# Final Report
# (Hostel Management System)

**Course Code:** CS254 **Course Title:** DBMS Lab

**Semester:** B. Tech $4^{th}$ Sem **Section:** S1

**Academic Year:** 2020-21 **Course Instructor:**Dr. Annappa B and Mr. Sharath Yaji

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## 1 Abstract

**Brief Description:**

We will be building a self-sufficient hostel management system. The hostel's structure would be quite similar to that of NITK, we will have separate blocks for boys and girls, the students belonging to the same batch will be sharing a room if needed. Each hostel block will be having four sub-blocks

- 1st sub-block: Triple sharing rooms for 1st years.
- 2nd sub-block: Double sharing rooms for 2nd year.
- 3rd and 4th sub-blocks: Single occupancy rooms for 3rd, 4th years students respectively

When a newly enrolled student register and logs into the hostel portal they will be able to go for room allocation, the allocation will happen serially for the 1st year students i.e they won't be given the option to choose their roommates or rooms, the rooms will be filled unless the maximum capacity of three is reached.

As the 2nd years have a double occupancy room in their block hence, they have to register in pairs. Those without a partner will be kept in the waiting table and pairs will be formed with the ones in the waiting table in that order.

The 3rd, 4th year students will get to have single occupancy rooms on a first come first serve

basis.

The hostel management system will also have a provision to register the wardens. Wardens will have the following authorities:

1. Enable/Disable allocation and thus set the allocation period.
2. To view the hostel related complaints from the students.

Thus, the hostel management system will help to run the room allotment and maintenance issues effectively by saving time and making the process more efficient.

# 2 Introduction

A student has to first register in the portal. A student cannot register multiple times. Once the registration is successfully completed, he/she can log in to the portal. As per the student's year, they will be given an option for room booking. The student cannot go for room allocation if they are already allocated a room. Second year students who currently do not have a roommate yet, will opt for a room individually such student data will be kept at the waiting table and they will be paired in that order. A student can generate several complaints. However, they won't be able to see the complaints generated by other students. Once the student has accessed the portal, he/she can log out if needed.

A second year student who applies with a partner where the partner is already has name in waiting table, then such registration will not be valid. A student can get the contact details of the warden of his/her respective block. Also, every student can get contact details of all the wardens from the main hostel dashboard page( in contact us page).

Every warden has to be allocated exactly one block, and each block will have at most one warden. We have created a registration form for the wardens where the warden has to fill in the required fields. A warden cannot register multiple times. Once the registration is complete, the warden can log in to the portal and view the complaints generated by the hostel students and the data of the student residing in the warden's hostel block. The warden can log out if needed.

There are separate blocks for both boys and girls. Also, students from same year reside in the same hostel block. Hence, total 8 blocks are available in the hostel.

A superuser will only have the privilege, to add data in the buildings and block tables. The superuser manages this from the admin portal.

We are giving the wardens the authority to set the room allocation period for the hostel portal. This is done by changing the changing the value of is_room_allocation_set in the room_allocation table by the wardens.

**A layout of the structure of the hostel:**

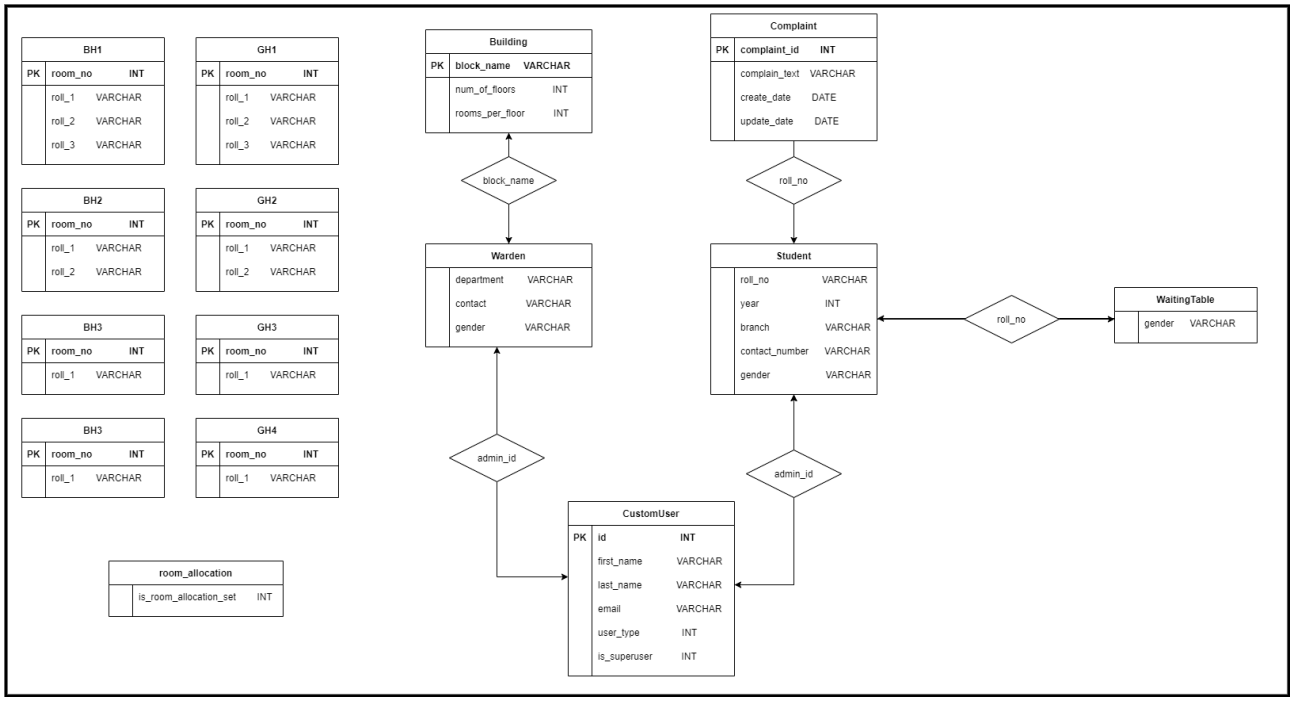
GIRLS HOSTEL:

| Block Name | No. of Floors | No. of Rooms/per | No. of students per room | Total students |
|---|---|---|---|---|
| GH1 | 4 | 25 | 3 | 300 |
| GH2 | 3 | 50 | 2 | 300 |
| GH3 | 4 | 75 | 1 | 300 |
| GH4 | 4 | 75 | 1 | 300 |

BOYS HOSTEL:

| Block Name | No. of Floors | No. of Rooms/per | No. of students per room | Total students |
|---|---|---|---|---|
| BH1 | 4 | 50 | 3 | 600 |
| BH2 | 4 | 75 | 2 | 600 |
| BH3 | 6 | 100 | 1 | 600 |
| BH4 | 6 | 100 | 1 | 600 |

# 3 ER Diagram


BH1
PK room_no INT
roll_1 VARCHAR
roll_2 VARCHAR
roll_3 VARCHAR
GH1
PK room_no INT
roll_1 VARCHAR
roll_2 VARCHAR
roll_3 VARCHAR
BH2
PK room_no INT
roll_1 VARCHAR
roll_2 VARCHAR
GH2
PK room_no INT
roll_1 VARCHAR
roll_2 VARCHAR
BH3
PK room_no INT
roll_1 VARCHAR
GH3
PK room_no INT
roll_1 VARCHAR
BH3
PK room_no INT
roll_1 VARCHAR
GH4
PK room_no INT
roll_1 VARCHAR
room_allocation
is_room_allocation_set INT
Building
PK block_name VARCHAR
num_of_floors INT
rooms_per_floor INT
block_name
Warden
department VARCHAR
contact VARCHAR
gender VARCHAR
admin_id
Complaint
PK complaint_id INT
complain_text VARCHAR
create_date DATE
update_date DATE
roll_no
Student
roll_no VARCHAR
year INT
branch VARCHAR
contact_number VARCHAR
gender VARCHAR
roll_no
WaitingTable
gender VARCHAR
admin_id
CustomUser
PK id INT
first_name VARCHAR
last_name VARCHAR
email VARCHAR
user_type INT
is_superuser INT

# 4 Source Code

```
def room_register_2(request):
        roll_1 = request.POST.get('roll_1'),roll_2 = request.POST.get('roll_2')
        name_1 = request.POST.get('name_1'),name_2 = request.POST.get('name_2')
        year = request.POST.get('year'),gender = request.POST.get('gender')
        if gender == "Female":
            if GH2.objects.filter(roll_1=roll_1).exists() or
            GH2.objects.filter(roll_2=roll_1).exists():
                return render(request, 'studentDashboard.html', {})
            if GH2.objects.filter(roll_1=roll_2).exists() or
            GH2.objects.filter(roll_2=roll_2).exists():
                return render(request, 'studentDashboard.html', {})
            latest_count = GH2.objects.count()
            mod = latest_count % 50
            quotient = int(latest_count / 50)
            room_no = 100*(quotient+1) + mod + 1
            room = GH2(room_no=room_no, roll_1=roll_1, roll_2=roll_2),room.save
                ()
        else:
            if BH2.objects.filter(roll_1=roll_1).exists() or
            BH2.objects.filter(roll_2=roll_1).exists():
                return render(request, 'studentDashboard.html', {})
            if BH2.objects.filter(roll_1=roll_2).exists() or
            BH2.objects.filter(roll_2=roll_2).exists():
                return render(request, 'studentDashboard.html', {})
            latest_count = BH2.objects.count()
            mod = latest_count % 50
            quotient = int(latest_count / 50)
            room_no = 100*(quotient+1) + mod + 1
            room = BH2(room_no=room_no, roll_1=roll_1, roll_2=roll_2),room.save
                ()
        return render(request, 'studentDashboard.html', {})
def room_register_1_3_4(request):
        roll_no = request.POST.get('roll_no'),name = request.POST.get('name')
        year = request.POST.get('year'),gender = request.POST.get('gender')
        contact_number = request.POST.get('contact')
        if Student.objects.filter(roll_no=roll_no).exists() == False:
            return render(request, 'studentDashboard.html', {})
        if int(year) == 1:
            if gender == "Female":
```

```
            if GH1.objects.filter(roll_1=roll_no).exists() or GH1.objects.
                filter(roll_2=roll_no).exists() or GH1.objects.filter(roll_3=
                roll_no).exists():
                return render(request, 'studentDashboard.html', {})
            latest_room = GH1.objects.order_by('room_no').last()
            print(latest_room)
            if latest_room == None:
                new_room = GH1(room_no=101, roll_1=roll_no),new_room.save()
            elif latest_room.roll_2 == None:
                latest_room.roll_2 = roll_no,latest_room.save()
            elif latest_room.roll_3 == None:
                latest_room.roll_3 = roll_no,latest_room.save()
            else:
                latest_count = GH1.objects.count(),mod = latest_count % 25
                quotient = int(latest_count / 25)
                room_no = 100*(quotient+1) + mod + 1
                room = GH1(room_no=room_no, roll_1=roll_no)
                room.save()
        else:
            if BH1.objects.filter(roll_1=roll_no).exists() or BH1.objects.
                filter(roll_2=roll_no).exists() or BH1.objects.filter(roll_3=
                roll_no).exists():
                return render(request, 'studentDashboard.html', {})
            latest_room = BH1.objects.order_by('room_no').last()
            if latest_room == None:
                new_room = BH1(room_no=101, roll_1=roll_no),new_room.save()
            elif latest_room.roll_2 == None:
                latest_room.roll_2 = roll_no, latest_room.save()
            elif latest_room.roll_3 == None:
                latest_room.roll_3 = roll_no,latest_room.save()
            else:
                latest_count = BH1.objects.count()
                mod = latest_count % 25
                quotient = int(latest_count / 25)
                room_no = 100*(quotient+1) + mod + 1
                room = BH1(room_no=room_no, roll_1=roll_no),room.save()
    elif int(year) == 3 or int(year) == 4:
        if gender == "Female":
            if int(year) == 3 and GH3.objects.filter(roll_1=roll_no).exists
                ():
```

```
            return render(request, 'studentDashboard.html', {})
        elif int(year) == 4 and GH4.objects.filter(roll_1=roll_no).
            exists():
            return render(request, 'studentDashboard.html', {})
    else:
        if int(year) == 3 and BH3.objects.filter(roll_1=roll_no).exists
            ():
            return render(request, 'studentDashboard.html', {})
        elif int(year) == 4 and BH4.objects.filter(roll_1=roll_no).
            exists():
            return render(request, 'studentDashboard.html', {})
    if gender == "Female":
        if int(year) == 3:
            latest_count = GH3.objects.count()
        else:
            latest_count = GH4.objects.count()
        mod = latest_count % 75
        quotient = int(latest_count / 75)
        room_no = 100*(quotient+1) + mod + 1
        if int(year) == 3:
            room = GH3(room_no=room_no, roll_1=roll_no)
        else:
            room = GH4(room_no=room_no, roll_1=roll_no)
        room.save()
    else:
        if int(year) == 3:
            latest_count = BH3.objects.count()
        else:
            latest_count = BH4.objects.count()
        mod = latest_count % 75
        quotient = int(latest_count / 75)
        room_no = 100*(quotient+1) + mod + 1
        if student.year == 3:
            room = BH3(room_no=room_no, roll_1=roll_no)
        else:
            room = BH4(room_no=room_no, roll_1=roll_no)
return render(request, 'studentDashboard.html', {})
```

**Link to complete source code in GitHub**

# 5 Results

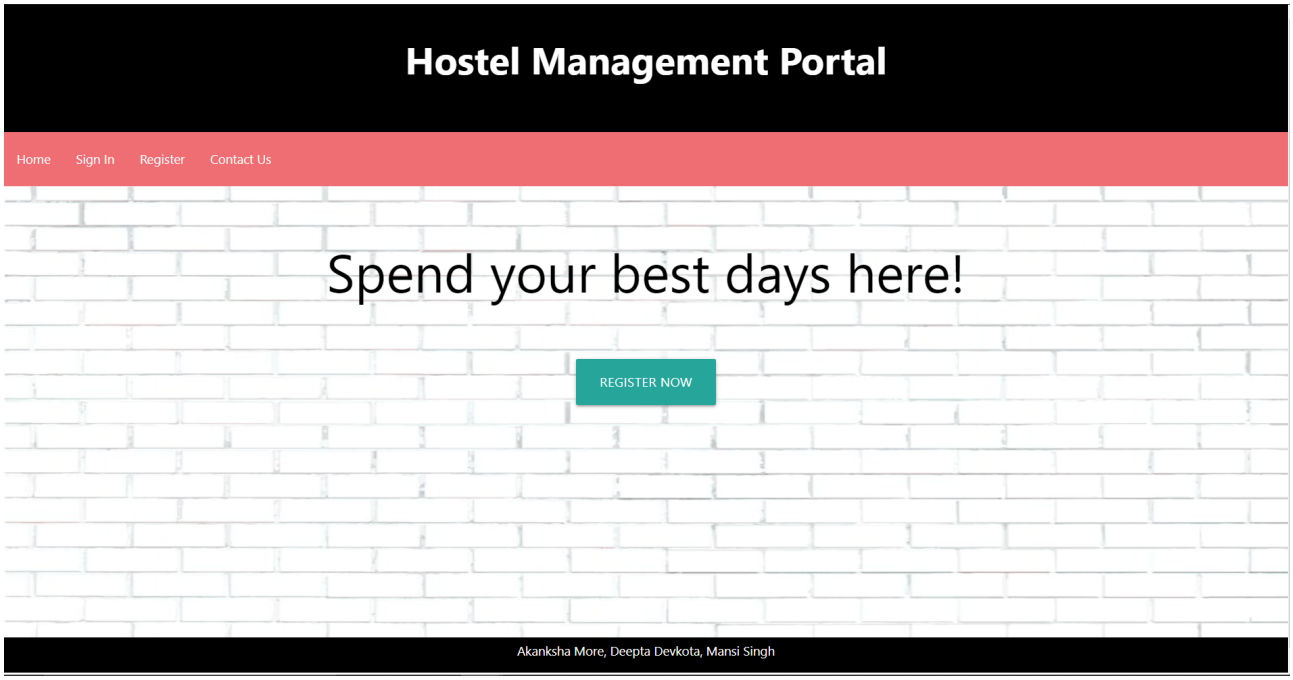



Figure 1: Home page of the hostel portal

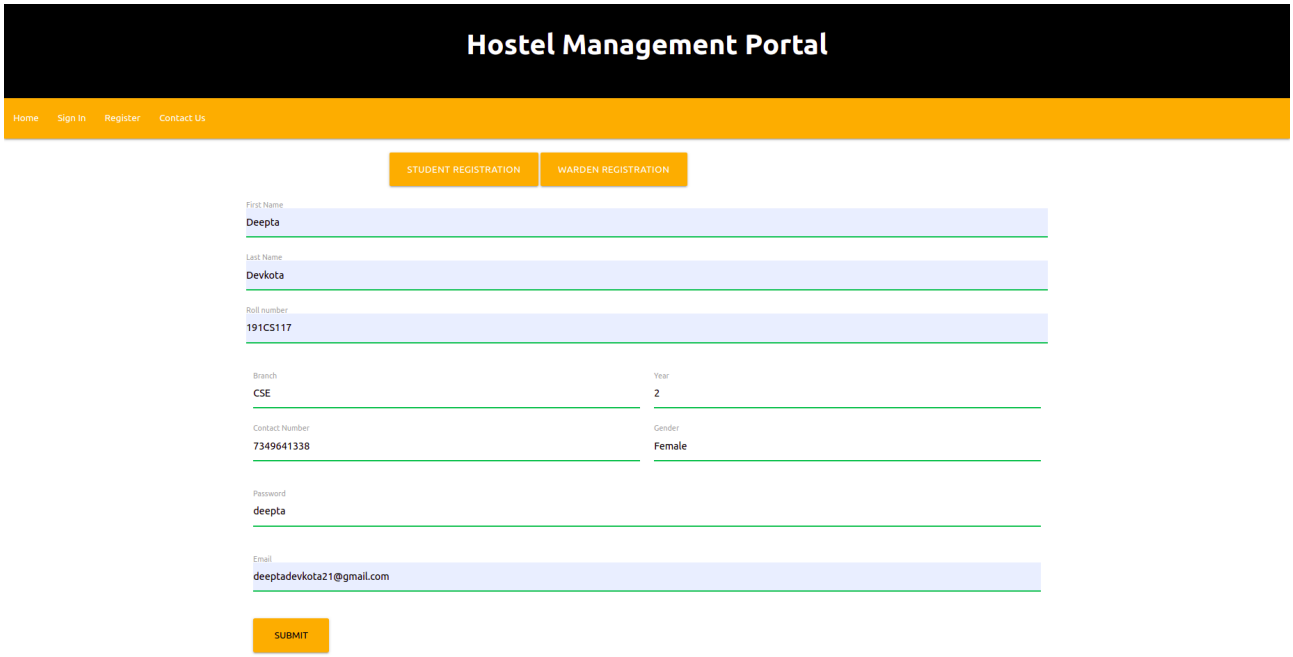



Figure 2: Registration form page for the students

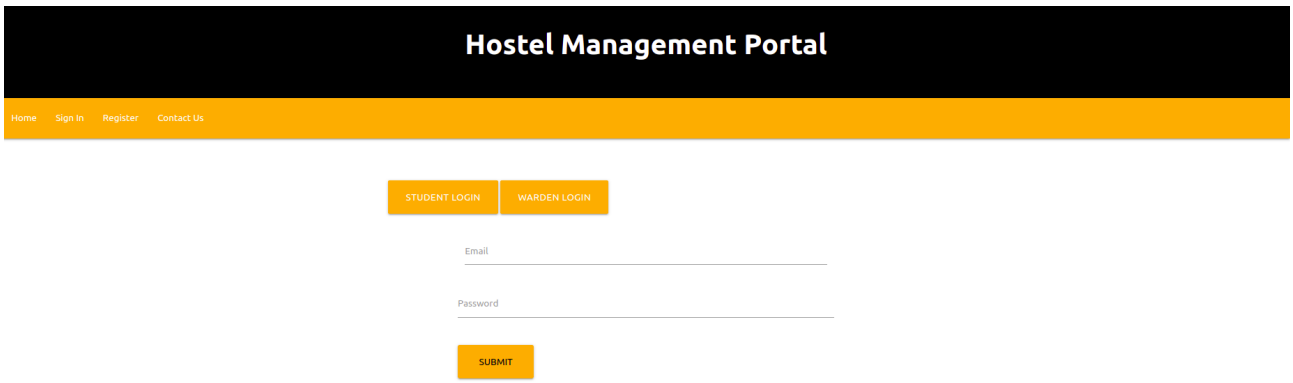



Figure 3: Student Login

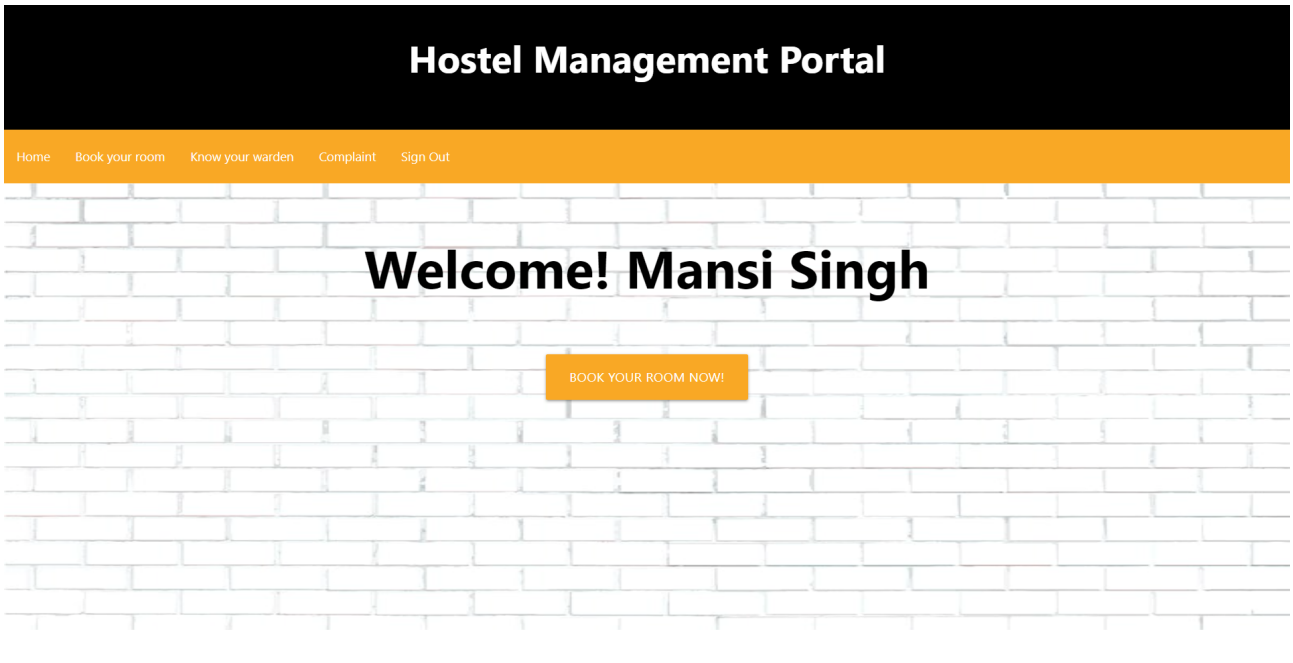



Figure 4: Student Dashboard

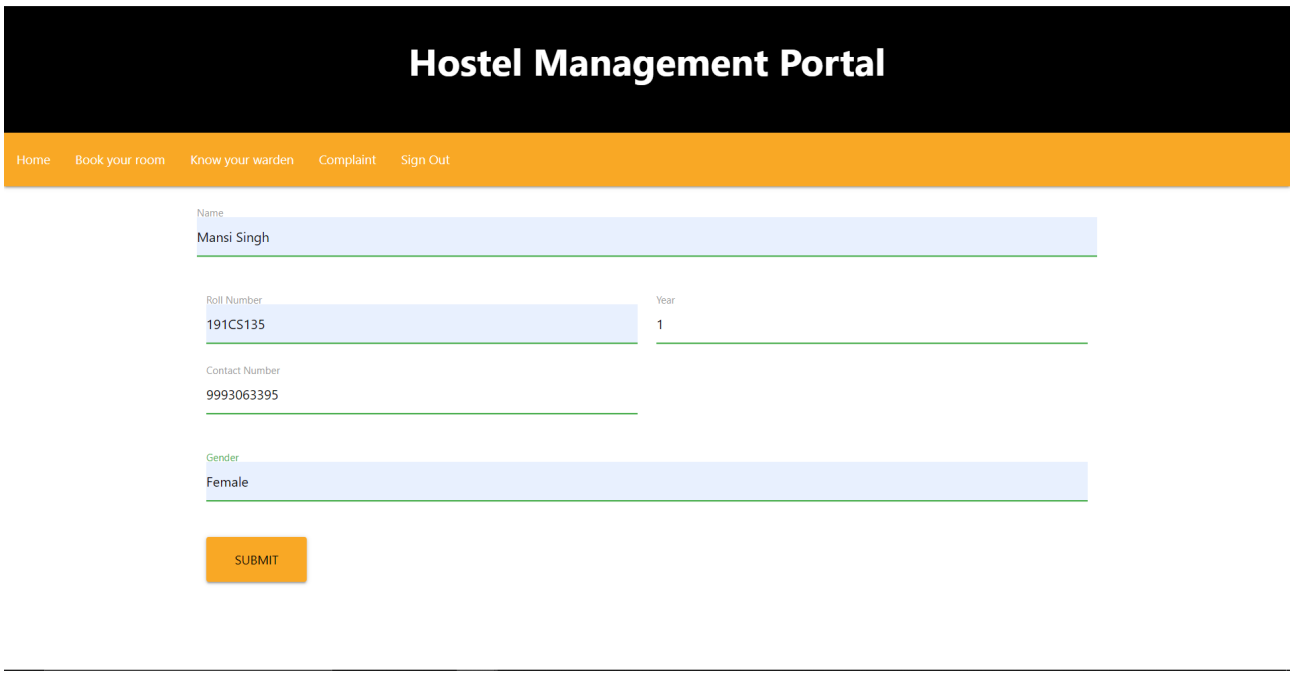



Figure 5: Room registration for 1st, 3rd and 4th year students

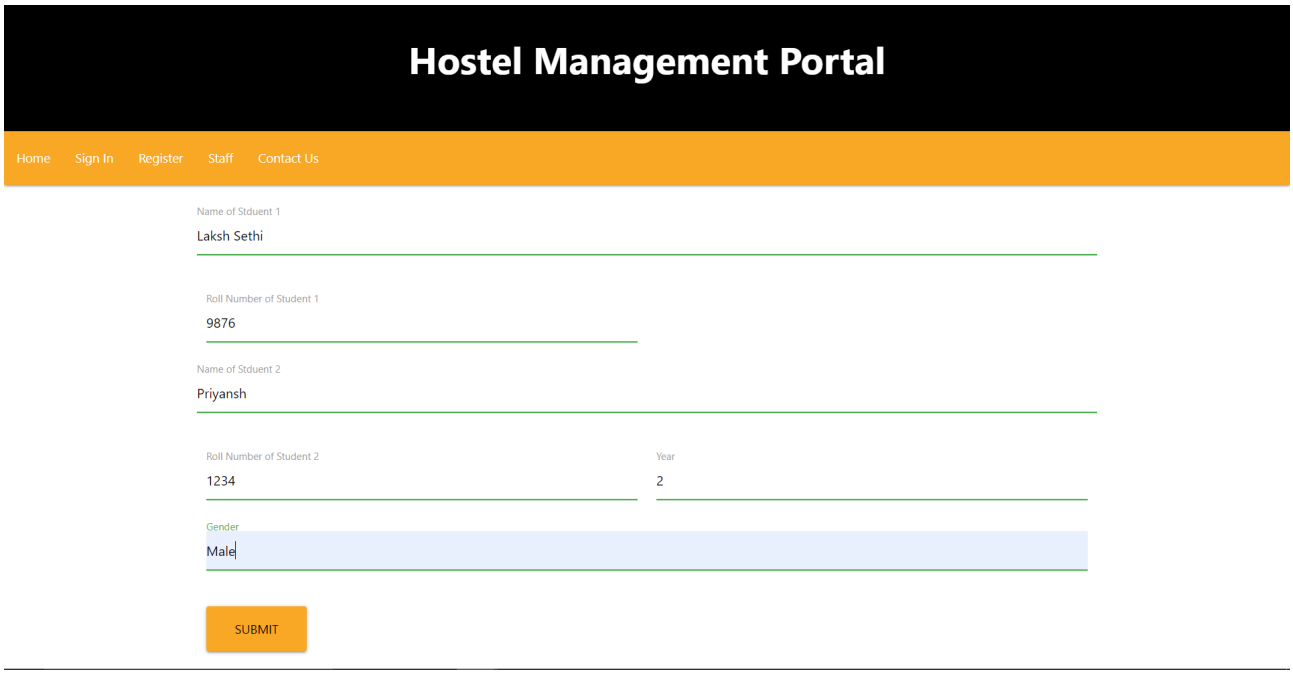



Figure 6: Room registration for 2nd year students

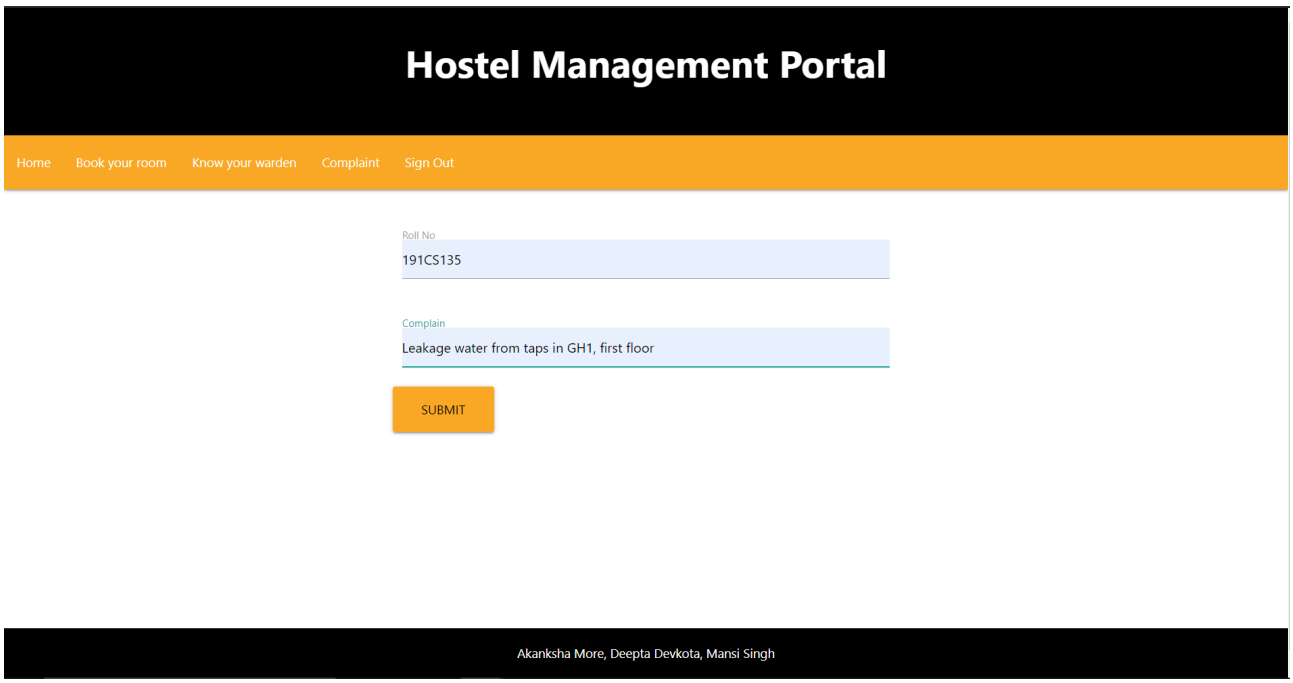



Figure 7: Complain Form for students

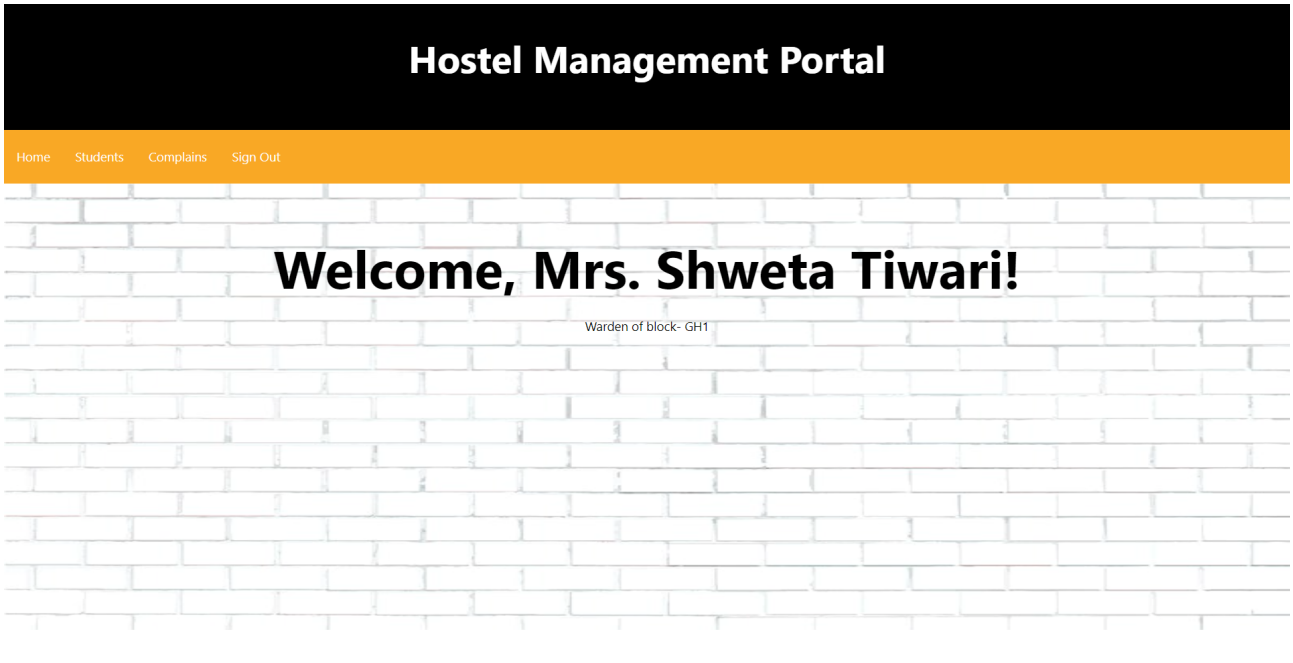



Figure 8: Warden Dashboard

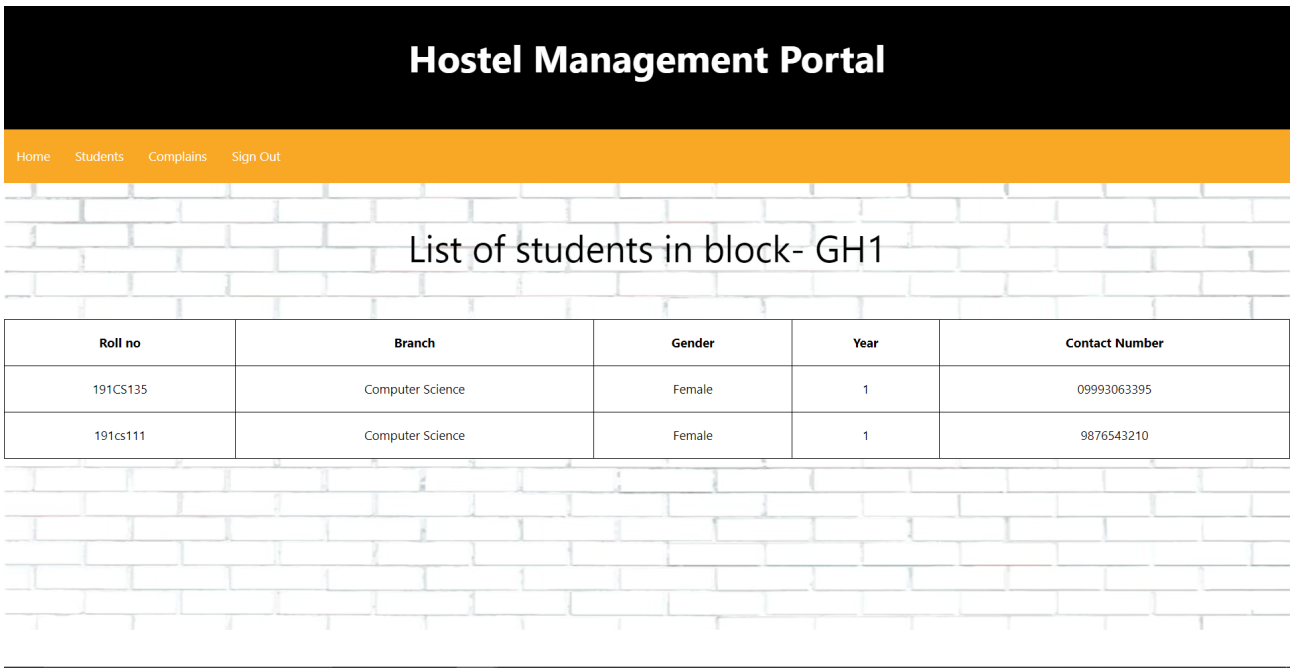



Figure 9: Student list viewed by the warden

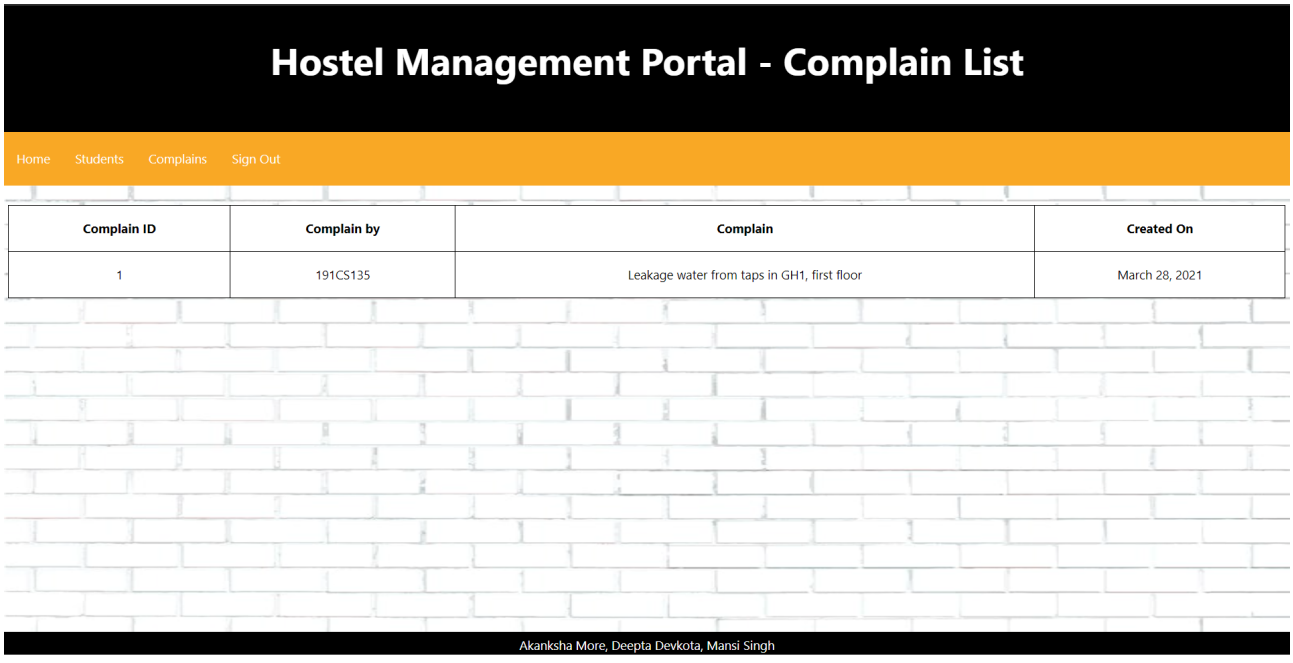



Figure 10: Complaint List of the students viewed by the wardens

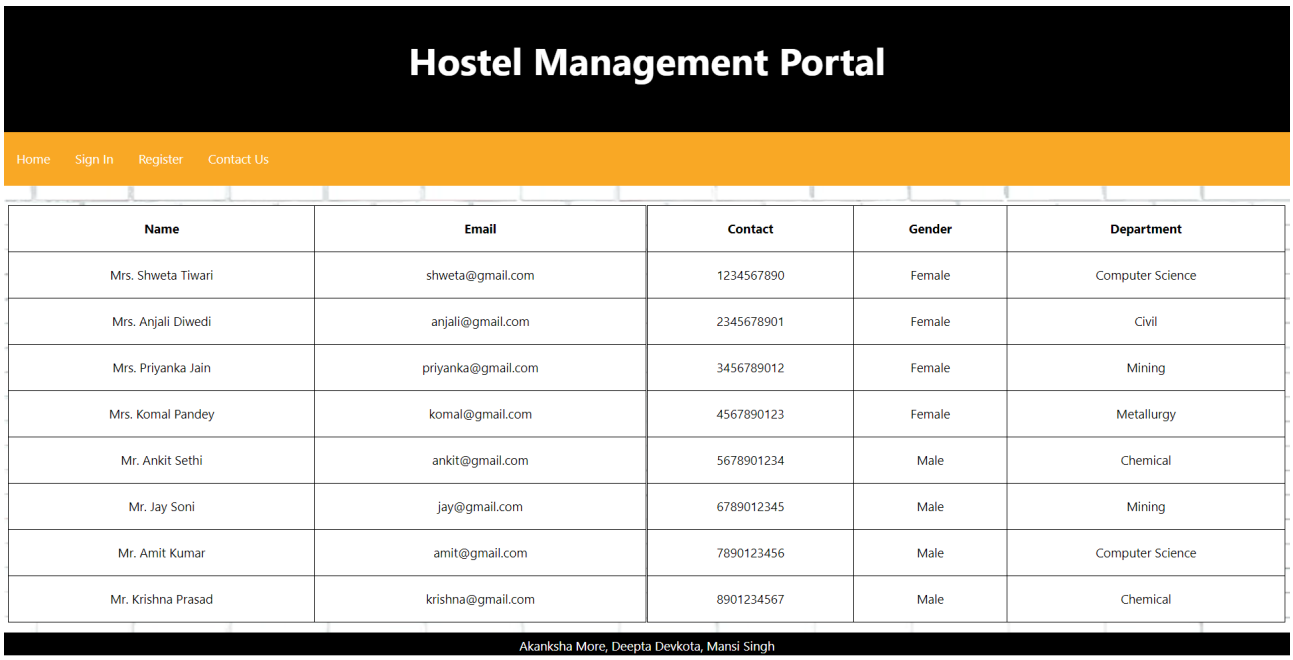



Figure 11: Contact Us page

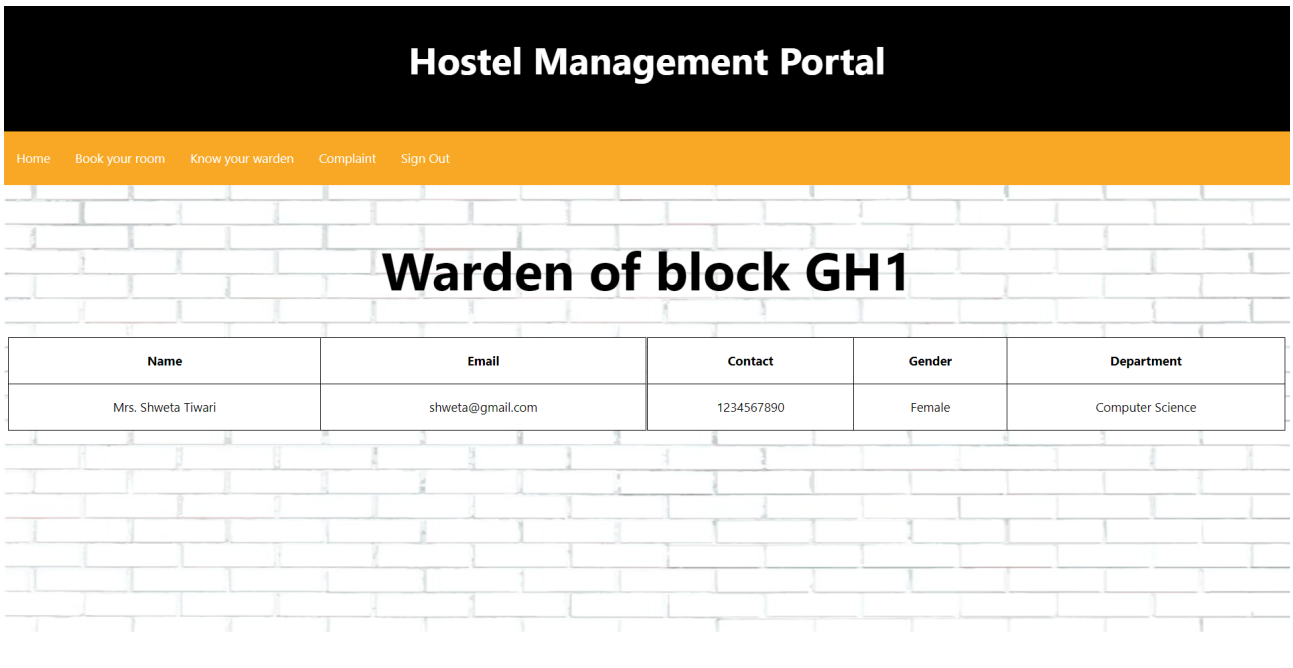



Figure 12: Know your warden Page for the student

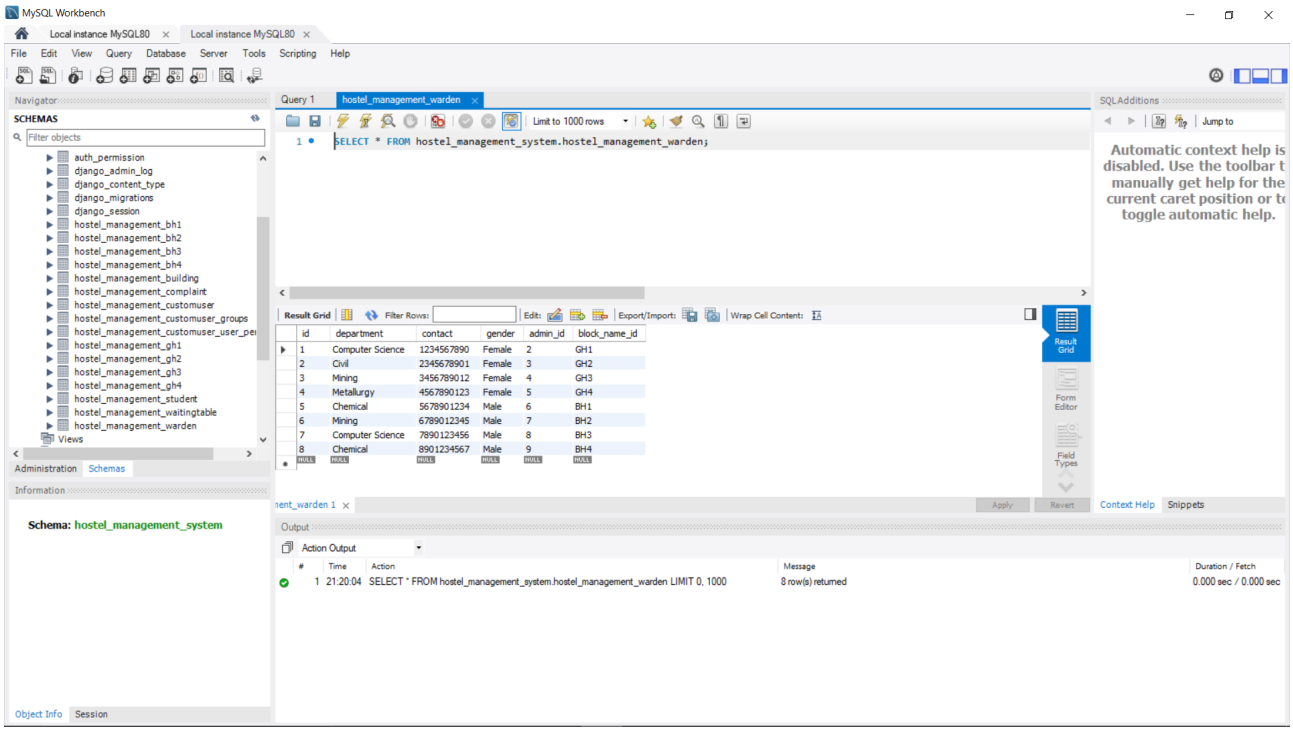



Figure 13: Database scheme of warden

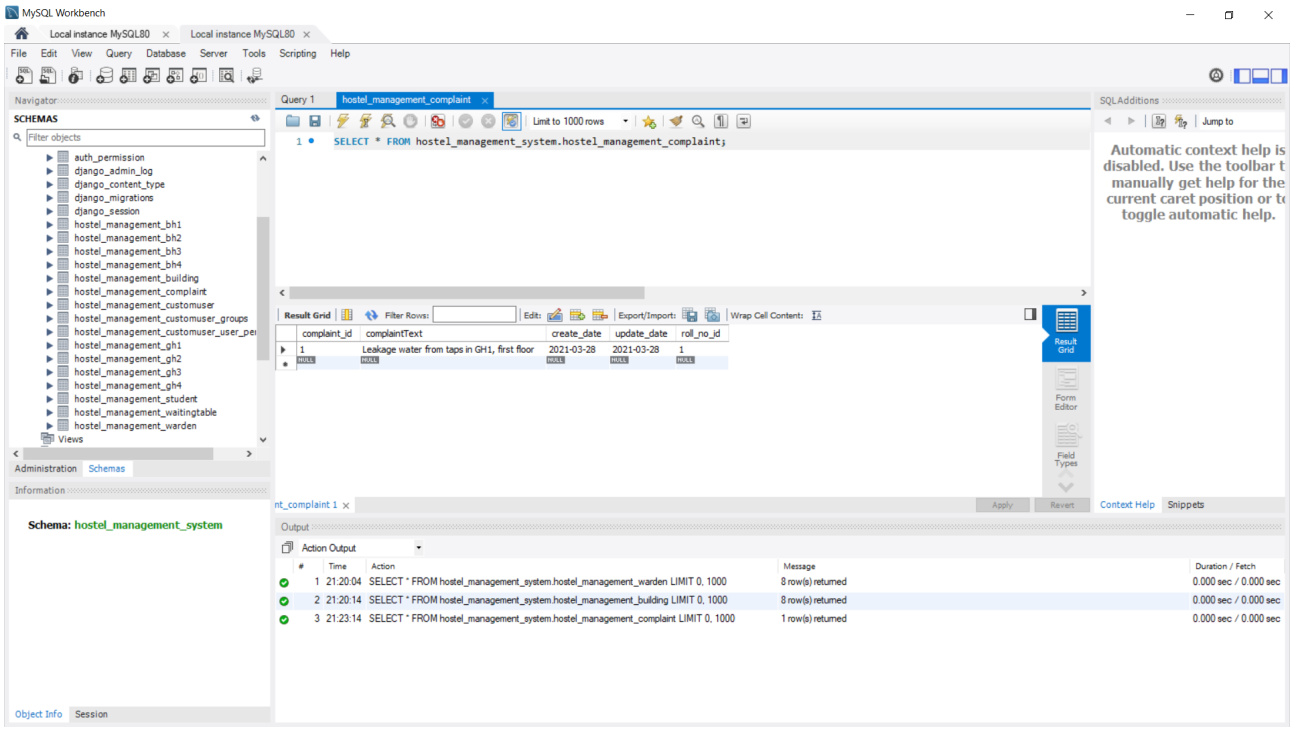



Figure 14: Database scheme of complaint

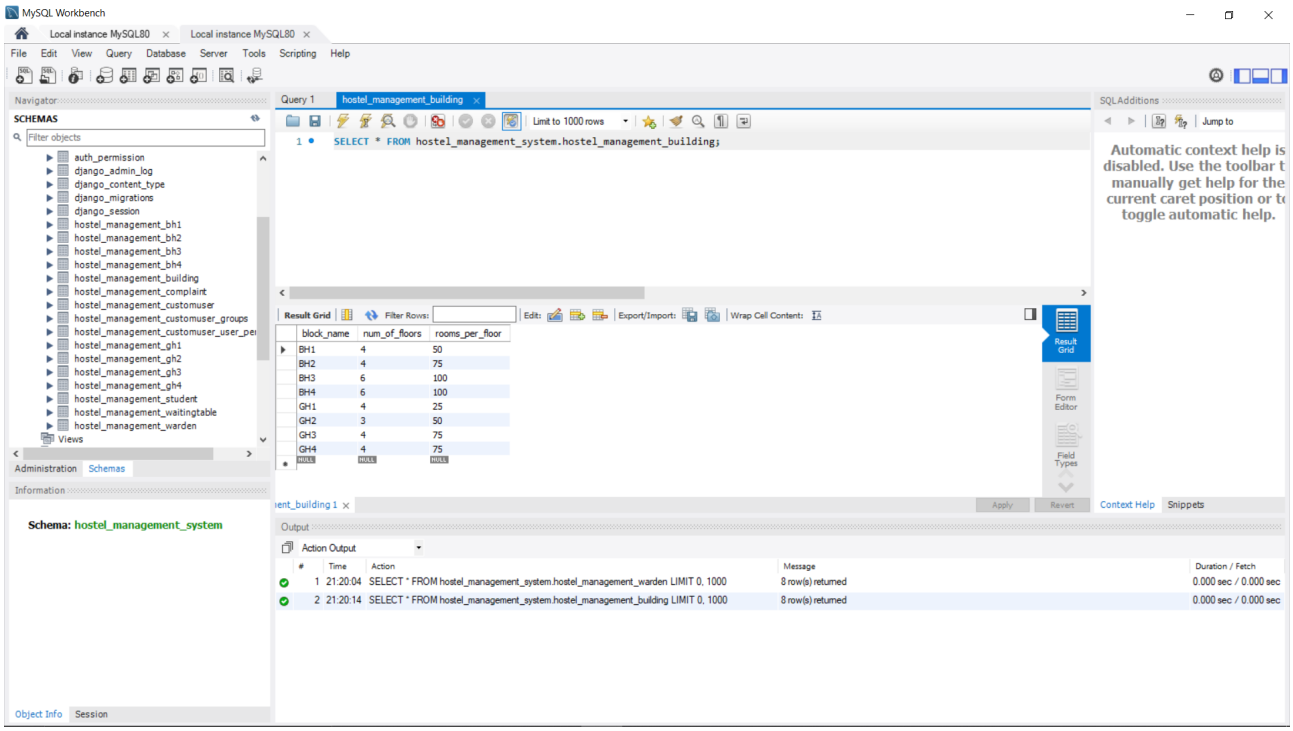



Figure 15: Database scheme of buildings

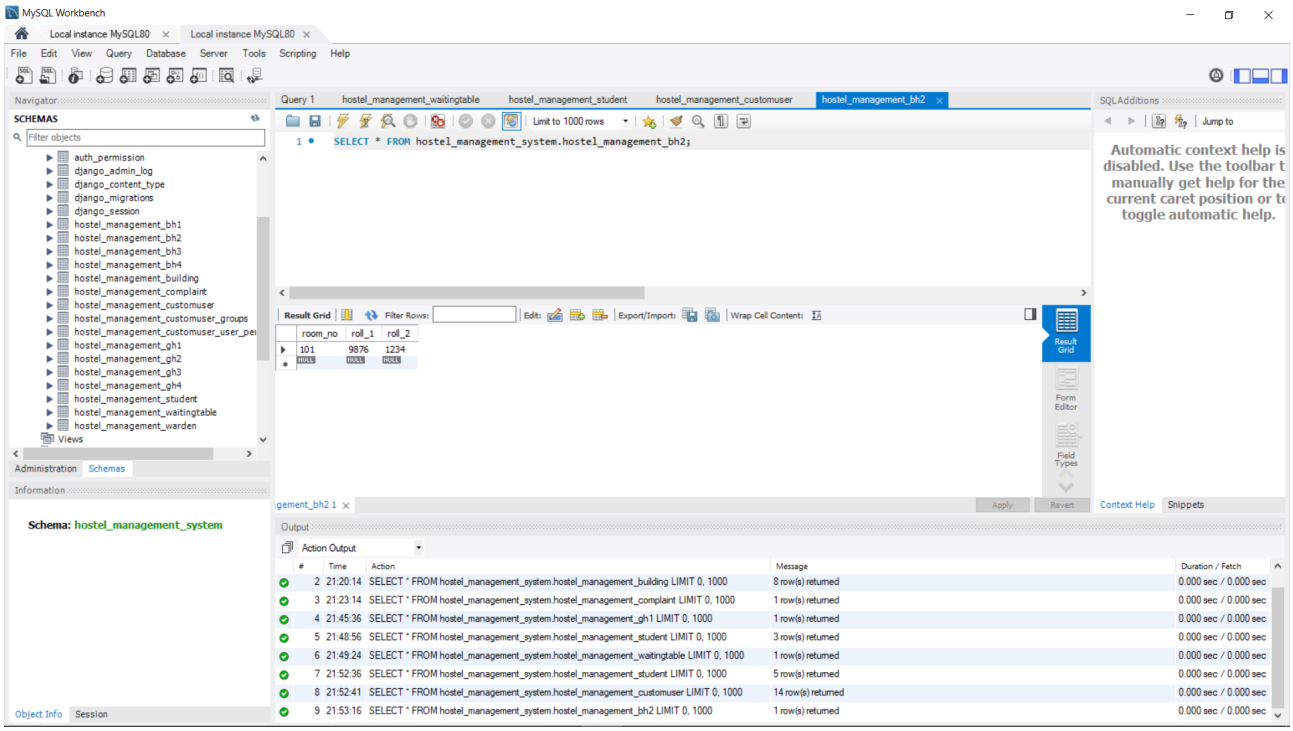



Figure 16: Database scheme of BH1

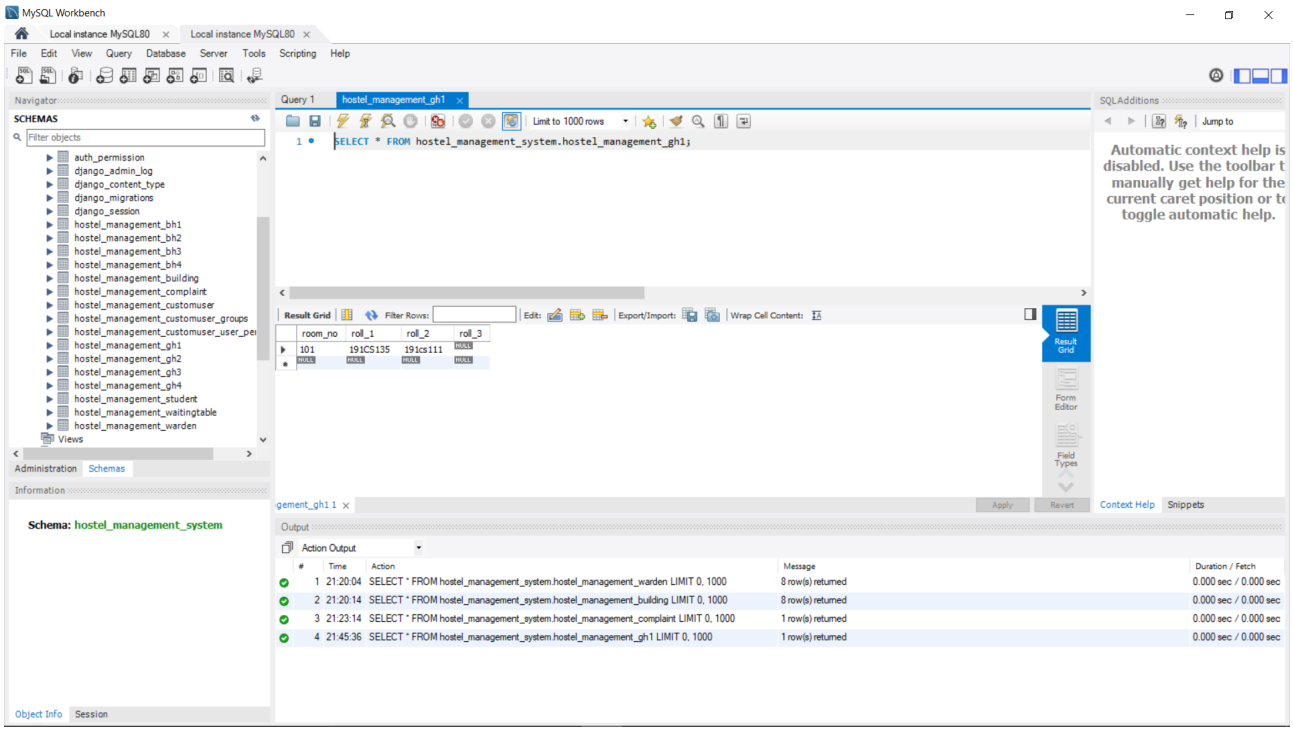



Figure 17: Database scheme of GH1

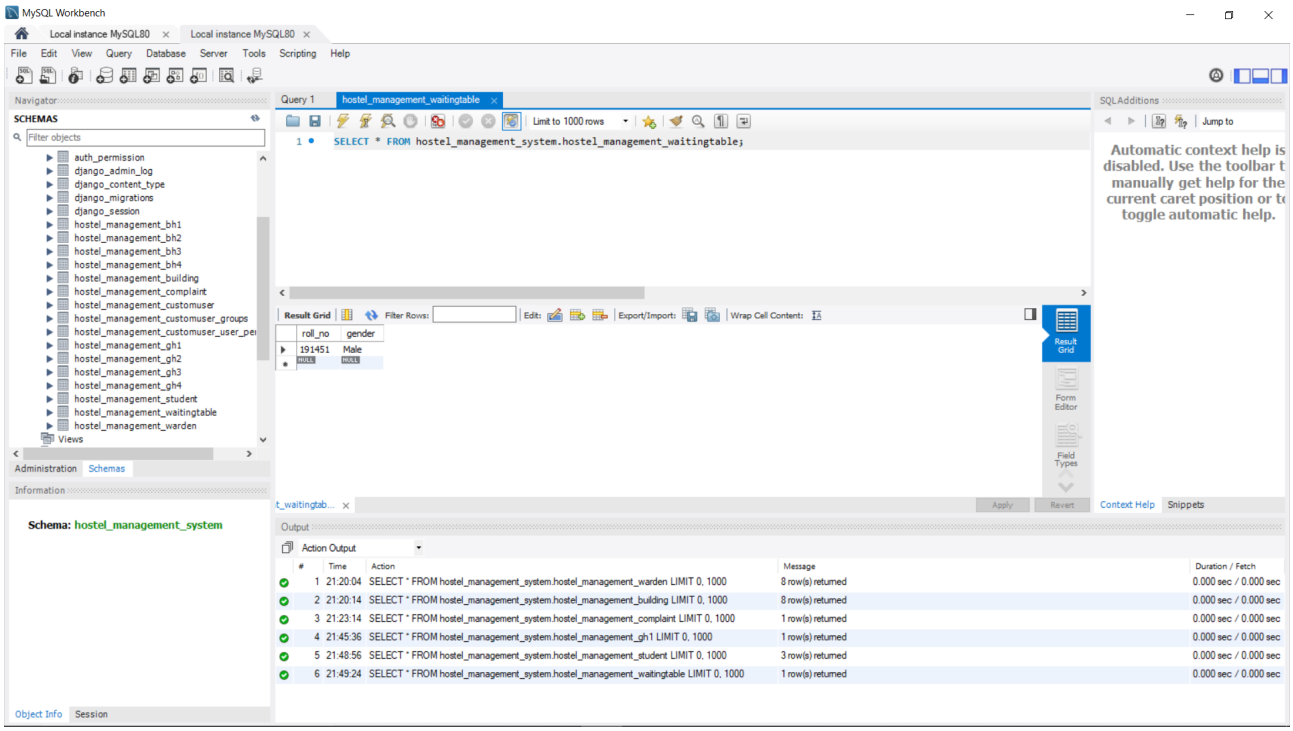



Figure 18: Database scheme of Waiting Table

# 6 References:


1. https://medium.com/nybles/building-a-hostel-managing-system-with-django-d2dc85d9dec2

2. https://medium.com/@omaraamir19966/connect-django-with-mysql-database-f946d0f6f9e3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