Project Report

On

TRASH BIN SYSTEM

Submitted in partial fulfilment of the requirements for the award of

BACHELOR OF TECHNOLOGY

in

COMPUTER SCIENCE & ENGINEERING

(Artificial Intelligence & Machine Learning)

by

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BVRIT HYDERABAD College of Engineering for Women

(UGC Autonomous Institution | Approved by AICTE | Affiliated to JNTUH)

(NAAC Accredited - A Grade | NBA Accredited B.Tech. (EEE, ECE, CSE and IT)

Bachupally, Hyderabad – 500090

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2024-25

CERTIFICATE

This is to certify that the Project Report entitled **"TRASH BIN SYSTEM "** is a bonafide work carried out by **Ms. K. Vyshnavi (2WH1A6621), Ms. B. Sowmya (23WH1A6623), Ms. M. Suvarna (23WH1A6655)** in partial fulfillment for the award of B. Tech degree in **Computer Science & Engineering (AI&ML), BVRIT HYDERABAD College of Engineering for Women, Bachupally, Hyderabad**, affiliated to Jawaharlal Nehru Technological University Hyderabad, Hyderabad under my guidance and supervision. The results embodied in the project work have not been submitted to any other University or Institute for the award of any degree or diploma

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DECLARATION

We hereby declare that the work presented in this project entitled "**Trash Bin System** " submitted towards completion of Project work in II Year of B.Tech of CSE(AI&ML) at **BVRIT HYDERABAD College of Engineering for Women, Hyderabad** is an authentic record of our original work carried out under the guidance of **Ms. S.Annapoorna, Assistant Professor, Department of CSE(AI&ML).**

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TRASH BIN SYSTEM

AIM : To implement a simple Trash Bin system in C that allows users to manage files by deleting (moving to trash) and restoring them, using text files for persistent storage.

Algorithm for Trash Bin System:

1. Start the program.
2. Continuously repeat the following steps until the user chooses to exit.
3. Display a menu with the following options:
    - Show Files
    - Show Trash
    - Delete File
    - Restore File
    - Exit
4. Ask the user to enter their choice.
5. If the user chooses **"Show Files"**, then:
    - Open the file named files.txt.
    - Read all the lines from the file and store them in an array.
    - Display each file name along with its corresponding index number.
6. If the user chooses **"Show Trash"**, then:
    - Open the file named trash.txt.
    - Read all the lines from the file and store them in an array.
    - Display each trash item with its index number.
7. If the user chooses **"Delete File"**, then:
    - Open files.txt and load its content into a files array.
    - Open trash.txt and load its content into a trash array.
    - Display the list of files available for deletion.
    - Ask the user to select the number of the file they want to delete.
    - Move the selected file from the files array to the trash array.
    - Remove the selected file from the files array.
    - Save the updated files array back to files.txt.
    - Save the updated trash array back to trash.txt.

- Display a message saying "Moved to Trash".

8. If the user chooses **"Restore File"**, then:
    - Open trash.txt and load its content into a trash array.
    - Open files.txt and load its content into a files array.
    - Display the list of items in the trash.
    - Ask the user to select the number of the file they want to restore.
    - Move the selected file from the trash array to the files array.
    - Remove the selected file from the trash array.
    - Save the updated trash array back to trash.txt.
    - Save the updated files array back to files.txt.
    - Display a message saying "Restored successfully".
9. If the user chooses **"Exit"**, then:
    - Display a message saying "Goodbye!".
    - End the program.
10. Stop the process.

Procedure

1. Start the program.
2. Keep showing the menu until the user chooses to exit.
3. Show the following options to the user:
    - Show Files
    - Show Trash
    - Delete File
    - Restore File
    - Exit
4. Ask the user to enter a choice.
5. Based on what the user selects:

If the user selects "Show Files":

- Read all the file names from files.txt.
- Display the list of file names, each with a number next to it.

If the user selects "Show Trash":

- Read all the items from trash.txt.

- Display the list of trash items with numbers.

If the user selects "Delete File":

- Load the current list of files from files.txt.
- Load the current list of trash items from trash.txt.
- Show the list of available files.
- Ask the user to pick a number to delete.
- Move the selected file from the list of files to the trash list.
- Save the updated file list back to files.txt.
- Save the updated trash list to trash.txt.
- Tell the user that the file was moved to trash.

If the user selects "Restore File":

- Load the list of trash items from trash.txt.
- Load the current list of files from files.txt.
- Show the list of items in the trash.
- Ask the user to choose which item to restore.
- Move the selected item from the trash list back to the file list.
- Save the updated trash list to trash.txt.
- Save the updated file list to files.txt.
- Tell the user that the file was restored.

If the user selects "Exit":

- Show a "Goodbye!" message.
- End the program.

6. Repeat the process unless the user chooses to exit.

SOURCE CODE:

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>

#define MAX_ITEMS 100
#define MAX_LENGTH 256
#define DATA_FILE "files.txt"
#define TRASH_FILE "trash.txt"
```

```
int loadFromFile(const char *filename, char data[MAX_ITEMS][MAX_LENGTH]) {

   FILE *file = fopen(filename, "r");
   if (file == NULL) return 0;

   int count = 0;
   while (fgets(data[count], MAX_LENGTH, file) != NULL && count < MAX_ITEMS) {
      char *newline = strchr(data[count], '\n');
      if (newline != NULL) {
         *newline = '\0';
      }
      if (strlen(data[count]) > 0) {
         count++;
      }
   }

   fclose(file);
   return count;
}

void saveToFile(char data[MAX_ITEMS][MAX_LENGTH], int count, const char *filename) {
   FILE *file = fopen(filename, "w");
   if (file == NULL) {
      printf("Error opening file: %s\n", filename);
      return;
   }
   int i;
   for (i = 0; i < count; i++) {
      fprintf(file, "%s\n", data[i]);
   }

   fclose(file);
}

void showList(char data[MAX_ITEMS][MAX_LENGTH], int count, const char *title) {
   printf("\n--- %s ---\n", title);
   if (count == 0) {
      printf("No items found.\n");
   } else {
      int i;
      for (i = 0; i < count; i++) {
         printf("%d. %s\n", i + 1, data[i]);
      }
   }
}

void deleteItem() {
   char files[MAX_ITEMS][MAX_LENGTH];
   char trash[MAX_ITEMS][MAX_LENGTH];
```

```
    int fileCount = loadFromFile(DATA_FILE, files);
    int trashCount = loadFromFile(TRASH_FILE, trash);

    showList(files, fileCount, "Available Files");

    printf("Enter the number to delete: ");
    int choice;
    scanf("%d", &choice);

    if (choice >= 1 && choice <= fileCount) {
        strcpy(trash[trashCount], files[choice - 1]);
        trashCount++;
        int i;
        for (i = choice - 1; i < fileCount - 1; i++) {
            strcpy(files[i], files[i + 1]);
        }
        fileCount--;

        saveToFile(files, fileCount, DATA_FILE);
        saveToFile(trash, trashCount, TRASH_FILE);

        printf("Moved to Trash.\n");
    } else {
        printf("Invalid choice.\n");
    }
}

void restoreItem() {
    char files[MAX_ITEMS][MAX_LENGTH];
    char trash[MAX_ITEMS][MAX_LENGTH];

    int fileCount = loadFromFile(DATA_FILE, files);
    int trashCount = loadFromFile(TRASH_FILE, trash);

    showList(trash, trashCount, "Trash");

    printf("Enter the number to restore: ");
    int choice;
    scanf("%d", &choice);

    if (choice >= 1 && choice <= trashCount) {
        strcpy(files[fileCount], trash[choice - 1]);
        fileCount++;

        int i;
        for (i = choice - 1; i < trashCount - 1; i++) {
            strcpy(trash[i], trash[i + 1]);
        }
        trashCount--;
```

```
saveToFile(files, fileCount, DATA_FILE);
        saveToFile(trash, trashCount, TRASH_FILE);
        printf("Restored successfully.\n");
    } else {
        printf("Invalid choice.\n");
    }
}

int main() {
    int option;

    while (1) {
        printf("\n====== Trash Bin Menu ======\n");
        printf("1. Show Files\n");
        printf("2. Show Trash\n");
        printf("3. Delete File\n");
        printf("4. Restore File\n");
        printf("5. Exit\n");
        printf("Choose an option: ");
        scanf("%d", &option);

        switch (option) {
            case 1: {
                char files[MAX_ITEMS][MAX_LENGTH];
                int fileCount = loadFromFile(DATA_FILE, files);
                showList(files, fileCount, "Files");
                break;
            }
            case 2: {
                char trash[MAX_ITEMS][MAX_LENGTH];
                int trashCount = loadFromFile(TRASH_FILE, trash);
                showList(trash, trashCount, "Trash");
                break;
            }
            case 3:
                deleteItem();

                break;
            case 4:
                restoreItem();
                break;
            case 5:
                printf("Goodbye!\n");
                exit(0);
            default:
                printf("Invalid option.\n");
        }
    }
    return 0;
}
```

OUTPUT:

```
Trash Bin Menu
1. Show Files
2. Show Trash
3. Delete File
4. Restore File
5. Exit
Choose an option: 1
Files
1. photo.png
Trash Bin Menu
1. Show Files
2. Show Trash
3. Delete File
4. Restore File
5. Exit
Choose an option: 4
Trash
1. project.docx
Enter the number to restore: 1
Restored successfully.
Trash Bin Menu
1. Show Files
2. Show Trash
3. Delete File
4. Restore File
5. Exit
Choose an option: 1
--- Files
1. photo.png
2. project.docx
====== Trash Bin Menu
1. Show Files
2. Show Trash
3. Delete File
```

CONCLUSION:

This C program serves as a simple yet effective simulation of a trash bin system using text files, allowing users to view, delete, and restore file names through a menu-based interface. It manages active files in **files.txt** and deleted files in **trash.txt**, demonstrating how deleted items can be recovered instead of permanently removed. The project highlights fundamental concepts of file handling, arrays, string operations, and menu-driven programming in C, making it a valuable learning exercise for beginners to understand basic file I/O and data manipulation in a practical and interactive way.

Github Link: https://github.com/23wh1a6621/TRASH_BIN_SYSTEM

https://github.com/Sowmya-Bollumalla/TRASH_BIN_SYSTEM/tree/main

https://github.com/Suvarnamaddi/TRASH_BIN_SYSTEM