Project Proposal

On

Hostel

Management System

Created By:	AF id:	Guided By:
Sneha Yadav	AF04991141	Mr. Anuj Kumar
Rishabh Singh Rawat	AF04991219	
Shivansh Sahu	AF04991796	

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1. Title of the Project

Hostel Management System

2. Introduction

The **Hostel Management System** is designed to digitalize and simplify hostel operations such as student registration, room allocation, fee management, visitor tracking, and complaints handling.
Traditional hostel management systems **rely** heavily on manual registers, which leads to errors, mismanagement, and data loss.

This project provides a **centralized, secure, and automated system** developed using:

- **Java** for backend logic
- **JDBC** for database connectivity
- **MySQL** for database management
- **Maven** for project build and dependency management

It ensures that the hostel administration runs smoothly and saves time for both the wardens and the students.

3. Objective

- To enhance hostel room allocation and student registration processes.
- To simplify fee collection and generate payment receipts.
- To track hostel visitors, complaints, and daily entries.
- To reduce paperwork and improve data accuracy and efficiency.
- To provide a scalable, secure, and user-friendly system.

4. Project Category

Database Management System (DBMS) / Desktop Application

5. Analysis

5.1 Modules and Description

1. Student Management Module

• Add/Edit/Delete student details:

Enables the admin to manage student records.
Keeps the database accurate and updated.

• Store ID proofs, address, academic details:

Saves essential student documents and information.
Ensures quick verification and secure record-keeping.

• Manage hostel admission and exit:

Tracks student entry and exit from the hostel.
Maintains clear admission history.

2. Room Management Module

• Add rooms and set capacity

Allows the admin to create new rooms and define their capacity.
This helps maintain a clear structure of available accommodation.

• Allocate/Deallocate rooms

Enables assigning or removing students from rooms as needed.
Ensures proper distribution of rooms based on availability.

• Track room status: Occupied / Available

Provides real-time status of every room.
Helps in monitoring and managing hostel occupancy efficiently.

3. Hostel Fee Management Module

• Record fee payment
The admin can enter fee details whenever a student pays.
This keeps the hostel's fee records clear and updated.

• Generate digital receipts
After payment, the system can generate a simple digital receipt.
It becomes easier for both admin and students to maintain proof of payment.

• **Maintain due and pending fees**
Any unpaid or remaining fee is tracked automatically.
This ensures nothing is missed and follow-ups can be done on time.

4. Attendance Module

• **Daily student attendance**
The admin can mark the presence of students every day.
It helps in keeping track of who is staying inside the hostel.

• **Track leave requests**
Students can apply for leave, and the admin can approve or reject it.
This makes the leave process organized and clear.

• **Generate attendance reports**
Attendance summaries can be created whenever needed.
These reports help in reviewing student presence patterns.

5. Visitor Management Module

• **Record visitor name, relation, entry/exit time**
The system stores details of every visitor, including their name, relation, and the time they enter or leave the hostel.
This helps maintain proper security and keeps track of who is meeting which student.

• **Generate visitor history reports**
It can generate complete visitor history whenever required.
These reports help the admin review past visits and ensure transparent monitoring.

6. Complaint Management Module

• **Students can register complaints**
Students can easily submit complaints about any issue they face in the hostel.
This ensures their concerns are properly documented.

• **Admin/Warden can respond or update status**
The admin or warden can check these complaints and update their status.
This makes the complaint resolution process simple and clear.

7. Admin/Warden Authentication Module

This can manage students, rooms, fees, and other modules through the system.
This centralizes all hostel operations in one place.

5.2 Database Design (Table Format)

1. Student

Column	Datatype	Key / Constraint
student_id	INT	PK, Auto Increment
name	VARCHAR(100)	Not Null
gender	VARCHAR(10)	Not Null
contact	VARCHAR(20)	Not Null
address	VARCHAR(200)	Not Null
room_id	INT	FK → room(room_id)
admission_date	DATE	Not Null
status	ENUM('ACTIVE','LEFT')	Default: ACTIVE
Hostel_id	INT	PK

2. Room

Column	Datatype	Key / Constraint
room_id	INT	PK
room_no	VARCHAR(10)	Unique
capacity	INT	Not Null
occupied	INT	Not Null

3. Fees

Column	Datatype	Key / Constraint
fee_id	INT	PK
student_id	INT	FK
amount	INT	Not Null
date_paid	DATE	Not Null
receipt_no	VARCHAR(50)	Unique

4. Attendance

Column	Datatype	Key / Constraint
attendance_id	INT	PK
student_id	INT	FK
date	DATE	Not Null
status	ENUM('P','A')	Not Null

5. Visitors

Column	Datatype	Key / Constraint
visitor_id	INT	PK
student_id	INT	FK
visitor_name	VARCHAR(100)	Not Null
relation	VARCHAR(50)	Not Null
entry_time	DATETIME	Not Null
exit_time	DATETIME	Nullable

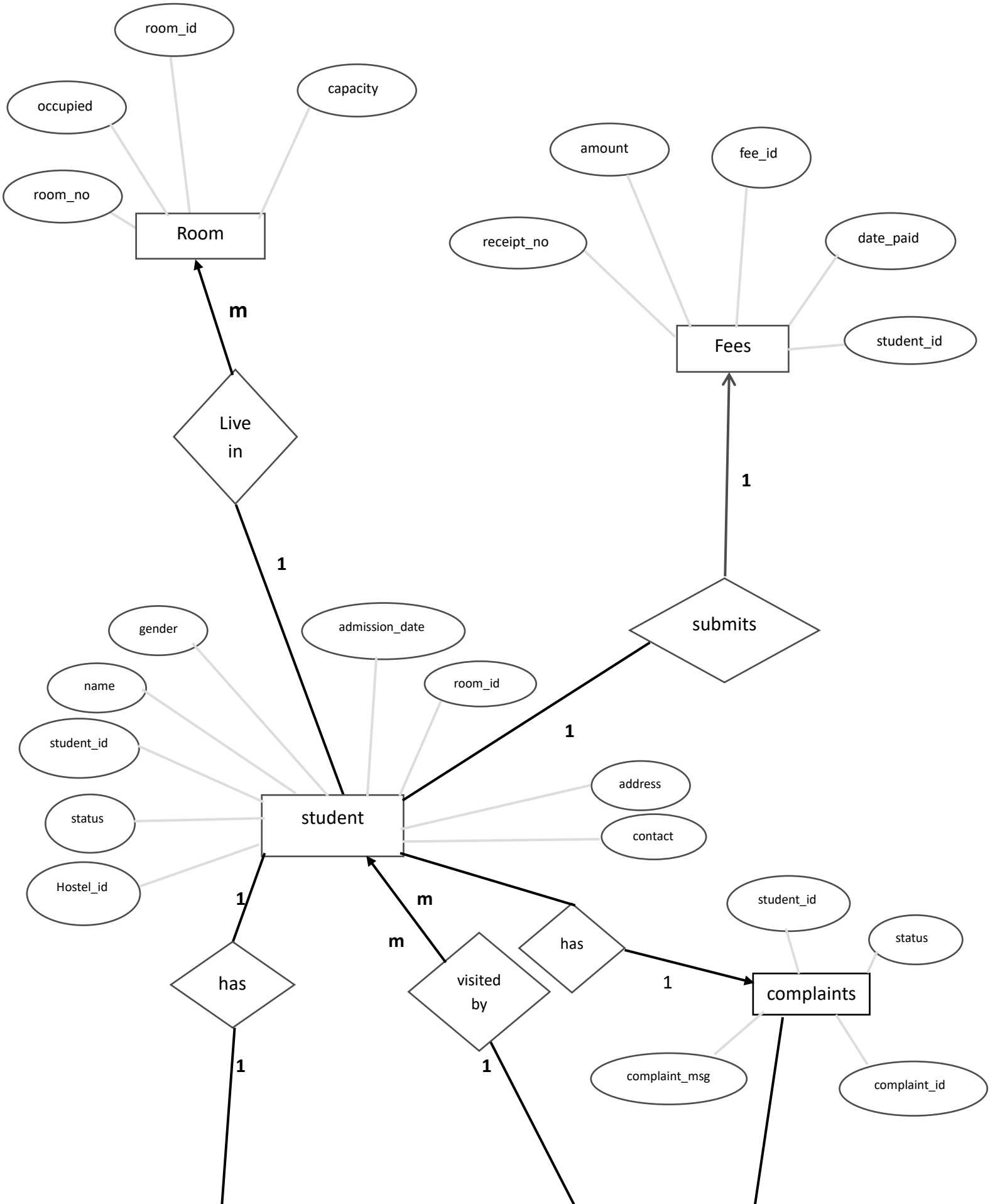
6. Complaints

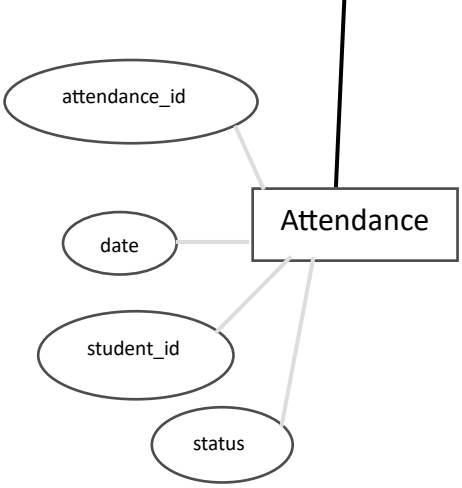
Column	Datatype	Key / Constraint
complaint_id	INT	PK
student_id	INT	FK
complaint_msg	VARCHAR(300)	Not Null
status	ENUM('PENDING','RESOLVED')	Default: PENDING

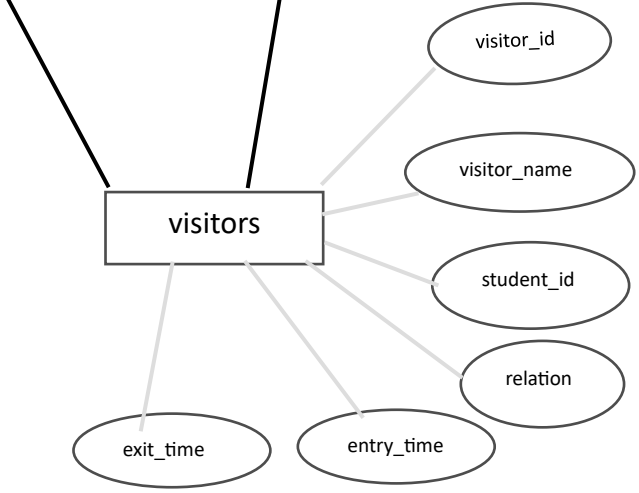
7. Users (Admin/Warden)

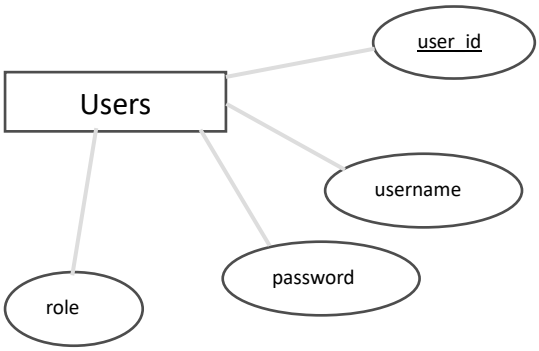
Column	Datatype	Key / Constraint
user_id	INT	PK
username	VARCHAR(50)	Unique
password	VARCHAR(100)	Not Null
role	ENUM('ADMIN','WARDEN')	Not Null

5.3 ER Diagram



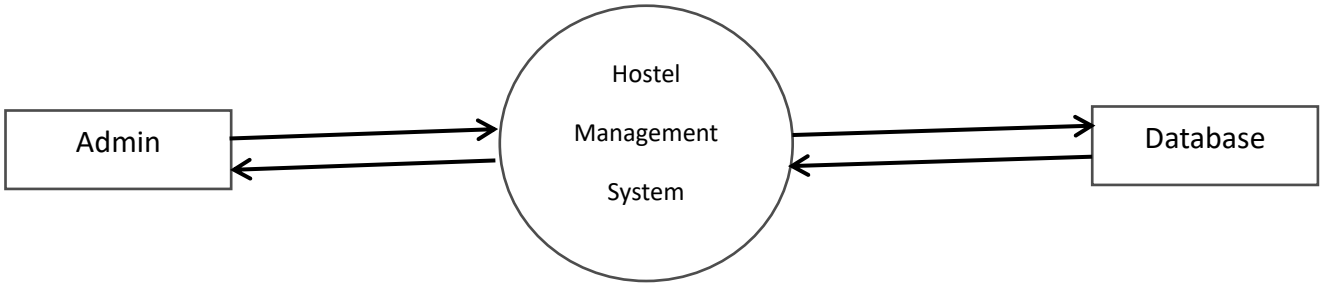

attendance_id
Attendance
date
student_id
status


visitor_id
visitor_name
visitors
student_id
relation
exit_time
entry_time

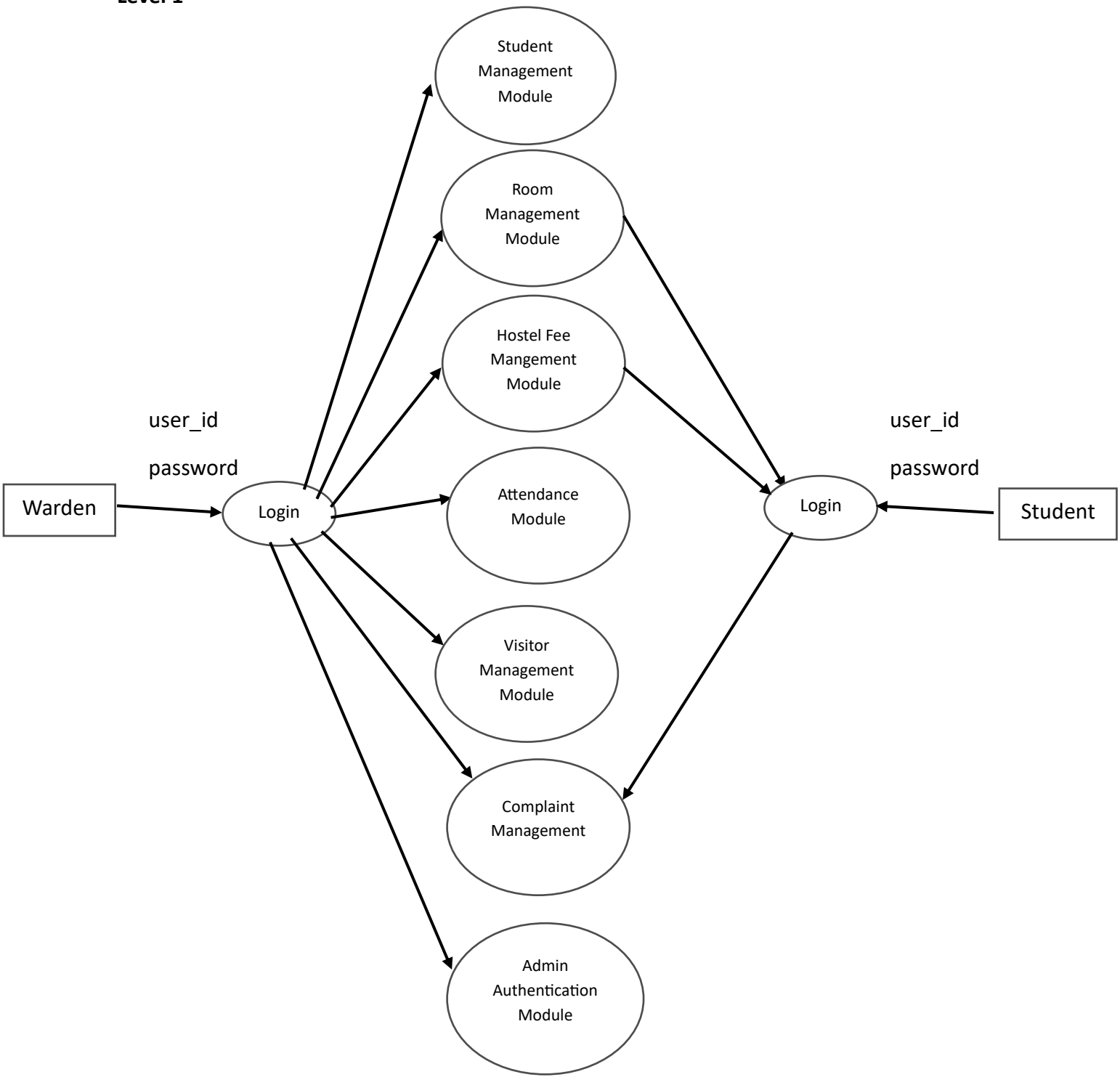

user_id
Users
username
password
role

5.4 Data Flow Diagram (DFD)

Level 0



Level 1



6. Complete Structure

Process Logical Diagram

Login

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Dashboard

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Student Management → Room Allocation → Fee Submission

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Attendance → Visitors → Complaints

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Reports → Logout

7. Platform Used

Hardware Requirements

- Processor: Intel i5
- RAM: 8GB
- Storage: Minimum 4GB RAM available after OS installation.

Software Requirements

- Windows
- JDK 17+
- MySQL Server
- MySQL Workbench
- Maven
- IDE: Eclipse

8. Future Scope

- Online fee payment module
- Mobile app for students
- Biometric attendance system
- Automatic room allocation through AI
- Cloud-based hostel management
- Complaint auto-escalation system

9. Bibliography

- MySQL Documentation
- JDBC API Documentation
- Java Official Documentation
- GeeksforGeeks
- Maven Project Documentation