**P2 Database Design and Initial ERD (Group 17)**

**Hostel Management System**  
Hostel Management System is design so that universities and colleges can easily manage data of students and related things. Different problems can be solved using different designs and multiple scenarios can be created for each problem.

* Multiple students will be staying in hostel. Hostel has many rooms for accommodation and in each room, there can be more than one student
* There are many workers who work in the mess and hostel as well (washing, cleaning etc.)
* Each student must submit fees-in-time so they can get all facilities at hostel.
* For food service, hostel is providing facility of catering in hostel to students.
* There is a possibility that visitors can also come to meet students those living in hostel.
* Based on what students feels about the hostel he could provide feedback to the management.

**Entities**

Following are the entities used in the project, why these entities are chosen and their attributes about how they work, size, primary key, foreign key etc. and how the data will move in the entities.

1. Management
2. Hostel Manager
3. Hostel
4. Student
5. Billing
6. Room
7. Catering
8. Catering Employee
9. Catering Package
10. Visitor
11. Feedback

**Key Database Design Decisions**

**Management**: We are taking this entity named as Management as this entity is responsible for managing the data received from students in the form of feedback and billing, appointing Managers and managing student bills. Attributes taken are Management name, address and contact number.

**Hostel Manager:** We are creating this entity named as Hostel Manager as this entity is responsible for managing the respective hostel. Any improvement provided by the management about the hostel will be directed to Hostel Manager and he would take necessary actions. Attributes used are Manager name, Email, Address, HostelID, contact number.

**Hostel**: We are taking this entity named Hostel because from here the data will go to other entities and we will manage database. This entity will manage data for students. Attributes used are Hostel name, Max occupancy, Current Occupancy, Total rooms, ManagerID and Location. Only Admin can get into the database and check status for students and allocate rooms to each student. Data will move to different entities like branches of tree.

**Student**: We are taking this entity named Student as students is the main entity in the hostel. We will keep the database of students and other related things with students. Attributes used are Student name, college, email, department, date of birth, Hostel no, room no, PackageID, and contact no.

**Room**: Hostels have multiple rooms and students require room to live. Rooms will be allotted to different students and students’ information can be obtained through room in which they live. They can have many attributes, but we have chosen Capacity, StudentID, HostelID.

**Billing**: Students living in the hostel must pay fees for that purpose we have chosen Billing. Attributes for billing are StudentID, Amount, Fee Status and Deadline. The data will go from management to students and then fees. Admin will check the fee status by getting in student entity.

**Feedback**: Students will provide feedback about the hostel they live-in. This feedback will be provided to the management. Attributes used are StudentID and feedback.

**Catering**: Students will get a facility of catering. It can be considered as a marketing strategy so a greater number of students are attracted towards the hostel. The attributes for Catering are EmployeeID, Catering Name, Catering Email, Address and Package list.

**Catering Employee**: We have added an entity with name Catering Employee as there will be multiple employees working in catering. The attributes used are Employee name, Email, Address, Salary and CateringID.

**Catering Package**: We have added an entity named Catering Package. This entity is used so that multiple food package options are made available for students in the hostel. Based on their needs they can select the package.

**Visitor**: This entity is added as an extra entity. Attributes used are Visitor name, student ID and room number. This is an optional entity and data will come from student and admin. Admin can login to see student data in which visitor is attached with key so admin can keep eye on visitor for every student

**ERD:**

Diagram

Description automatically generated