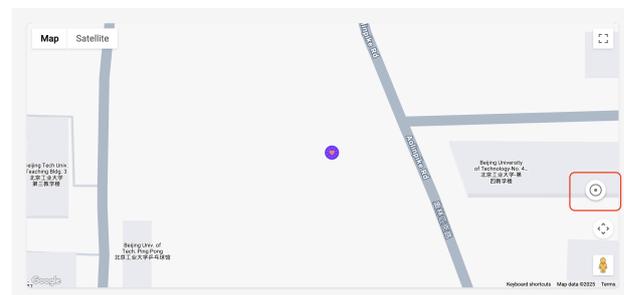


Figure 17: Positioning Yourself

3.3.2 AI-Powered Identification

- Instant waste categorization using advanced image recognition. You could upload images to ask help from AI which would tell you categorization of this garbage.



Figure 18: Upload and Classify

3.3.3 Educational Resources

- Comprehensive learning materials about proper waste sorting. There are three different functions in this part, quiz, question, and knowledge. Users could test themselves and check the results using the quiz. They could also first practice or see the news through several knowledge.

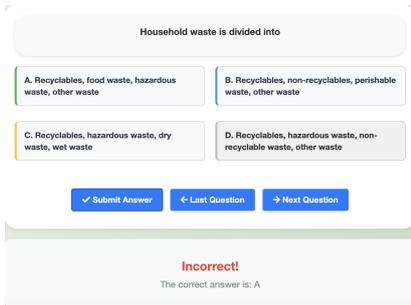


Figure 19: Question

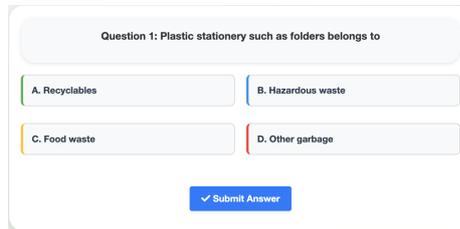


Figure 20: Test

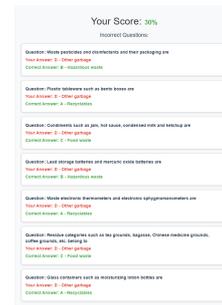


Figure 21: Test Results



Figure 22: Knowledge List



Figure 23: Knowledge Detail

3.3.4 Interactive Games

- Fun challenges to test and improve your recycling knowledge. This part allows user drag different garbage to the correct garbage cans. Appropriate classify will get 10 more scores but wrong classification will get -5 scores.

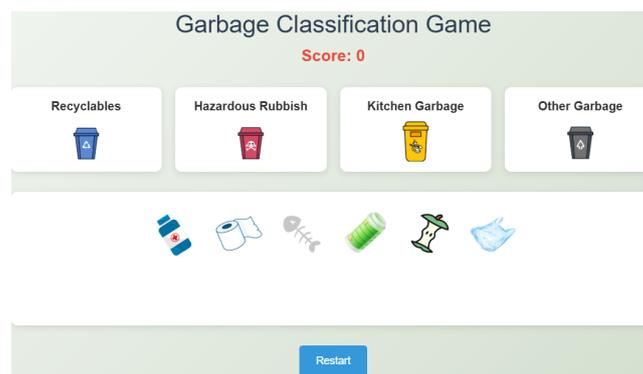


Figure 24: Minigame

3.3.5 My Coupons

- In this module, users can view their own coupons. When user print or buy something, they can use the coupons to offset 5 yuan.

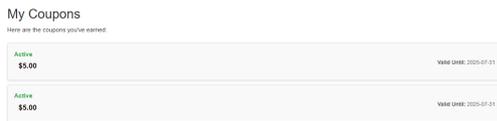


Figure 25: Coupons



Figure 26: Coupons QR Code

3.3.6 User Feedback

- In this module, user can write the feedback to us through rating and writing content

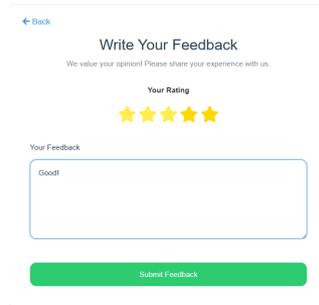


Figure 27: User Feedback

3.3.7 Personal Profile

- The system allow user to see, edit even delete their account information. However, we restrict that only certain information could be changed. The user can also view a record of the garbage he/she has identified.

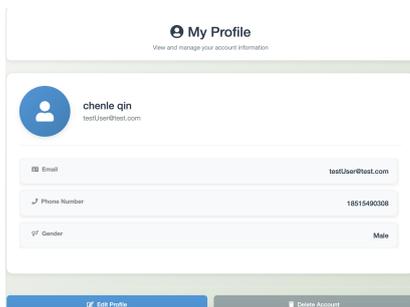


Figure 28: View Profile

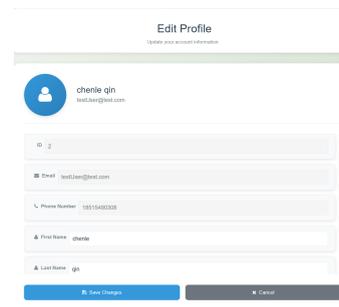


Figure 29: Edit Profile

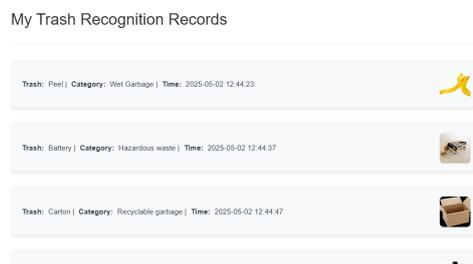


Figure 30: Recognized Record

The system combines practical tools with educational content to create a complete waste management solution for households and communities. All features work seamlessly across web and mobile platforms with synchronized user accounts.

4 Administrator Portal

4.1 Features Overview

The functions of administrator includes:

All functions mentioned in the customer's (except Write feedback and My Coupons)

4.1.1 Add Labels

- Add Labels – Click to add new labels of the new garbage can. Administrator could name and upload image to this new site.

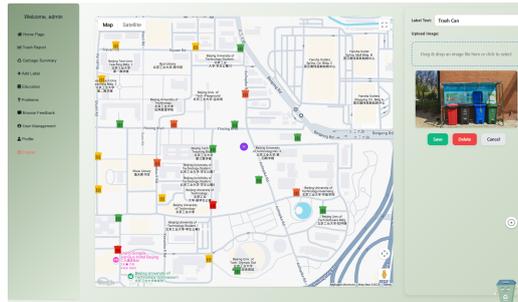


Figure 31: Add Labels with image and name

4.1.2 Garbage Summary

- In this module, administrators can look at trash data and related statistics. In practical application, this part of the data will be transmitted in real time by the real-time camera.



Figure 32: Monthly Waste Volume

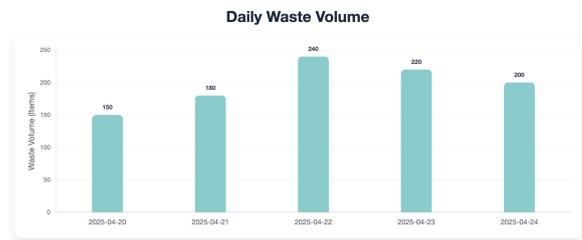


Figure 33: Daily Waste Volume

4.1.3 Trash Report

- In this module, the administrator can view the ranking of the type of trash queried by the user.
note: All data displays are based on the query data submitted by the user for spam identification via AI classifier (3.3.2)

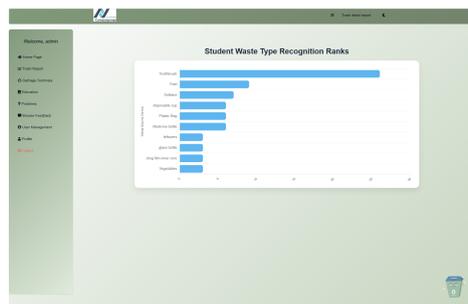


Figure 34: Trash Report

4.1.4 Editorial Education Board

- There are multiple interfaces in this module. The administrator edits the data in the education interface as well as the categories of questions and specific questions.

Figure 35: Edit Questions

ID	Category	Title	Description	Time	Author	Actions
1	Basic	What are the four types	Recyclable Waste, Kitchen Waste,	2025-05-01	Yihan Yan	Save Delete
2	Basic	Common types of Recyc	Includes paper, plastics, glass, metals,	2025-05-02	Yihan Yan	Save Delete
3	Policy	Shanghai Municipal Hou	Enforces mandatory waste sorting, includes	2025-05-02	Yuze Rong	Save Delete

Figure 36: Manage Knowledge

4.1.5 User Management

- In this module, administrators can manage user accounts

ID	Fname	Lname	Email	Phone_number	Gender	Operation
1	jingwang	lee	jingwang62@163.com	24134131323	Male	update delete
2	chenlie	qin	testUser@test.com	18515490308	Male	update delete
3	chenlie	qin	testUser1@test.com	18515490309	Male	update delete
4	chenlie	qin	testUser2@test.com	18515490301	Male	update delete
5	yihan	yan	yyh@yyh.com	18610529861	Male	update delete
6	yixin	niu	nyx@163.com	18629872872	Female	update delete
7	yuze	rong	ryz@163.com	13683318766	Male	update delete

Figure 37: User Management

4.1.6 User Feedback Management

- In this module, administrators can manage users' feedback

ID	User	Rating	Date	Actions
1	chenlie qin testUser@test.com	★★★★★ (5)	2025-05-15 00:12	View
2	yuze rong ryz@163.com	★★★★★ (5)	2025-05-12 00:12	View
3	yixin niu nyx@163.com	★★★★★ (5)	2025-05-12 18:12	View
4	yihan yan yyh@yyh.com	★★★★★ (5)	2025-05-13 18:20	View
5	chenlie qin testUser@test.com	★★★★★ (5)	2025-05-14 13:20	View
6	jingwang lee jingwang62@163.com	★★★★★ (5)	2025-05-11 13:20	View
7	chenlie qin testUser@test.com	★★★★★ (5)	2025-05-16 13:20	View

Figure 38: User Feedback Management

5 Statement

- To enhance the clarity and readability of this manual, we utilized AI tools (such as ChatGPT) to refine grammar, improve phrasing, and polish language expression. All content and ideas remain our own; AI was used solely for language enhancement.