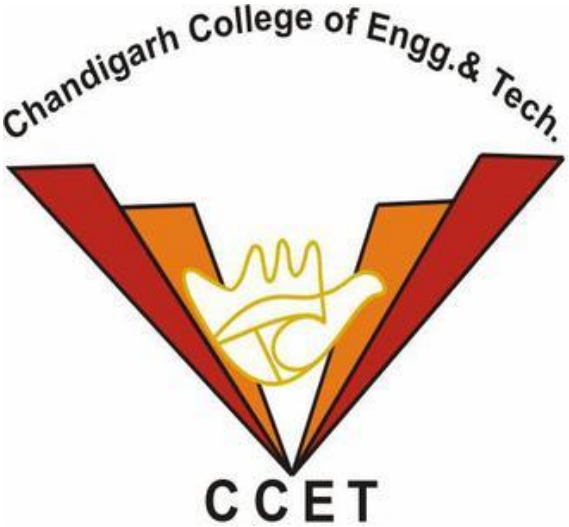
# MAJOR PROJECT SYNOPSIS




**Submitted To:**

**Dr. Santosh Kumar Yadav (Lecturer),**

**CSE Department**

**Submitted by:**

| Name | Roll No. | Semester |
|---|---|---|
| Himanshu Sharma | 9510/22 | 6th |
| Nikhil Samanta | 9521/22 | 6th |

## ➢ Introduction

The **Food Waste Management System** is an application to reduce food wastage by bridging the gap between food donors and those in need. It allows individuals, restaurants, or organizations with surplus food to donate it conveniently. Donors can provide details such as the type of food, quantity, location, and expiration date through a user-friendly interface. Simultaneously, NGOs or charitable organizations can register on the platform to access donation details and coordinate food collection. The system promotes efficient distribution by providing visibility into available food resources, helping to combat hunger while reducing environmental harm caused by food waste.

## ➢ Objective

The objective of the **Food Waste Management System** is to minimize food wastage and alleviate hunger by creating a seamless platform that connects food donors, such as individuals and businesses, with NGOs or people in need. The system aims to promote efficient food redistribution by allowing donors to share surplus food details and enabling NGOs to access and collect it promptly. By fostering collaboration between donors and recipients, the project seeks to address hunger, reduce environmental harm caused by food waste, and encourage sustainable practices in communities.

## ➢ Key Features

### 1. Food Donation Portal:

- A simple and intuitive interface for food donors (e.g., individuals, restaurants) to register their surplus food, including details like type, quantity, location, and expiration date.

### 2. NGO Registration:

- NGOs or charitable organizations can register on the platform to access information about food donations and coordinate pickups efficiently.

### 3. Donation Management:

- The system tracks all food donations, providing an organized view of available donations, their status, and donor details.
-

### 4. NGO Directory:

- A comprehensive list of registered NGOs with their contact information and location, making it easy for donors to connect directly if needed.

## 5. Search and Filter Options:

- Users can search or filter donations based on food type, location, or expiration date for efficient resource allocation.

## 6. Responsive Design:

- The app is mobile-friendly and accessible on various devices, making it convenient for users to donate or register on the go.

## 7. Database Integration:

- Uses SQL to store and manage data such as user details, donations, and NGO information securely and reliably.

## 8. Environmental Impact Reduction:

- Facilitates food redistribution, reducing food wastage and its negative impact on the environment.

## ➢ Software & Tools Used in project: -

1. **Programming Language: Python**

   Python is a versatile, high-level programming language known for its simplicity, readability, and efficiency. It is widely used in application development due to its vast ecosystem of libraries and frameworks, making it an ideal choice for the **Food Waste Management System**.

   **Key Features of Python for the Project:**

- **Ease of Development:**
    - Python's intuitive syntax accelerates the development process, enabling faster prototyping and implementation.
- **Multi-Platform Compatibility:**
    - Python applications are platform-independent, ensuring seamless deployment across devices and operating systems.

- **Rich Ecosystem of Libraries and Frameworks:**
    - Python offers powerful frameworks like **Kivy** and **KivyMD** for creating modern, touch-friendly user interfaces.
    - Libraries like **MySQL-connector** facilitate secure database management for storing donor, NGO, and donation data.
- **Image Processing and Data Validation:**
    - With libraries like **Pillow**, Python handles image uploads (e.g., food donation photos).
    - Built-in validation ensures accurate user inputs and prevents errors.

**Why Python?**
Python was chosen for its adaptability, extensive community support, and ability to seamlessly integrate various technologies required for the project. Its robust ecosystem ensures a scalable, maintainable, and user-friendly platform to achieve the objectives of reducing food waste and alleviating hunger.

2. **Frameworks:**

- **Kivy:**
  A Python framework used for building multi-platform applications with touch-friendly interfaces.

  Enables responsive layouts, smooth event handling, and seamless deployment across devices like Android, iOS, and desktops.
- **KivyMD:**

  An extension of Kivy that incorporates Google's Material Design components.

  Enhances the app's visual appeal with pre-designed UI elements like buttons, text fields, and navigation drawers, ensuring a modern and user-friendly interface.

  The combination of Kivy and KivyMD allows the Food Waste Management System to deliver both functionality and aesthetics. While Kivy ensures cross-platform compatibility and core app functionality, KivyMD adds a modern and professional design that improves user engagement.

3. **Database Management:**

- **MySQL:**
  A reliable and secure relational database management system used to store and manage data. Handles user details, donation records, NGO registrations, and transaction history efficiently. Ensures data integrity and enables seamless retrieval and updates through SQL queries.

4. **Python Libraries:**

- **Kivy & KivyMD:**
  - For building the app's core functionality and implementing a modern Material Design-inspired user interface.
- **MySQL Connector:**
  - To connect the application with the MySQL database for secure data storage and management.
- **Pillow:**
  - For handling and processing images, such as food donation photos.

5. **Development Tools:**

   - **VS Code:** For writing and debugging Python code efficiently.

6. **Version Control:**

   - **Git & GitHub:** For version control, collaboration, and maintaining the project's code repository.