



**AGH – UNIVERSITY OF SCIENCE AND
TECHNOLOGY**

Project documentation for
project title

Object-oriented programming languages

Electronics and Telecommunication EN, III year

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1. Project description

Project 74:

Design and implement classes for a hotel booking system where a user can search a hotel in a given city and book it.

2. User's manual

The program itself is very user friendly and straight forward to run, once the build is done one can execute the main.cpp file and be greeted with this menu:

3. Compilation.

The project is available on my gitlab in case any of the build functionalities do not work out unexpectedly. The project was developed in Visual Studio Code on Linux. It should however be workable on any operating system capable of supporting c++ and executable by main.cpp in any terminal. A c++ builder and code runner was used, any generic replacement should do the job just fine.

4. Source files

The project consists of the following source files:

- *main.cpp* – includes the booking.h and a single function call to menu() in menu.h
- *booking.h* – contains the booking subsection and includes CityHotel.h, some time keeping libraries.
 - struct Booking;
 - bool isValidDate(string date); //name is p explanatory, checks if date format is valid
 - int daysBetween(string checkIn, string checkOut); // days between the bookings
 - bool checkOutAfterCheckIn(string checkIn, string checkOut); // checks if the checkout is after the checkin date
 - void addBooking(string fileName); //adds a new booking, main section for code as well vvimp
 - void deleteBooking(string fileName); //deletes a booking has some work to be done its too harsh
 - void viewBookings(string fileName); // view the previous bookings
- *CityHotel.h* – contains the class for city and hotel, their objects and the submenus to view them. Includes booking.h
 - void viewCities(); //view the list of cities, leads to view hotels menu
 - void C1Hotels();
 - void C2Hotels(); //YES I KNOW THIS IS REPETITIVE
 - void C3Hotels();
 - void C4Hotels();
 - void C5Hotels();

- void hotelchoiceannoying();
- void viewAllHotels(); // view the hotels
- bool wantToBook(); // asks if the person wants to book the hotel, is causing some issues
- *menu.h* – contains all the declarations and the main menu() function.
- int menu();// main menu

5. Dependencies

- The following external libraries are used in the project:
- chrono – Library for time duration operations. Website: <https://en.cppreference.com/w/cpp/header/chrono>.
- ctime – Library for time operations. Website: <https://en.cppreference.com/w/cpp/header/ctime>.
 iostream – Standard input/output stream library. Website: <https://en.cppreference.com/w/cpp/header/iostream>.
- fstream – Library for reading and writing files. Website: <https://en.cppreference.com/w/cpp/header/fstream>.
- string – Library for string operations. Website: <https://en.cppreference.com/w/cpp/header/string>.
- algorithm – Library for various algorithms operations. Website: <https://en.cppreference.com/w/cpp/header/algorithm>.

6. Class description

In the project only two classes namely City and Hotel were created:

```
class City { //as the name suggests it is representing the cities
public:
    string cityName; //the name of the specific city is a public string
    City(string city) : cityName(city) {} //constructor
    void viewCity() { //the only function that just displays the city name}};

class Hotel { //self explanatory hotel class
private:
    string hotelName; //few more variables than just the name
    int pricePerNight; //price
    string roomType; //type of room (delux, basic, standard etc?)
public:
    Hotel(string name, int price, string type) { //constructor}
    string getHotelName() { //returns hotel name}
    int getPricePerNight() { //returns price per night}
    string getRoomType() { // returns room type}
    int calculateStayPrice(int stayDuration) { // calculates the total price by
taking the price per night and stay duration from the booking.h }
    bool wantToBook(){ //asks if you want to book this particular hotel }
```

```
void aboutHotel(){ //tells you about the hotel and then asks if you want to
book it };;
```

7. Resources

In the project the following resources are used:

- The "bookings.txt" is a text file containing information about hotel bookings for users for the benefit of program permanence, with the following columns:
 - User: name of the user who made the booking
 - Hotel: name of the hotel that the booking was made for
 - Checkin: check-in date of the booking
 - Checkout: check-out date of the booking
 - Duration: length of stay in days
 - Price: total cost of the booking.

Bookings.txt can be autogenerated if building for the first time.

8. Future development

- Future development could include more city and hotel objects.
- Perhaps having an efficient loop to generate the submenus for hotels in a city: a dictionary would be a good approach.
- More things about cities can be shown, much like in hotel features.
- Discount codes can be implemented.
- One thing can be fixed is the delete reservation system where it is too "savage" with deleting the entries ie. If there is an entry for a person named "Jackson" and when deleting you only type in "Jack" it will be deleting the Jackson entries as well.

9. Other

Link to the gitlab:

<https://gitlab.com/asingh31/oopl-hotel>

Link to the readme for more developmental ideas of process development:

<https://gitlab.com/asingh31/oopl-hotel/-/blob/main/README.md>