

HOSTEL MANAGEMENT SYSTEM

PROJECT REPORT DBMS





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CHAPTER #1: INTRODUCTION

1.1 INTRODUCTION :

In our current era of automated systems with it being either software or hardware, it's not advisable to be using manual system. Hostels without a management system are usually done manually. Registration forms verification to other data saving processes are done manually and most at times, they are written on paper. Thus a lot of repetitions can be avoided with an automated system.

The drawbacks of existing systems lead to the design of a computerised system that will help reduce a lot of manual inputs. With this system in place, we can improve the efficiency of the system, thus overcome the drawbacks of the existing manual system.

This system is designed in favour of the hostel management which helps them to save the records of the students about their rooms and other things.

It helps them from the manual work from which it is very difficult to find the record of the students and the mess bills of the students, and the information of about the those ones who had left the hostel years before. This system gives an idea about how a student and fee details, room allocation, mess expenditure are maintained in a better way.

The hostel management system will also contain special features like how many students are in a room, student's id and free rooms or space available. The administration has a unique identity for each member as well as students details.

1.2 EXISTING SYSTEM:

There are a lot of drawbacks in keeping and maintaining a hostel. Especially with a manual system. Since most hostels are being run by only one hostel manager, the number of students in a room are sometimes not known by the officer. He has to go room by room to ensure that a room is occupied or not. Sometimes people may be owing in the hostel and they are saved on papers or huge notebooks, and sometimes receipts. If the books should go missing or stolen, one would never be able to know if a student is owing or not. Room allocation also becomes a problem as the officer might not know which rooms are available or not. And some hostels have a lot of rooms or have mare storeys and it would be very tedious to go through all storeys in search of a free room for an applicant. Also the officer might not know the number of students in a room or know if a room is full or not.

DISADVANTAGES:

- More human power
- More strength and strain of manual labour needed
- Repetition of same procedure.
- Low security.
- Data redundancy.
- Difficulty to handle.
- Difficulty to update data.
- Record keeping is difficult.
- Backup data can be easily generated.

1.3 PROCESSED SYSTEM:

This project is aimed at developing a system for keeping records and showing information about or in a hostel. This system will help the hostel officer to be able to manage the affairs of the hostel. This system will provide full information about a student in the hostel. It will show rooms available or not and number of people in a particular room. This will also provide information on students who have paid in full or are still owing. This system will also provide a report on the summary detail regarding fees and bills students are owing. Also included is a user module for employees or the hostel officer.

ADVANTAGES

- Less human error
- Strength and strain of manual labour can be reduced
- High security
- Data redundancy can be avoided to some extent
- Data consistency
- Easy to handle
- Easy data updating
- Easy record keeping
- Backup data can be easily generated

CHAPTER #2: DATA REQUIRMENT

This document is explaining about the entities we are using in the project, reason for choosing the entities their attributes how they will work ,data_type, size, primary key, foreign key , constraints (if exists) and flow of data that how the data will move between the entities.

Basically this is designed to make it more easy and understandable for everyone.

2.1 ENTITY CLASSES:

- 1. Hostel.
- 2. Students.
- 3. Employs.
- 4. Complaints.
- 5. Blocks.
- 6. Rooms.
- 7. Mess details.
- 8. Bill Reports.

2.2 DISCRIBE ENTITIES AND THEIR ATTRIBUTES:



Many institutes provide the facility of hostel for boys and girls.

REASON:

We are taking the entity named as hostel because from here data will move to other entities and we will manage the database.

This entity will manage the data of students in hostel.

ATTRIBUTES:

If we talk about the attributes, there can be many but we have mention only few those will be more help full to make the project workable and simple as Following bellow.

- 1. <u>H_ID</u>
- 2. H_Name
- 3. Adress
- 4. H_Type

DATATYPE AND SIZE:

Each attribute have the suitable data-type and size according to the requirement.

PRIMARY KEY





Students will be in hostel or hostel has students.

REASON:

The reason for choosing this entity is that ,student is the main entity in the hostel and we will keep the database of students and logically related things with the students.

ATTRIBUTES:

These are selected so that hostel administration can easily manage the whole information about student and through different perspectives students can be accessed by hostel management.

- 1. Reg No
- 2. S Name
- 3. Contact No
- 4. Address
- 5. S DOB
- 6. Religion

DATATYPE AND SIZE:

Each attribute have the suitable data-type and size according to the requirement.

PRIMARY KEY:

❖ Reg No



REASON:

There will be staff in mess and hostel as well.

Some will work in mess and others like sweepers in hostel and many more.

- 1. <u>E_id.</u>
- 2. E_name.
- 3. E_phn nO.
- 4. E mail.
- 5. E_role.

Each attribute have the suitable datatype and size according to the requirement.

PRIMARY KEY:

1. **E_id** is used as a primary key.

CONSTRAINTS:

Primary key should be unique and cannot be null.

<u>H ID</u> will be foreign key in this table.



Hostel haves 1 or more Blocks

REASON:

To adjust more student no. of rooms are increased by building blocks.

ATTRIBUTES:

There can be many attribute in this entity as below.

- 1. B_id
- 2. B_name
- 3. no_of_floors
- 4. no_of_rooms

.

Each attribute have the suitable data-type and size according to the requirement.

PRIMARY KEY:

<u>B</u> id is the primary key and it can't be null.

CONSTRAINTS:

Primary key should be unique and cannot be null.

<u>H</u> ID will be foreign key in this table.



Students come in the hostel to get the room.

REASON:

Room will be allotted to different students, so the students can be accessed by the attributes of room as well.

ATTRIBUTES:

There can be many attribute in this entity

- 1. <u>R_No</u>
- 2. R_type
- 3. R_booking Status
- 4. R_capacity
- 5. R_condion

Each attribute have the suitable data-type and size according to the requirement.

PRIMARY KEY:

<u>R</u> No is the primary key and it can't be null.

CONSTRAINTS:

Primary key should be unique and cannot be null.



Students will get the facility of mess

REASON:

Students will get the facility of mess. It can be considered as marketing strategy so more students will come in this hostel because every hostel do not give this facility.

- 1. <u>M_No</u>
- 2. M_Name
- 3. M_Type
- 4. PerDayCost

Each attribute have the suitable data-type and size according to the requirement.

PRIMARY KEY:

M No will be the primary key

CONSTRAINTS:

Primary key should be unique and cannot be null.

> BILL REPORT

Obviously when students will live in the hostel they will submit hostel fee.

REASON:

When students will live in hostel there will be fees charges on the monthly basis. So he must pay bill

- 1. Bill_No
- 2. Room_cost
- 3. Mess_cost
- 4. Electric bill
- 5. Caution_money

Each attribute have the suitable data-type and size according to the requirement.

PRIMARY KEY:

Bill No is the primary key and it can't be null.

CONSTRAINTS:

In which three foreign keys R_No, M_No, Reg No



Student will have issues while living in hostel.

REASON:

This is weak entity here because if the student will exist then complaints will be submitted other-wise not.

When students will live in hostel they will have issues and complaints.

- 1. *Reg No*
- 2. *E_id*.
- 3. complaint
- 4. cdate

Each attribute have the suitable data-type and size according to the requirement.

PRIMARY KEY:

<u>E id and Reg No</u> is the primary key and it can't be null. Their both keys work as a composite key

CONSTRAINTS:

2.3 BUSSINESS RULES

For the best understanding first we have to define the project scope or the scenario because different problem can be solve different design and more than one scenarios can be created for each problem. People design them according to their thinking.

We are also creating some type scenario so that our design can be bit specific for some kind of situation.

Our project is defined as;

As we can see that our university has the facility of hostel for boys and girls. We will focus on the boy's hostel only as almost all the things will be same in both hostel we will manage only boys so that it will be simple and easy to understand for everyone. Obviously many students will be living in the boy's hostel.

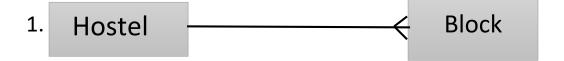
Boy's hostel has many rooms for the accommodation of the students in which more than one student accommodate their self.

Each room has assigned different types of furniture for the students so they can easily spend the time in room.

There are many workers in the boy's hostel who work in the mess and hostel as well (cleaning, washing etc.);

Every student must submit his fees in-time so they can get the every facility in hostel. For the food service the hostel management is providing the facility of mess for students so students and easily get the meal in hostel. It is also possible that visitors can come to meet students those are living in hostel.

2.4 TYPE OF RELATIONSHIP



This relation is in **One_to_Many** Because One hostel have Many **BLOCKS** but one block created in One hostel.



This relation is in **One_to_Many** Because One hostel have Many **SUDENT** but one student lived in One hostel.



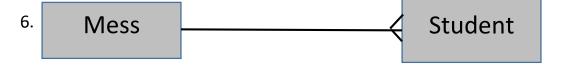
This relation is in **One_to_Many** Because One hostel have Many **EMPLOYS** but one EMPLOY work in One hostel.



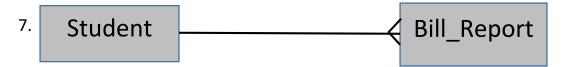
This relation is in **One_to_Many** Because One **ROOM** have Many **STUDENT** but one Student lived in One Room.



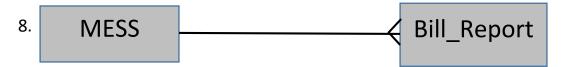
This relation is in **One_to_Many** Because One **BLOCK** have Many **ROOMS** but one Room made in One Block.



This relation is in **One_to_Many** Because One **MESS** Serve Food of many **STUDENT** but one Student can eat in One Mess.



This relation is in **One_to_Many** Because One **STUDENT** can have many **BILL RECODS** but Bill_report is can only be of one student.



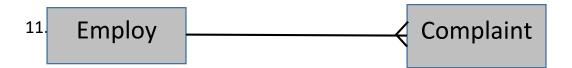
This relation is in **One_to_Many** Because One **MESS** can genrate many **BILL RECODS** but one Bill_report is can only be of one Mess



This relation is in **One_to_Many** Because One **ROOM** can genrate many **BILL** but one Bill_report is can only be of one room.



This relation is in **One_to_Many** Because One **STUDENT** can have many **COMPLAINS** but One complian is only of one student at one time.



This relation is in **One_to_Many** Because One **EMPLOY** can collect many complains but One complian can be collected by employ at one time.

2.5 DEGREE OF RELATIONSHIPS:



This relationship is in **Binary** and the degree of this relationship is **2.**



This relationship is in **Binary** and the degree of this relationship is 2



This relationship is in **Binary** and the degree of this relationship is **2**



This relationship is in **Binary** and the degree of this relationship is **2**



This relationship is in **Binary** and the degree of this relationship is **2**



This relationship is in **Binary** and the degree of this relationship is **2**.



This relationship is in **Binary** and the degree of this relationship is 2



This relationship is in **Binary** and the degree of this relationship is 2



This relationship is in **Binary** and the degree of this relationship is 2



This relationship is in **Binary** and the degree of this relationship is 2

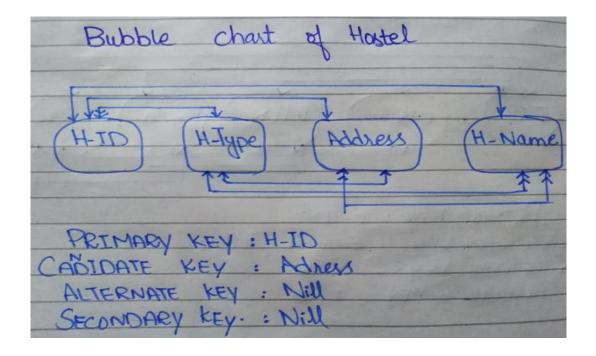


This relationship is in ${\bf Binary}$ and the degree of this relationship is ${\bf 2}$

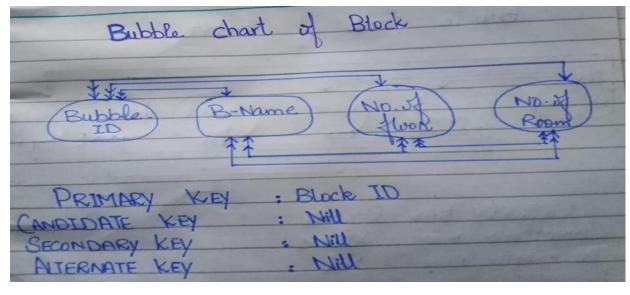
CHAPTER 3: DATA MODELING:

BUBBLE CHARTS:

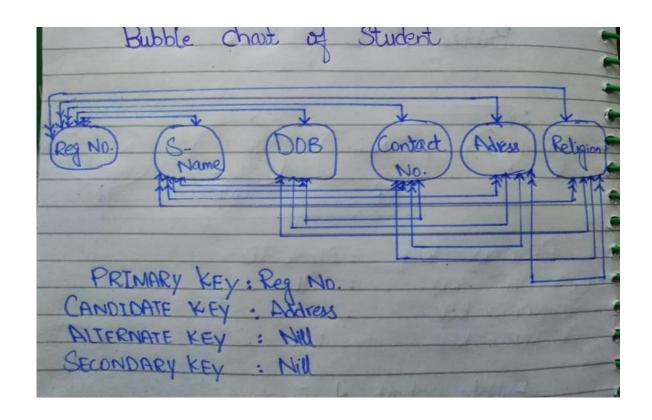
> HOSTEL



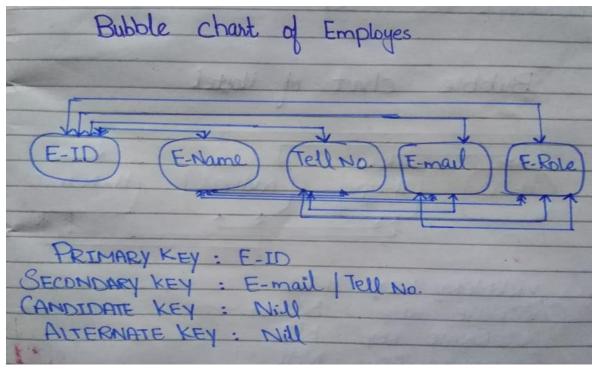
> BLOCK:



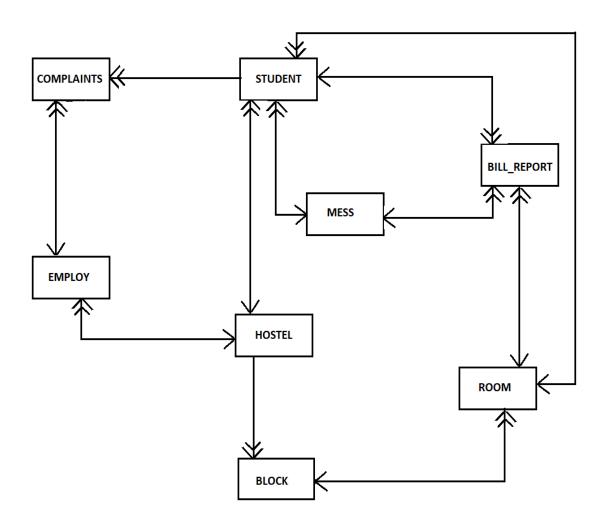
> STUDENT:



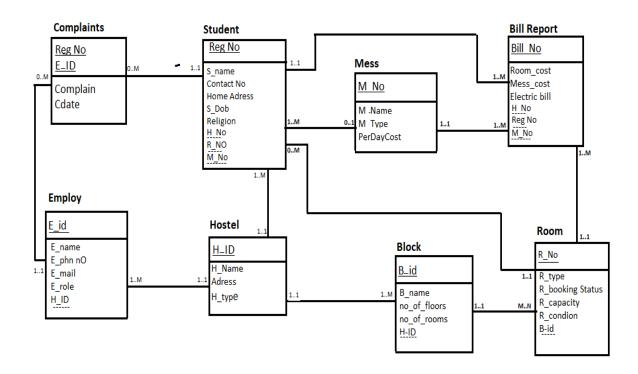
➤ EMPLOY:



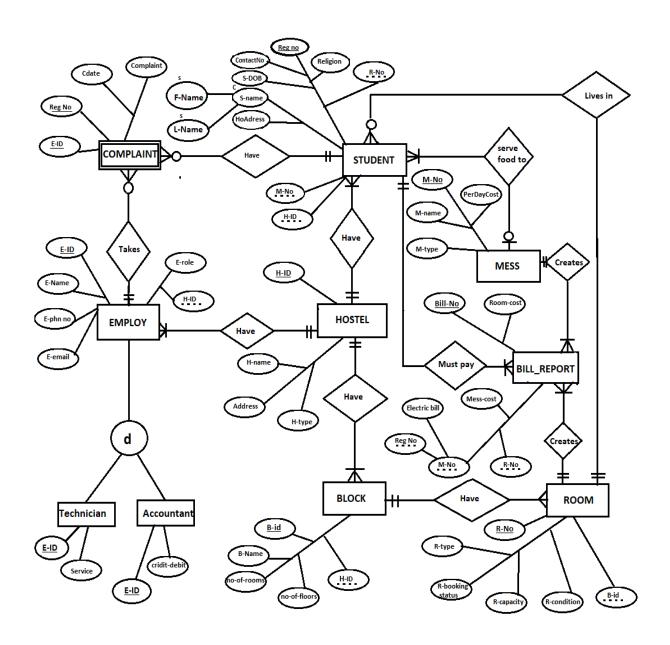
3.2 DATA STRUCTURE DIAGRAM



3.3 ENTITY RELATIONSHIP DIAGRAM(ERD):



3.4 ENHANCHED ENTITY RELATIONSHIP DIAGRAM(EERD):



CHAPTER: 4 LOGICAL DATA MODEL

In Chapter 4, we are going to discuss about Entity Classes, their Relationship and their Normal forms after removing all their anomalies.

4.1 REPRESENT ENTITY CLASS:

Firstly, we will represent all the entity classes of my project. Those Tables are as below;

HOSTEL

H-ID	H_Name	Adress	H_type
1111	lbn_E_Hasham	F9ISD	BOYS
2222	Fatima	F8ISD	GIRLS
5555	Hamdani	I8ISD	BOYS
6666	Bilal	F5ISD	BOYS
7777	Umer	E7ISD	GIRLS

STUDENT

Reg No	S_Name	Contact No	Home Adress	S_Dob	Religion
3990	Jawad	0466464	ISB	03 JAN	Muslim
3991	Hamza	4444556	LHR	01 JAN	Muslim
3992	Awais	9495995	RWP	04 JAN	Muslim
3993	Bilal	0585676	GOJ	02 Feb	Muslim
4003	Zawar	0586776	FSD	01 Dec	Muslim

EMPLOY

<u>E-id</u>	E_name	E_phn nO	E_mail	E_role
5656	Imram Saeed	538856	imran.com	manager
6888	Ali	5767666	ali.com	other works
7676	Hamza	999999	hamza.com	assistant manager
8989	Awais	69878	awais.com	guard
9999	Ahmad	686687	ahmad.com	washer

BLOCK

<u>B-id</u>	B_name	no_of_floors	no_of_rooms
QR111	QAID-E-AZAM	2	120
QR222	ALLAMA IQBAL	3	122
QR333	FATIMA	4	238
QR444	BSCS	5	344
QR555	SHAHSA	3	200

ROOM

R-No	R_type	R_booking Status	R_capacity	R_condition
1	simple	Yes	4	Normal
2	luxury	No	3	Good
3	simple	No	5	extra ordinary
4	simple	yes	2	Normal
5	luxury	yes	4	Good

Complaint

Reg No	<u>E-ID</u>	Complain	Cdate
3990	5656	ABC	01 FEB
3991	6888	DDD	02 FEB
3992	7676	RRR	03 FEB
3993	8989	GGG	04 FEB
4003	9999	YYY	05 FEB

MESS

M_No	M_Name	M_Type	PerDayCost
01	MR1	Simple	1.41
02	MR2	Good	1.42
03	MR3	Simple	1.43
04	MR4	Good	1.44
05	MR5	Simple	1.45

Bill_report

Bill_No	Room_cost	Mess_cost	Electric bill
120	2300	2000	1250
122	2020	4000	1200
126	2490	1500	1400
133	2000	3000	1000
144	2200	5000	1300

4.2 REPRESENT RELATINSHIPS:

In which we represent the relationship between entity classes as below.

	Hostel					
<u>H-ID</u>	H_Name	Adress	H_type			
1111	Ibn_E_Hasham	F9ISD	BOYS			
2222	Fatima	F8ISD	GIRLS			
5555	Hamdani	I8ISD	BOYS			
6666	Bilal	F5ISD	BOYS			
7777	Umer	E7ISD	GIRLS			

	Student							
Reg No	S_name	Contact No	Home Adress	S_Dob	Religion	H-ID	R-No	M-No
3990	Jawad	0466464	ISB	03 JAN	Muslim	1111	1	01
3991	Hamza	4444556	LHR	01 JAN	Muslim	2222	2	02
3992	Awais	9495995	RWP	04 JAN	Muslim	5555	3	03
3993	Bilal	0585676	GOJ	02 FEB	Muslim	6666	4	04
4003	Zawar	0586776	FSD	01 DEC	Muslim	7777	5	05

	Employ					
<u>E-id</u>	E_name	E_phn nO	E_mail	E_role	H-ID	
5656	Imram Saeed	538856	imran.com	Manager	1111	
6888	Ali	5767666	ali.com	Other Works	6666	
7676	Hamza	999999	hamza.com	Assistant Manager	2222	
8989	Awais	69878	awais.com	Guard	5555	
9999	Ahmad	686687	ahmad.com	Washer	7777	

	Block					
<u>B-id</u>	B_name	no_of_floors	no_of_rooms	H-ID		
QR111	QAID E AZAM	2	120	1111		
QR222	ALLAMA IQBAL	3	122	2222		
QR333	FATIMA	4	238	5555		
QR444	BS	5	344	6666		
QR555	SHAHSA	3	200	7777		

Room							
R-No	R_type	R_booking Status	R_capacity	R_condion	B-id		
1	Simple	Yes	4	Normal	QR111		
2	Luxury	No	3	Good	QR222		
3	Simple	No	5	Extra Ordinary	QR333		
4	Simple	yes	2	Normal	QR444		
5	Luxury	yes	4	Good	QR555		

Complaints						
Reg No	<u>E-ID</u>	Complain	Cdate			
3990	5656	ABC	01 FEB			
3991	6888	DDD	02 FEB			
3992	7676	RRR	03 FEB			
3993	8989	GGG	04 FEB			
4003	9999	YYY	05 FEB			

Mess					
M-No	M_Name	M_Type	PerDayCost		
01	MR1	Simple	1.41		
02	MR2	Good	1.42		
03	MR3	Simple	1.43		
04	MR4	Good	1.44		
05	MR5	Simple	1.45		

	Bill report							
<u>Bill-No</u>	Room_cost	Mess_cost	Electric bill	Reg No	R-NO	M-No		
120	2300	2000	1250	3990	1	01		
122	2020	4000	1200	3991	2	02		
126	2490	1500	1400	3992	3	03		
133	2000	3000	1000	3993	4	04		
144	2200	5000	1300	4003	5	05		

4.3 NORMALIZATION:

IN which we discuss about These ENTITIES Have Anomalies or Not:

HOSTEL					
H-ID	H_Name	Adress	H_type		

In Hostel table no anomalies are Present . We can update , delete and insert data . There is no repeating Group ,no partial dependency , no transitive dependency so its is already in 1NF,2NF,3NF.

	Student								
Reg No	Reg No S_name Contact No Home Adress S_Dob Religion H-ID R-No M-No								

In student table no anomalies are Present .We can update , delete and insert data . There is no repeating Group ,no partial dependency , no transitive dependency so its is already in 1NF,2NF,3NF.

EMPLOY							
<u>E-id</u>	E_name	E_phn nO	E_mail	E_role	H-ID		

In employ table no anomalies are Present .We can update , delete and insert data . There is no repeating Group ,no partial dependency , no transitive dependency so its is already in 1NF,2NF,3NF.

BLOCK						
<u>B-id</u>	B_name	no_of_floors	no_of_rooms	H-ID		

In block table no anomalies are Present .We can update , delete and insert data . There is no repeating Group ,no partial dependency , no transitive dependency so its is already in 1NF,2NF,3NF.

ROOM							
R-No	R_type	R_booking Status	R_capacity	R_condion	B-id		

In Room table no anomalies are Present .We can update , delete and insert data . There is no repeating Group ,no partial dependency , no transitive dependency so its is already in 1NF,2NF,3NF.

COMPLAINTS						
Reg No	<u>E-ID</u>	Complain	Cdate			

In complaintl table no anomalies are Present . We can update , delete and insert data . There is no repeating Group , no partial dependency , no transitive dependency so its is already in 1NF,2NF,3NF.

MESS					
M-No	M_Name	M_Type	PerDayCost		

In mess table no anomalies are Present .We can update , delete and insert data . There is no repeating Group ,no partial dependency , no transitive dependency so its is already in 1NF,2NF,3NF.

BILL REPORT						
<u>Bill-No</u>	Room_cost	Mess_cost	Electric bill	Reg No	R-NO	M-No

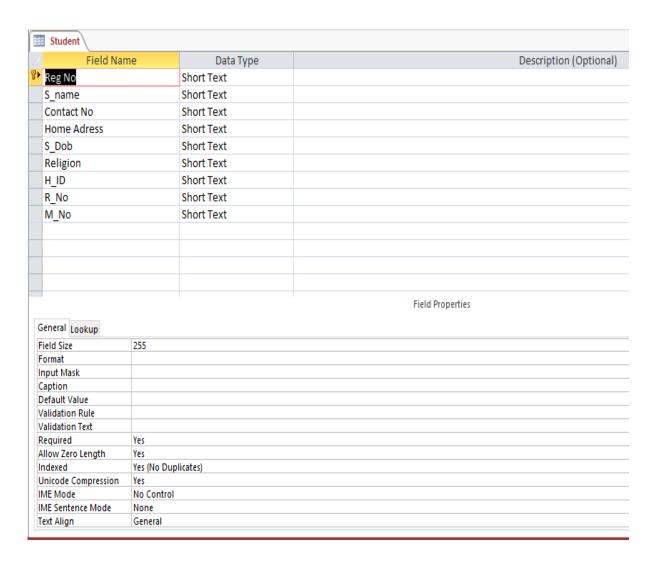
In bill report table no anomalies are Present .We can update , delete and insert data . There is no repeating Group ,no partial dependency , no transitive dependency so its is already in 1NF,2NF,3NF.

CHAPTER 5:IMPLEMENTATION

In this chapter I wil Attach some screen shorts of My MS Access.

5.1 CREATION OF TABLES:

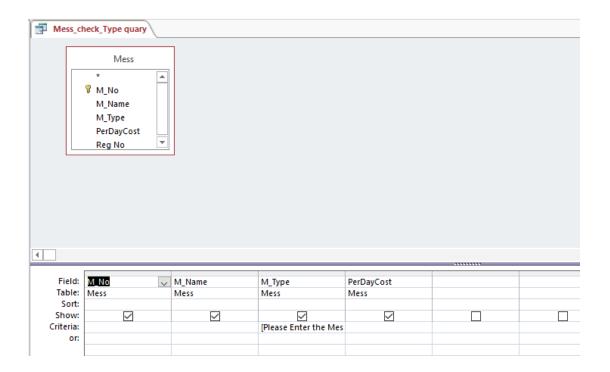
I Create 8 tables of each entity class . Because of requirement I Attach 1 screen shot of design view out of 8 tables.



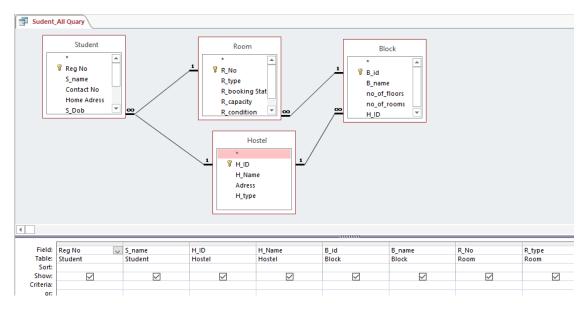
5.2 CREATION OF QUERY:

I Create 20 query of each entity class . Because of requirement I Attach 2 screen shot of design view out of 20 queries.

1. SIMPLE QUERY:



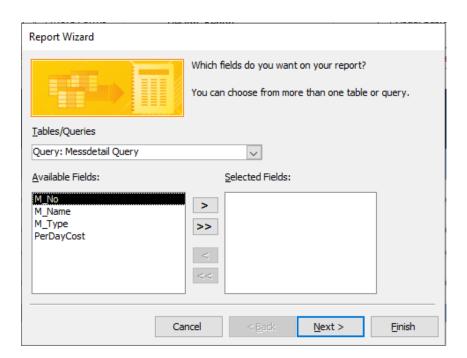
2. MULTIPLE TABLE QUERY:



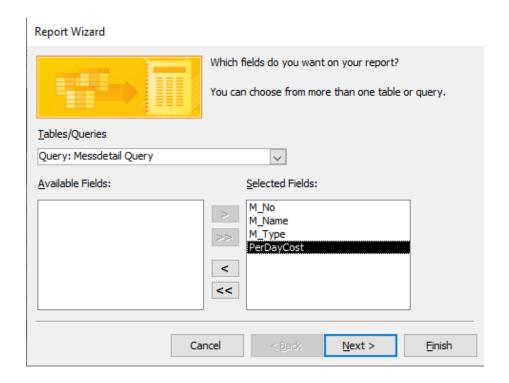
5.3 CREATION OF REPORT:

I Create 20 Reports. Because of requirement I Attach screen shots of report wizard out of 20 Reports.

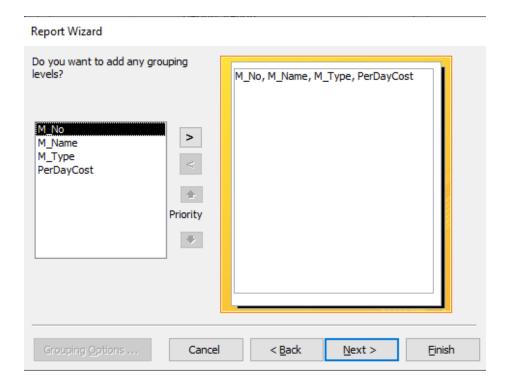
I.



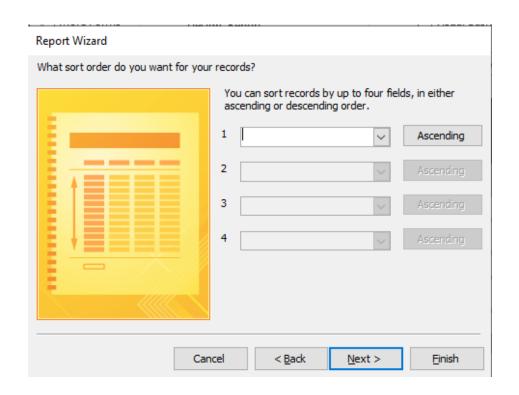
II.

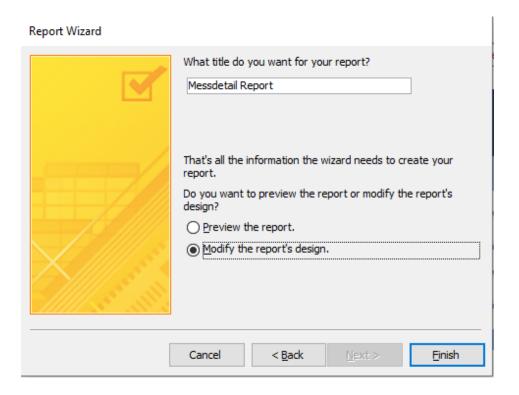


III.

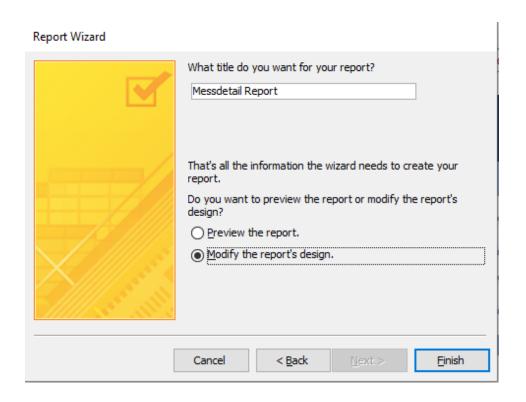


IV.

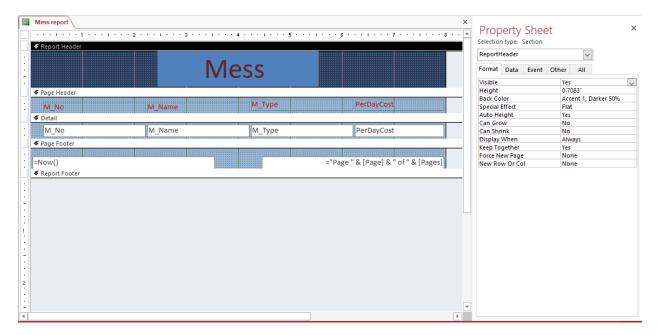




VI.



VII.

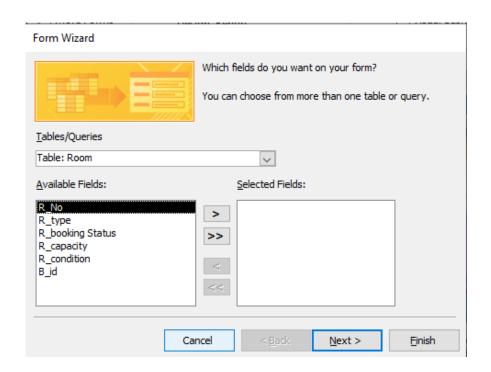


VIII.

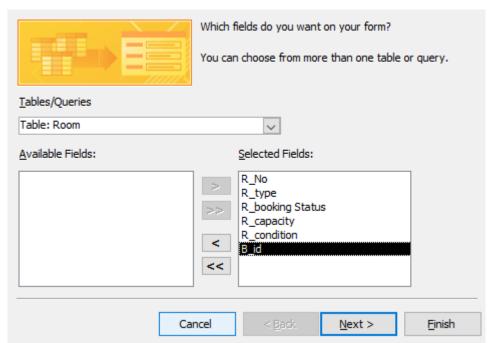


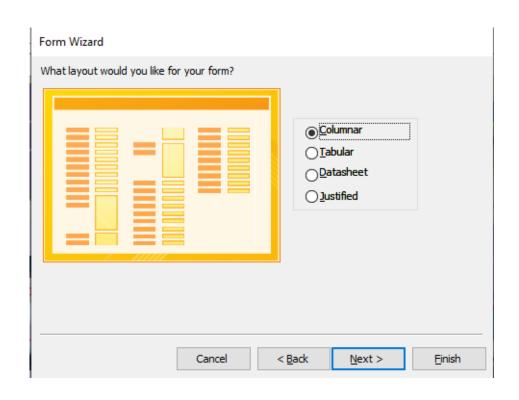
5.4 CREATION OF FORMS

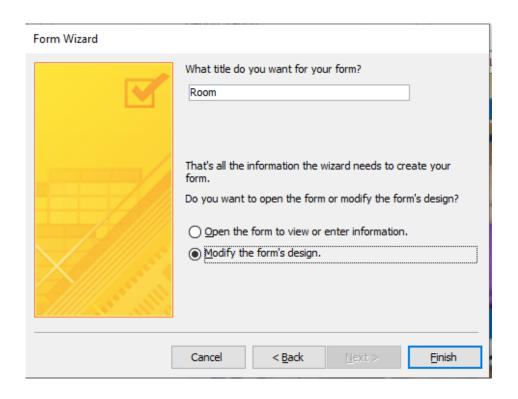
I Create 19 forms. Because of requirement I Attach screen shots of form wizard out of 19 form.

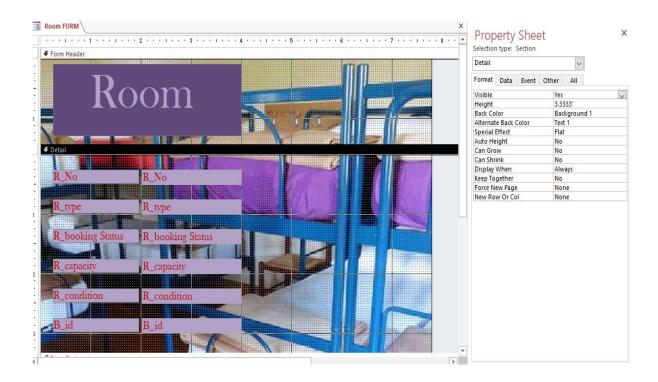


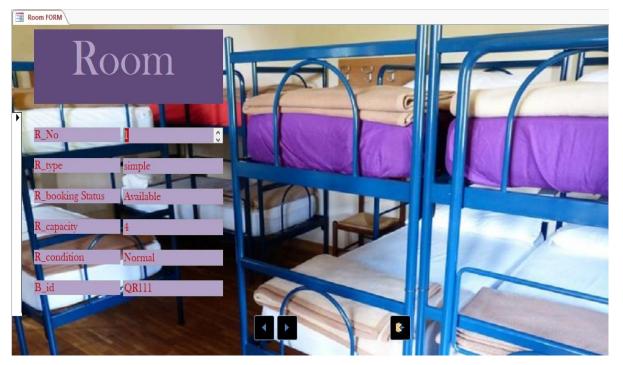
Form Wizard



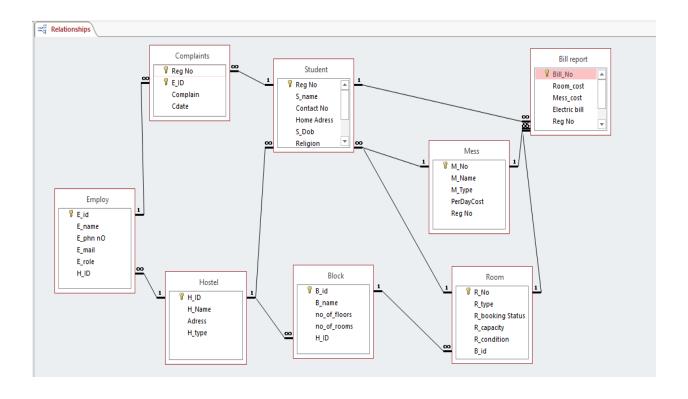








5.5 RELATIONSHIP DIAGRAM:





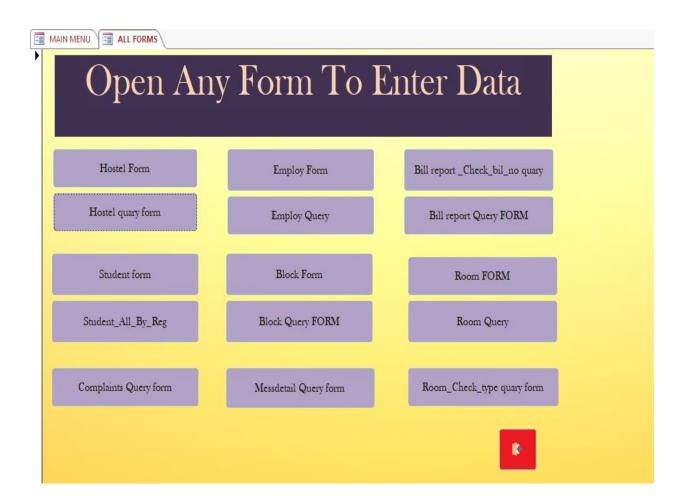
MAIN MENU"

I create a Main menu form for Some function .In this form I create some button for some different functions like Data entry , to see All queries, to see All Reports and other for Exit and close .i Attach screen shot of this as bellow.



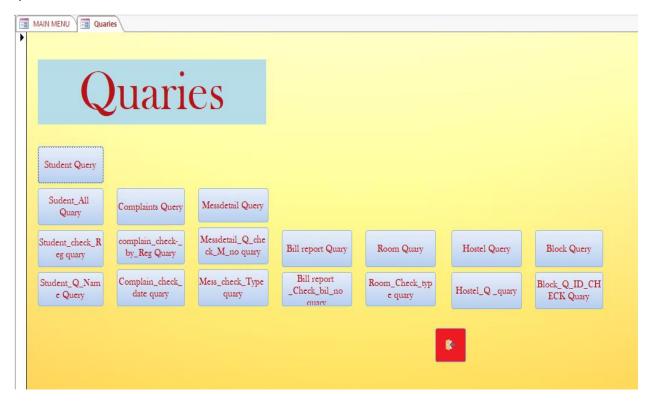
DATA ENTRY:

When you click data entry button then you go to Data entry form in which all the forms are present so we can entry data easily



QUERIES FORM:

When we click to queries button then we go to queries form in which we can see all the queries of my database .



REPORTS FORM:

When we click on reports button in main menu then a reports form will be open in we can see all the reports.

