TRIBHUVAN UNIVERSITY

INSTITUTE OF ENGINEERING

THAPATHALI CAMPUS

Proposal

On

Hostel Finder

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Abstract

The young people who come to the valley from various parts of the country with an aim to study at best educational institutions are forced to live in private hostels due to lack of accommodation on campus. Many students face problem finding a suitable place to stay. There is information gap between hostels and the hostel seeker.

The Hostel Finder application works as the platform for the hostel seekers to get authentic information directly from the hostel owners themselves. The review and rating system reflects the credibility of the hostels. This makes it easy to find a good hostel for any one new to the city.

Keywords: Hostel, Owner, Seeker, Information

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List of Abbreviations

DBMS	Data Base Management System
GCC	GNU Compiler Collection
GBD	GNU Debugger
HDD	Hard Drive Disk
IDE	Integrated Development Environment
MB	Mega Byte
MHz	Mega Hertz
RAM	Random Access Memory

1. INTRODUCTION

Hostel Finder is a simple and easy program to find a hostel nearby the required location or area. As the number of students in Higher Studies rises, so does the requirement of hostels for accommodating them. Finding the right hostel for an individual depending upon both one's preferences and the facilities provided by the hostel should, ideally, be an easy process in this day and age. However, due to the lack of adequate systems, this is not the case. To ease this situation, we the second-year students of Thapathali Campus studying Bachelor in Computer Engineering are aiming to develop a program called Hostel Finder.

1.1 Background

Most of the students who come to study at another place by leaving their home like to stay in a hostel. The hostel is considered the second home for the students. Finding an appropriate hostel that meets one's need is a tedious job. Keeping this thing in mind, we came up with an idea to create a program to help the students find hostels around them easily and simply. Our proposed program would help the hostel owners to add the details of their hostel so that hostel seekers can find and get information about their hostels. Thus, our proposed program aims to create a bridge between hostel seekers and hostel owners.

1.2 Motivation

Finding a suitable hostel for an individual is a crucial task as it is a second home for them. It is desire of every hostel searching individual to get suitable hostel with appropriate facilities at reasonable cost. Being a student we understood the pain of hostel seekers so we came with an idea of creating an application to provide relief to those individuals to some extent.

1.3 Problem Definition

Placing ourselves on the shoes of the clueless students looking for a suitable hostel, our application Hostel Finder would become a bridge between hotel seekers and hostel owners. We all realized that we should think of making an application using C++

Programming language knowledge and skills to bring a solution for all the hostel administration as well as hostel seekers, who are in search of this type of application.

1.4 Objectives

The main objectives of our project are listed below:

- To create a Hostel Finder application and demonstrate it to department and related faculty teachers.
- To provide a platform for hostel seekers to easily find and get information about hostels according to their requirements.
- To facilitate hostel owners to advertise and provide information about their hostel to hostel seekers.

1.5 Project Application

Our proposed project can have the following applications:

- This program can be used to find hostel around the required area/location with desired/appropriate facilities.
- This program can be used to get detailed information of different hostels listed within the program.
- This program can be used to explore hostels without physically visiting the hostels individually which eventually will save time and hostel seekers can get more information easily and make choices wisely.
- This program can be used for tracking hostels according to different categories within specified locations or areas.

1.6 Scope of Project

Hostel Finder is targeted at two audiences; hostel finders and hostel owners and intends to serve as a bridge between them. As the application does not include complex technical aspects, people having knowledge about basic computer operations can easily use our application. The owner of the hostel himself/herself can use our program to add and update the information about their hostel. There is no need of any specific person

to be hired to run our program. On the other hand, students can also search for the hostels according to their requirements easily.

2. LITERATURE REVIEW

The Hostel Finder is developed specifically for the hostel owners to manage different activities in the hostel and it also makes it easy for the students to search for hostels without any unnecessary on-field visits. From the name and location of the hostels to the kind of food they serve, everything that a student would want to know can be included in this system. Such features can be found in many other applications and websites that our project is inspired from. Some of them are mentioned below:

2.1 YOUR Hostel

YOUR Hostel is a platform consisting of details of several hostels that are briefly described in it. Details like name, location, number of available beds, contact number of hostel owner, monthly fee, and facilities like internet, hot water, laundry, and different types of food are included here. Students can easily search for the hostels that are in their desired location and choose among them. YOUR Hostel also has a rating system for hostels which gives more ideas to students about choosing the right hostel for them. [1]

2.2 KTM Hostel

KTM Hostel consists of a collection of different types of hostels in different locations of Kathmandu where we can choose a hostel with our required location and facilities from our map and search bar. The students can know the contact number of the hostel owner and contact them for any queries. Students can know about the number of beds available, monthly fee, varieties of food, availability of hot water, laundry facility, and some other facilities without even contacting the owner. [2]

2.3 Hostel Management System

It is a C++ based project to manage the details of Hostel, Rooms, Beds, Allottees, Rent, etc. It manages all the information about Hostel, Payments, Rent, etc. The project is built at the administrative end and thus only the administrator is guaranteed access. The purpose of the project is to build an application program to reduce the manual work of managing the Hostel, Rooms, Payments, and Beds. It tracks all the details about the Beds, Allottees, Rent, etc. It provides the searching facilities based on various factors

such as Hostel, Beds, Category, Location, etc. It also provides the features like editing, adding and updating records of hostel. [3]

With our proposed project, we would like to work on similar techniques to build a Hostel Finder program based on Object-Oriented Programming Concepts using the C++ programming language. Our hostel finder program will have the ability to search the hostels based on their name or location. Also, the users would be able to search the hostels regarding the gender of the person. The owner of a hostel can create a profile of their hostel containing details like name, location, gender category, total number of the beds, monthly fee, contact number, availability of vegetarian food and so on. The details of a hostel could only be edited by an authorized person having the username and password for logging in to the login section. The essence of all the things written above is that our project would be user-friendly to the hostel owners as well as to the students looking for hostels and would help them in performing their tasks related to finding hostels and getting information about different hostels in an efficient way.

3. PROPOSED SYSTEM ARCHITECTURE

The project 'Hostel Finder' helps students to find and get information about Hostels around them. The proposed architecture of our project can be described in the following sub-headings below:

3.1 Flowchart

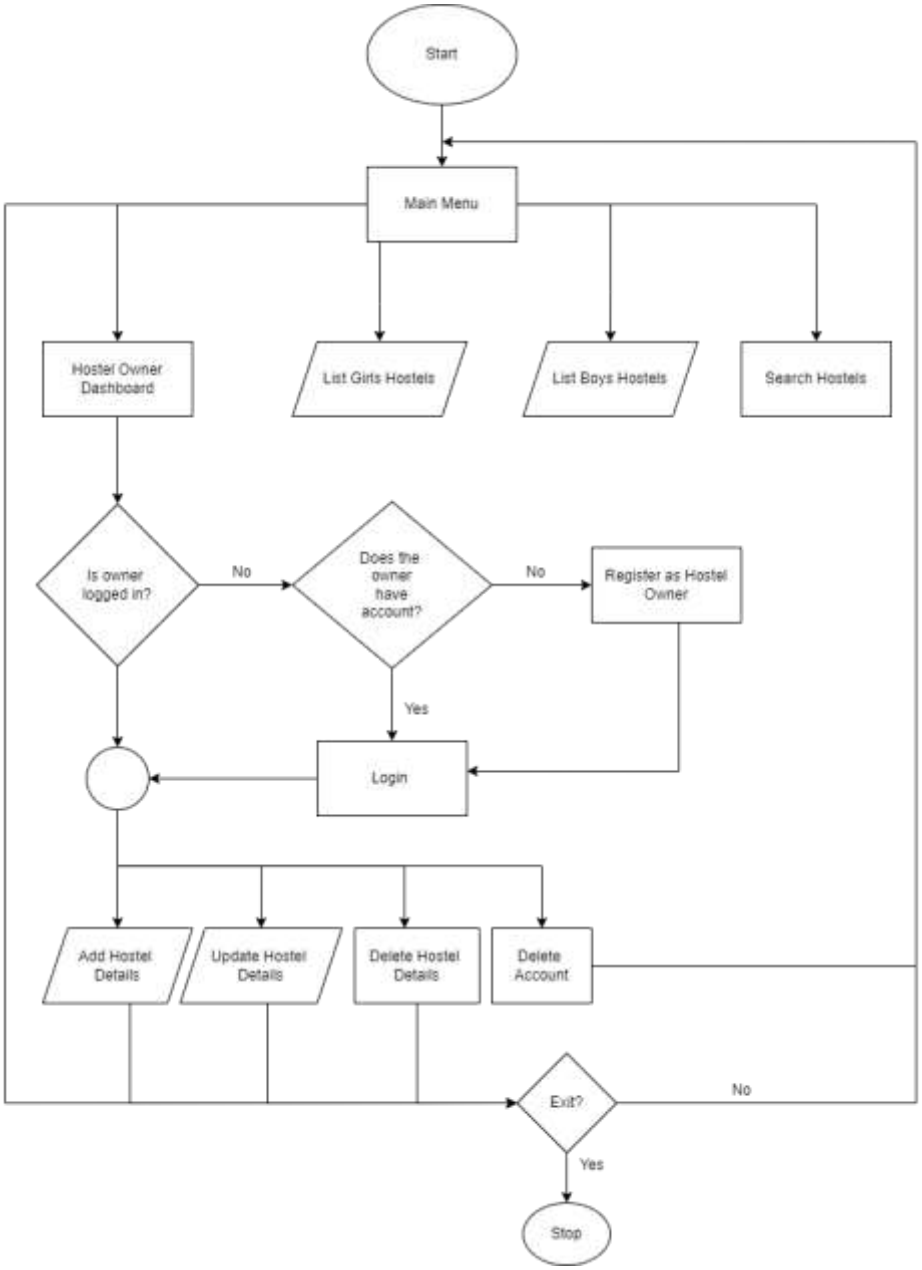


Figure 3-1 : Flowchart

3.2 Project Description

The proposed flowchart of the project 'Hostel Finder" is shown above. It is supposed to be developed using various user-defined functions and in-built library files of C++ programming language. The same system is accessed by both the hostel seekers and the hostel owners. The hostel owners manage the details about their hostels through their hostel owner account. They will be provided with the dashboard. The hostel-seeking user can find the hostels and their details. Authenticated hostel owners can access their dashboard and manage the information about their hostels.

The data is collected through simple forms and stored in binary files. The search results will be displayed in tabular form. Login credentials are secured using a hashing algorithm and the hostel details stored in the files are also encrypted. The program will be made to handle all the errors made by the user.

3.3 Data Flow Diagram

The below-attached diagram simplifies the flow of data within the application.

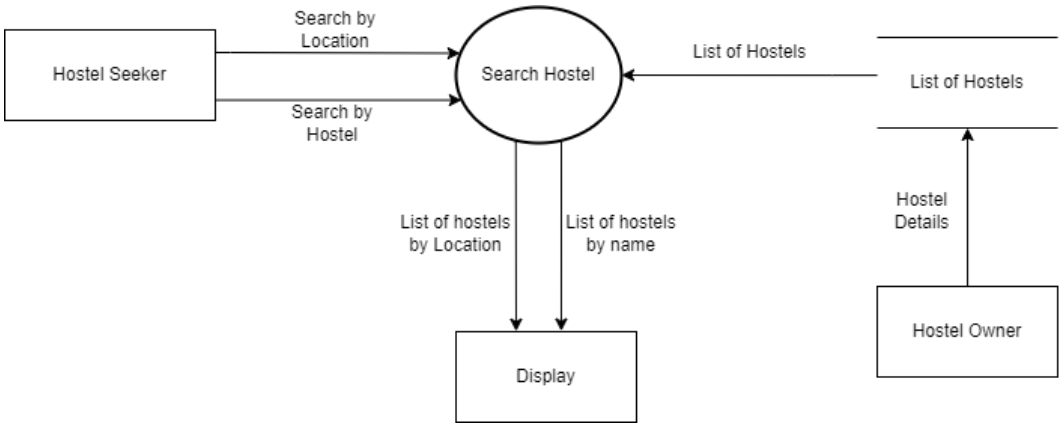


Figure 3-2 : Data Flow Diagram

3.3 Tools and Environment

3.3.1 IDE Used

Visual Studio Code 2022: VS Code will be used in our project for writing the source code of our program.

Compiler: GNU g++

Debugger: gbd

3.3.2 Programming Language Used

C++ : C++ Programming Language will be used in our project. It is an object-oriented programming language.

4. METHODOLOGY

4.1 Search Hostels Section

The main functionality of the program is to search the hostels and provide information to the user. In this section, the user will be at first asked whether he/she is looking for Boys Hostel or Girls Hostel. After confirming the category of hostel the user is searching for, the program will provide the facility of searching the hostel either by name or location. According to the option selected by the user, the program will further ask the name or location (if search by location is selected by the user) and then it will display the desired hostels.

4.2 Boys Hostels Section

Under this section, the program will list all the Boys Hostels available in the database with necessary details like name, location, contact information, etc. The user will be able to see detailed information of a particular hostel by selecting it.

4.3 Girls Hostels Section

Similar to Boys Hostels section under this section, the program will list all the Girls Hostels available in the database with necessary details like name, location, contact information, etc. The user will be able to see detailed information of a particular hostel by selecting it.

4.4 Hostel Owner Dashboard

The program will contain a Dashboard section to allow hostel owners to add their hostels and manage their hostel details. For adding a hostel to the program, the owner must have created an account and he/she needs to enter their login details to further proceed to add the hostel into the program. In case, the owner hasn’t created an account earlier, the program will provide facility of creating new account. After creating an account, the user can add hostel into the program.

4.4.1 Create New Account

To create a new account the user will have to enter the details like Username, Name, Contact Number and Password. After creating an account, the user will be able to use his/her login details to add a hostel into the program.

4.4.2 Login

For adding a hostel into the program, the user will be asked to enter their login details. For logging in, the user will be asked Username and Password entered while creating the account. If the login details entered by the user match with the database of the program then the program will proceed to the next step otherwise, the program will display an error message saying "*Please Enter Correct Details*".

4.4.3 Add Hostel

After successfully logging in, the user will be able to add their hostel details. For adding a hostel following details will be required to be filled in by the hostel owner:

- Name of Hostel
- Location
- Category (Boys/Girls)
- Total No. of Beds
- No. of Available Beds
- Monthly Fee
- Vegetarian Food Available or not
- Contact No
- Special Facilities (if any), etc.

All the details entered by the hostel owner will be saved into the program and later those details will be shown in the search operation.

4.4.4 Update Hostel Details

Our proposed program will provide a feature to edit/update the details of the hostel added by the owner. They can update the desired details individually under this section.

The program will ask whether to update details or not individually, if new detail is to be entered then new data should be entered otherwise it can be left blank to keep the previous data.

4.4.5 Delete Hostel Details

Under this section, the hostel owner will be able to delete the added hostels under his/her account. After deleting the hostel, it will be deleted from the database of the program and won't be displayed in the hostels' list section.

4.4.6 Delete Owner Account

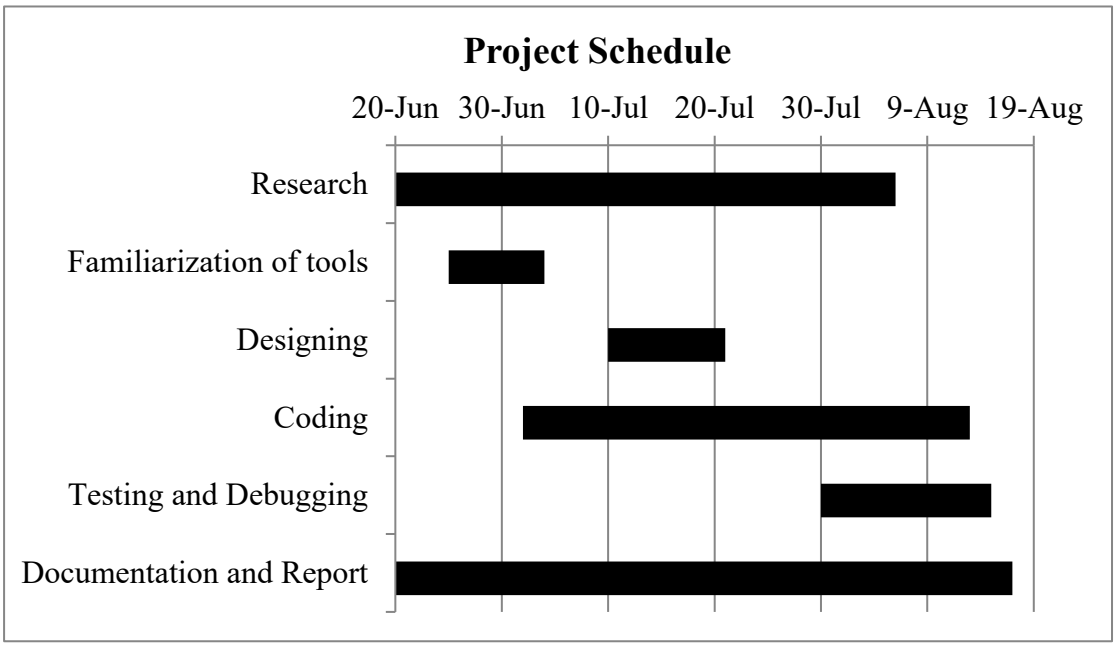
Our proposed program will provide the facility to delete the owner's account as well. Along with owner account deletion, the program will also delete the added hostels under that account and will remove the details of the owner as well as added hostels from the database.

4.5 Exit

The program can be terminated from this option. After performing various tasks, the program should be exited. This option helps to exit the program without any error. All the data entered will be remained in the local drive of the user's computer system and won't be lost after terminating the program.

5. TIME ESTIMATION

Table 5-1 : Time Estimation Gantt Chart



6. FEASIBILITY ANALYSIS

6.1 Economic Feasibility

It is a C++ based program and hence it doesn't require much budget. It can be run using a properly functioning computer. So, the cost of the project is minimum.

6.2 Technical Feasibility

It works on the features of C++ like library functions, various user-defined functions, file handling, class, object polymorphism, inheritance and error handling. So, this program has less technical complexity.

6.3 Operational Feasibility

The application requires 32-bit (or more) operating system with a compatible compiler for C++.

6.3.1 Software Requirements

For the program to run computer must meet the following software specifications:

- Operating System: - WINDOWS 98 or newer.
- Application Software: - Visual Studio or Code::Blocks with GCC or any C++ compiler.

6.3.2 Hardware Requirements

For the program to run computer must meet the following hardware specifications:

- Intel Core2 Duo 1333 MHz or higher.
- 4MB caches memory or higher.
- 128 GB HDD and 1GB RAM or higher

References

[1] "Your Hostel," 101 INFOTECH, [Online]. Available: http://yourhostel.com.np/. [Accessed 5 July 2022].

[2] "KTM Hostel," [Online]. Available: https://ktmhostel.com/. [Accessed 5 July 2022].

[3] freeproject, "C++ Project on Hostel Management System," 5 May 2015. [Online]. Available: https://www.freeprojectz.com/c-projects-projects/c-project-hostel-management-system. [Accessed 7 July 2022].