

# ***C PROGRAMMING PROJECT***

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# TITLE PAGE

## Girls Hostel Management System (GHMS)

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Course: C Programming Project

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# ABSTRACT

This below project implements the (Girls hostel management system) GHMS through command line in C language. It works in two modes: Admin Mode and User Mode. As an admin, one could add hostels, update hostel information, and view all hostels and etc. On the other hand, users could input their preferences regarding budget, AC requirement, attached bathroom requirement, and maximum distance they would prefer from the college(UPES) After giving those inputs, the system recommends the most suitable hostel based on a weighted scoring algorithm. All the hostel information is maintained inside a text file (data/hostels.txt) in a simple pipe-separated format to act like a lightweight database. This project covers file handling, structures, dynamic memory allocation, modular programming, and menu-driven interaction in C.

# PROBLEM DEFINITION

The goal of this C project is to build a simple yet functional and easy **Girls Hostel Management System** where:

**Admin can:**

1. Add new hostels
2. Update existing hostel information
3. View all hostels

**User can:**

1. Enter preferences (budget, AC, attached bathroom, distance)
2. Get the best hostel recommendation
3. Book a room (updates “occupied” count).

# SYSTEM DESIGN

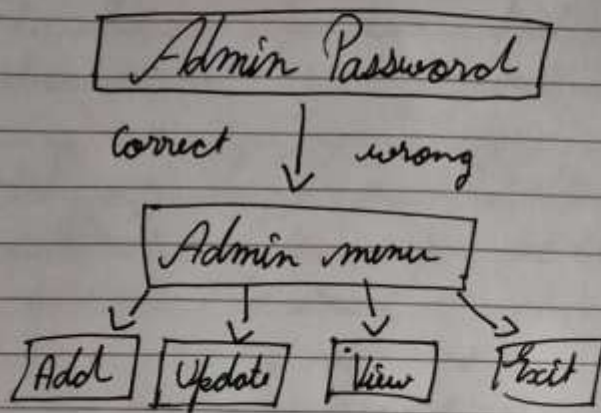
## #Architecture Diagram

**The system follows a modular design:**

1. Main.c → handles main menu & mode switching
2. Admin.c → admin functions
3. User.c → user functions
4. Hostel.c → file handling, loading, saving, recommendation logic
5. Hostel.h, Admin.h, User.h → header files
6. Hostels.txt → acts as database

# #Flowchart

## \* Admin Mode flowchart



## \* User Mode flowchart

Enter Preferences → Load Hostels → Filter Hostels → Score Hostels → Recommend Best → As Booking → Update file

# IMPLEMENTATION DETAILS

## 1. File structure

The project follows this structure:

src/ → main.c, admin.c, user.c, hostel.c

include/ → admin.h, user.h, hostel.h

data/ → hostels.txt

docs/ → Project\_Report.pdf

assets/ → screenshots

## 2. Data Storage Format (data\hostels)

Each hostel is stored on one line using **pipe (|) separators**:

```
{ id|name|price|ac|attached_bath|distance|capacity|occupied }
```

## 3. Functions Implemented

### #Admin functions

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adminLogin() → verifies password (admin123)

adminMenu() → add/update/view hostels

addHostel() → writes a new hostel to file

updateHostel() → replaces an existing hostel



## #User Functions

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Takes user preferences

Calls recommendHostel() to choose best hostel

Books a room by increasing occupied

## #Hostel Functions

-----

loadHostels() → reads from hostels.txt

saveHostels() → writes all hostels to file

recommendHostel() → scores each hostel and picks best match

# TESTING & RESULTS

## 1.Booking a room

```
ganneev@DESKTOP-DNGRLC6:~/C_project$ ./ghms
```

```
--- GIRLS HOSTEL MANAGEMENT ---
1. Admin Mode
2. User Mode
3. Exit
Choose: 2

-- User Mode --
Enter your yearly budget: 200000
Do you want AC? 1/0: 0
Attached bathroom? 1/0: 1
Max distance (m) you're willing to travel: 300
Recommended: Woodstock (id 2)
Price: ₹200000 | AC:0 | Bath:1 | Distance:200.00km | Free beds:5
Do you want to book this hostel? 1/0: 1
Booking recorded. Contact admin for confirmation.
```

```
C_project > data > ≡ hostels.txt
```

1	1 Crystal Grand 260000 1 1 70.00 60 51
2	2 Woodstock 200000 0 1 200.00 40 36
3	3 on-campus 180000 0 0 10.00 30 10
4	

## 2. Adding a hostel

```
ganneev@DESKTOP-DNGRLC6:~/C_project$ ./ghms
```

```
--- GIRLS HOSTEL MANAGEMENT ---
1. Admin Mode
2. User Mode
3. Exit
Choose: 1
Enter admin password: admin123

-- Admin Menu --
1. Add hostel
2. Update hostel
3. View hostels
4. Exit admin
Choose: 1
Enter name: Crystal Elemento
Enter price per month (int): 280000
AC? 1/0: 1
Attached bath? 1/0: 1
Distance (km): 60
Capacity: 70
Hostel added.
```

```
C_project > data > ≡ hostels.txt
```

1	1 Crystal Grand 260000 1 1 70.00 60 51
2	2 Woodstock 200000 0 1 200.00 40 36
3	3 on-campus 180000 0 0 10.00 30 10
4	4 Crystal Elemento 280000 1 1 60.00 70 0
5	

# CONCLUSION

This project shows, in effect, how to develop a modular C - language application based on the handling of files, dynamic memory, admin and user input, and structured data. The system correctly maintains hostels information and provides intelligent suggestions according to user preferences. In addition it also includes more attractive features like deleting or updating hostels information by using the admin mode. This system is reliable and useful for people finding a girls hostel with their preferences.

# REFERENCES

1. Pdf's provided by sir
2. Google (For explanation of commands)
3. The student information code provided by sir.

THANK  
YOU

~GANNEEV KAUR

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