### Final Design Description

### Key Entities:

**Buildings**: Represents all buildings on campus (academic, residential, administrative, etc.).

**Attributes:**

1. building\_id (Primary Key)
2. name
3. type(e.g., academic, residential, administrative)
4. location
5. total\_floors
6. room\_count\_per\_floor

Note: It serves as the central entity to which other entities are linked.

**Floors:** The floors entity stores information about individual floors within the buildings.

Attributes:

1. building\_id (Foreign Key Ref. Building entities)
2. floor\_number (Primary Key)
3. faculty\_name
4. faculty\_number
5. number\_of\_classrooms
6. number\_of\_teachers\_rooms
7. number\_of\_office\_rooms
8. number\_of\_washrooms
9. number\_of\_lab\_rooms
10. total\_rooms

Note: The building\_id establishes a relationship between floors and buildings, indicating that each floor belongs to a specific building.

**Rooms**: Represents individual rooms within a building.

Attributes:

1. room\_number (Primary Key)
2. building\_id (Foreign key ref. Building entities)
3. building\_name( foreign key ref. Building(name))
4. floor\_number (Foreign key ref. Floors entities)
5. room\_type(e.g. lab room, classroom, teachers room, office room , residential, dining, prayer room, washroom)

Note: The building\_id establishes a relationship between rooms and buildings, indicating that each floor belongs to a specific building. Also floor\_number establishes a relationship between floors and rooms.

**Classrooms:** Represent individual classroom within a building.

Attributes:

1. room\_number(Foreign key ref. Rooms entities)
2. building\_id (Foreign key ref. Building entities)
3. floor\_number(Foreign key ref. Floors entities)
4. department\_name
5. department\_number
6. room\_size
7. student\_capacity\_for\_class
8. student\_capacity\_for\_exam

**Teachers:** Represents teachers and their assigned chamber.

Attributes:

1. teacher\_id(Primary key)
2. teacher\_name
3. department\_name
4. department\_number
5. building\_id (Foreign key ref. Building entities)
6. floor\_number (Foreign key ref. Floors entities)
7. room\_number (Foreign key ref. Room entities)
8. phone\_number
9. email\_address

**Office\_Room**: Represent office room for each faculty.

Attributes:

1. staff\_id(Primary key)
2. staff\_name
3. faculty\_name
4. building\_id (Foreign key ref. Building entities)
5. floor\_number (Foreign key ref. Floors entities)
6. room\_number (Foreign key ref. Room entities)
7. phone\_number
8. email\_address

**Lab\_Room:** Represent lab room information.

Attributes:

1. room\_number (Foreign key ref. Room entities)
2. department\_name
3. building\_id (Foreign key ref. Building entities)
4. floor\_number(Foreign key ref. Floors entities)
5. type\_of\_equipment
6. student\_capacity

**Hall\_rooms:** Represent individual rooms within a hall building.

Attributes:

1. room\_number(Foreign key ref. Rooms entities)
2. building\_id (Foreign key ref. Building entities)
3. floor\_number
4. room\_type
5. number\_of\_seats

**Auditorium: Represent auditorium information.**

**Attributes:**

* **room\_number** (Primary Key)
* **building\_id** (Foreign Key referencing the Building entity)
* **building\_name** (Foreign Key referencing Building name)
* **floor\_number**
* **room\_type (e.g., Green Room,Electricity Room,Store Room,Electricity Room)**
* **audience\_capacity**: Number of people the auditorium can seat
* **audio\_equipment\_available**: Boolean or list of available audio equipment
* **projector\_available**: Boolean, indicating if a projector is available
* **stage\_size**: Dimensions of the stage (if applicable)