

School of Computing
Faculty of
Engineering



SECJ2013-06 STRUKTUR DATA DAN ALGORITMA (DATA STRUCTURE AND ALGORITHM)

ASSIGNMENT: 1 SORTING AND SEARCHING

**Group Name: Group 11
HOSTEL MANAGEMENT SYSTEM**

Members:

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Video link: <https://youtu.be/q9Xgo6VJd4A>

Introduction

We are assigned to design a project of Hostel Management System. The aim of this project is to give student and staff a view of the hostel. This system is made in such a way that a minimum educated and simple computer knowledge so that any user can understand it. There basically two types of users who can use this system who are students and staff. Students can book hostel rooms whereas staff can view overall booking details of all students as well as conduct sorting.

Problem Statement

Typically, on the normal basis of hostel room booking, students are required to manually register themselves at the college office nearby. This manual system slows down the students' registration session and causes human errors to occur such as one's physical form may be displaced instead of storing it in a system. Another issue arises when the staff have to view many forms at once which may lead to confusion and takes longer time to settle down.

Hence, our group have proposed a system that helps with the hostel management by implementing quick sort concept to sort the students' matric number and basic sequential search concept which identifies if the college desired is available in the system or not. With the presence of our system, students may not need to queue a long line filling in the physical form.

Objectives

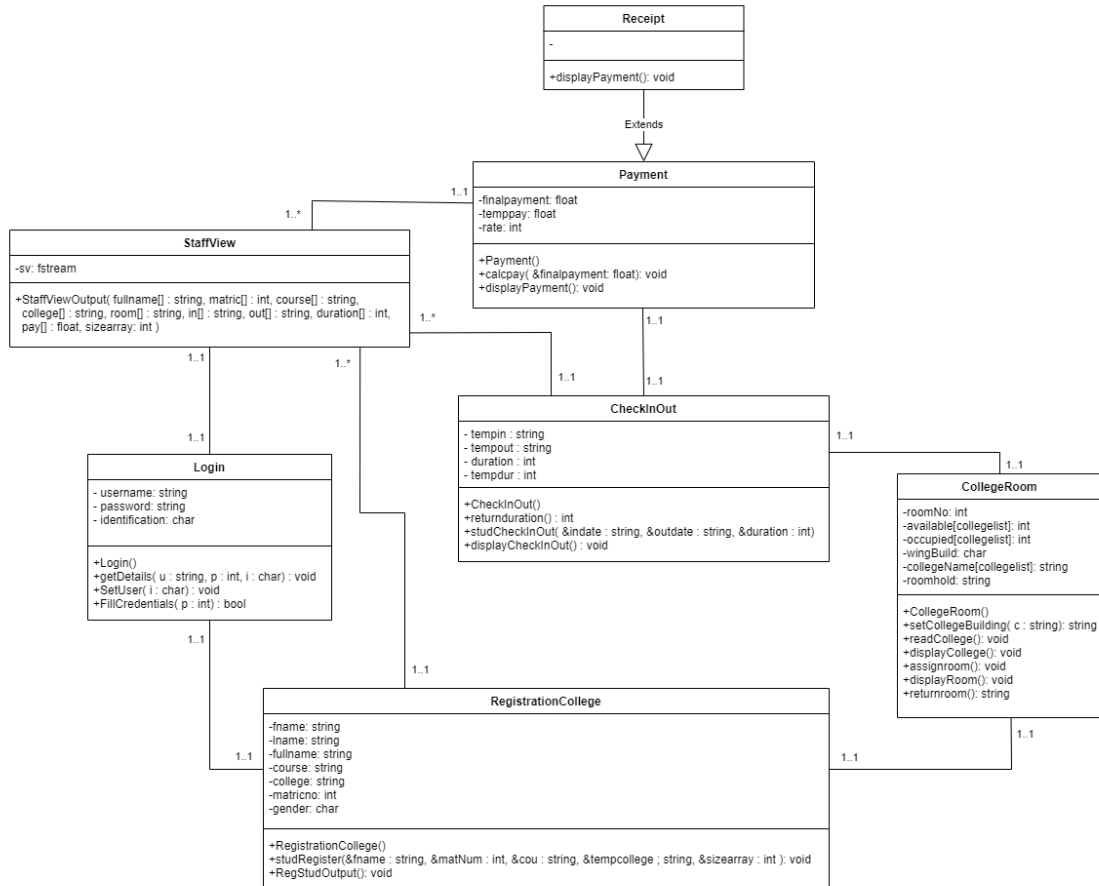
1. Provide centralized hostel management system.
2. Provide staff with an easier view of booking details done by students.
3. Prevent data loss by storing the students' booking details in the system.
4. Allow an efficient engagement from the students to navigate through the system while input necessary data for the hostel booking.

1. Identify attributes and member functions suitable for each case. (10M)

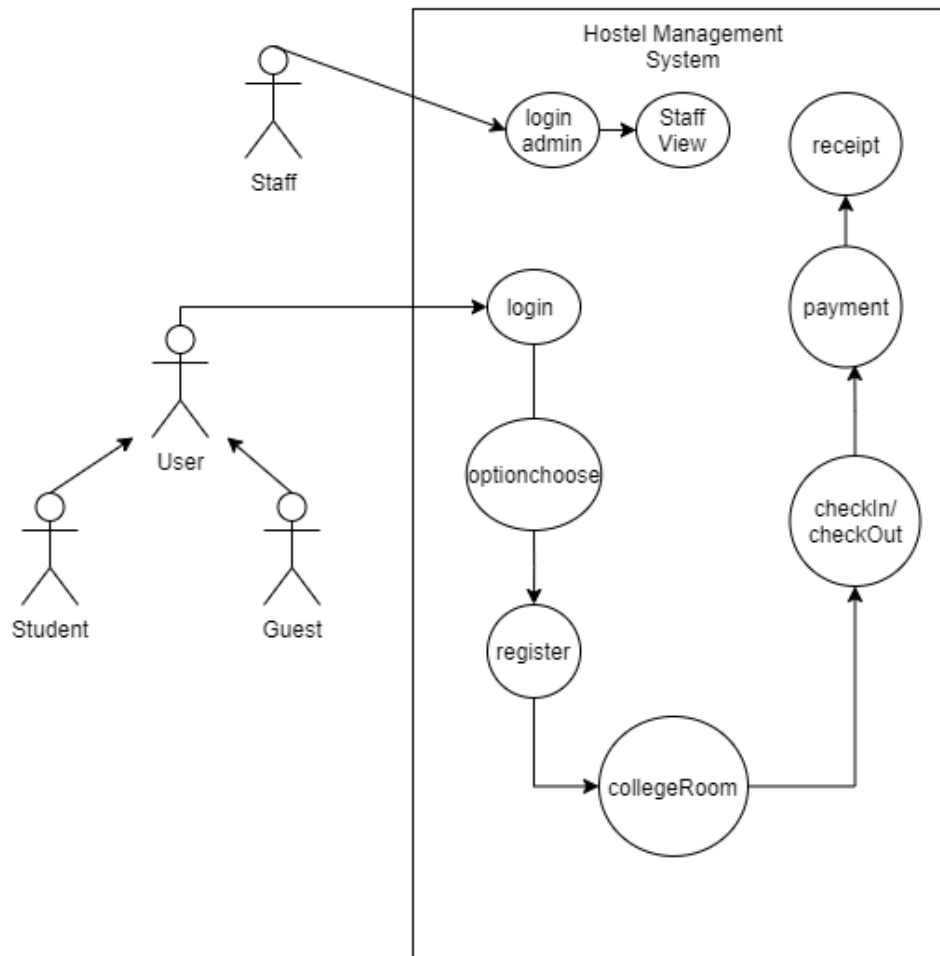
Attributes	Member Functions
LogIn() (log in)	void getDetails() – declaration of variables void SetUser() – identify if user is student or admin bool FillCredentials() – determine if password is true or false
StaffView()	void StaffViewOutput() – display all data collected from all student registered
RegistrationCollege ()	void studRegister() – to get student data void RegStudOutput() – display student data
CollegeRoom()	string setCollegeBuilding() – basic sequential search for desired college void readCollege() – read college list from data input void displayCollege() – display college data void assignroom() – assign room number, floor and wing building void displayRoom() – display the room number
CheckInOut()	void studCheckInOut() – get input from user to fill in details for check in, check out and duration void displayCheckInOut() – display check in, check out and duration
Payment()	void calcpay() – calculate payment void displayPayment() – display final payment
Receipt()	void displayPayment() – display receipt

2. Draw the class diagram. Draw use case diagram that shows the user and functionality of the system. (10M)

Class Diagram



Case Diagram



Summary

We hope that prototype proposed delivers the benefits to the students and staffs in various aspects. The prototype has proven to achieve the objectives mentioned before. Not only the staff can easily view the hostel booking details, the students are able to input their credentials efficiently and more secure. The improvisation of the prototype can be implemented on the next assignment where we are required to use linked list concept to delete and insert the hostel booking.