**D.MOHITH CHARAN**

**VU21CSEN0101610**

**GMAIL:mdevupal@gitam.in**

**Problem Statement: E-Waste Monitoring System**

**Project Overview:**

The E-Waste Monitoring System is a console-based software application designed to assist both government and private organizations in managing the lifecycle of their electronic devices. The system tracks the usage of electronic items, monitors their condition, and alerts users when it’s time for replacement or recycling. The primary aim is to minimize environmental damage by ensuring responsible management of e-waste.

**Key Features:**

1. **Item Tracking:**
   * Users can input details about their electronic devices, including the name, purchase date, and expected lifespan.
   * The system automatically calculates the expiry date, indicating when the device should ideally be recycled.
2. **Status Monitoring:**
   * The system continuously monitors the status of all devices.
   * It alerts the user when a device is due for replacement or recycling, ensuring timely and responsible action.
3. **Recycling Management:**
   * Devices that have reached their expiry date are flagged for recycling.
   * The system helps users track which devices need to be disposed of or recycled, aiding in effective e-waste management.

**Benefits:**

* **Environmental Impact:** The system contributes to reducing e-waste by managing the lifecycle of electronic devices and ensuring they are recycled when no longer useful.
* **Organizational Efficiency:** Organizations can efficiently monitor their electronic assets, ensuring outdated devices are replaced promptly and responsibly.
* **User Awareness:** By tracking the lifespan of devices, the system encourages users to be more mindful of their electronic usage and disposal practices.

**Future Enhancements:**

1. **IoT Integration:**
   * Integrate IoT devices to automatically monitor the usage and condition of electronics, with real-time updates to the system.
2. **Notifications and Alerts:**
   * Implement email or SMS notifications to alert users when a device is nearing its expiry date or needs to be recycled.
3. **Mobile Application:**
   * Develop a mobile app to make the system more accessible and user-friendly for on-the-go monitoring.
4. **Recycling Information:**
   * Provide users with information about nearby recycling centers and services to facilitate proper e-waste disposal.
5. **Analytics and Reporting:**
   * Add features to generate reports on the amount of e-waste prevented or recycled, giving users insights into their environmental impact.

Code:

from datetime import datetime, timedelta

class E\_WasteItem:

def \_\_init\_\_(self, name, purchase\_date, lifespan\_years):

self.name = name

self.purchase\_date = datetime.strptime(purchase\_date, "%Y-%m-%d")

self.lifespan\_years = lifespan\_years

self.expiry\_date = self.purchase\_date + timedelta(days=lifespan\_years \* 365)

def check\_status(self):

today = datetime.now()

if today >= self.expiry\_date:

return f"{self.name} is due for recycling."

else:

return f"{self.name} is still in use."

def main():

items = []

while True:

print("\n--- E-waste Monitoring System ---")

print("1. Add Electronic Item")

print("2. Check Item Status")

print("3. Exit")

choice = input("Enter your choice: ")

if choice == '1':

name = input("Enter item name: ")

purchase\_date = input("Enter purchase date (YYYY-MM-DD): ")

lifespan\_years = int(input("Enter expected lifespan (years): "))

item = E\_WasteItem(name, purchase\_date, lifespan\_years)

items.append(item)

print(f"{name} added successfully!")

elif choice == '2':

for item in items:

print(item.check\_status())

elif choice == '3':

print("Exiting...")

break

else:

print("Invalid choice, please try again.")

if \_\_name\_\_ == "\_\_main\_\_":

main()

**OUTPUT:**



