



राष्ट्रीय प्रौद्योगिकी संस्थान दिल्ली
National Institute of Technology Delhi
(An autonomous Institute under the aegis of Ministry of HRD, Govt. of India)

PROJECT TITLE

HOSTEL MANAGEMENT SYSTEM

COURSE TITLE : DATABASE MANAGEMENT SYSTEM

COURSE CODE : CSB - 202

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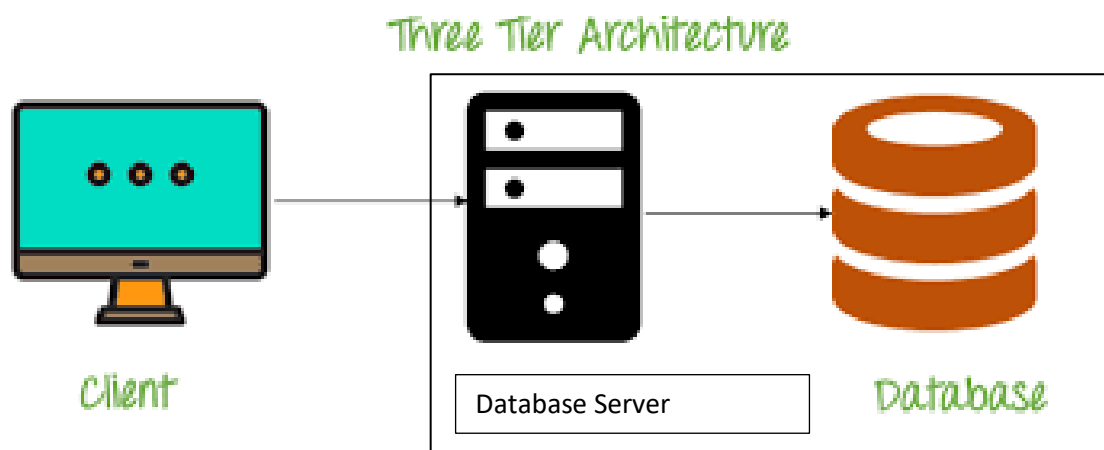
SYSTEM DESCRIPTION AT A GLANCE

The aim of this project is to make a computer generated web-based program with the blend of database management system and PHP. It can manage the details of the students who can register themselves and all of this being supervised by the admin who have all sorts of rights to manipulate data.

This system can add a user, search, update, delete and bill an existing data of the student.

All of this is done with the help of the front-end and back-end with the localhost as a server. We've implemented a three-tier client-server architecture, where the business layer(middle layer) is implemented through PHP.

We've used PHPMyAdmin to store database using MySQL.



CASE STUDY

Scenario: Currently there are a lot of drawbacks in maintaining a manual record of the registered hostel students. Since most hostels are run by a single warden, the record of the students living in the hostel are not known by the warden itself. He has to go to every room to ensure whether the room is occupied or not.

After payment of the hostel fees, there's no soft copy of the receipt received by the student. Since the hard copy is submitted to the Office Room of the College. The students are mostly left without any proof statement of registration.

Room allocation also becomes an issue for the warden, since the warden might want to know which rooms are available, number of occupants in the room.

There's also no record of the basic amenities like beds, tables, cupboards, etc. issued to each room. There's also no facility to register any complain online. Students have to manually enter the problems they're facing.

The students have to write applications to the warden whenever they have to go outside of the hostel vicinity. There's also no record of the members of the hostel committee and the mess committee.

There are also many different hostels location-wise, and mess services operating in those hostels. Hence, we are trying to unify every service provided under a single hood using the DBMS to maintain integrity of data, ease the accessing of data

and remove data redundancy which will result in convenient and faster data retrieval system.

Objective: The purpose of making this project is to get rid from the manual entry and record system and try to simplify and ease the registration process for hostels by implementation of the Database Management System.

Functionalities : The project is designed to keep the record of the students living in the hostel and the hostel building , allocation of rooms, their monthly or semester wise dues and many more things such as taking complaints from the students living in the hostel and the respective complaint can receive feedback status from the warden. The system should also maintain the wardens and the caretakers of the respective hostels. It would also have hostel leave application facility and the details of all the members of the hostel committee and the mess committee year-wise. We are trying to make this system simple, but we will try to cover all the basic elements use for hostel management database. Following are some of the Functionalities: -

- To able to pay fees and generate receipt.
- To register complaints regarding the hostel issues and get feedback accordingly from the warden.
- Get the details of students living in the hostels.
- Number of rooms available or occupied.
- The amenities supplied to each room.

- The list of wardens of the respective hostels should also be present in the database.
- To submit leave request so that the warden could process it.
- Get the details of various hostel buildings and the number of students living there.
- To be able to fetch the details of the members of the hostel committee and the mess committee.

Basically, our goal is to keep database of students in hostels with different views such that their room number, fees status, their course name, semester and can be many more.

We are trying to make this project so that it can be implement at any level and can be productive and useful for the hostel administration.

HARDWARE REQUIREMENTS

Assuming that a typical system offers hundreds of entries . The volume of the information to be handled is thus about millions of characters. Further the whole information has to be processed. All this suggest that the minimum hardware requirements should be :-

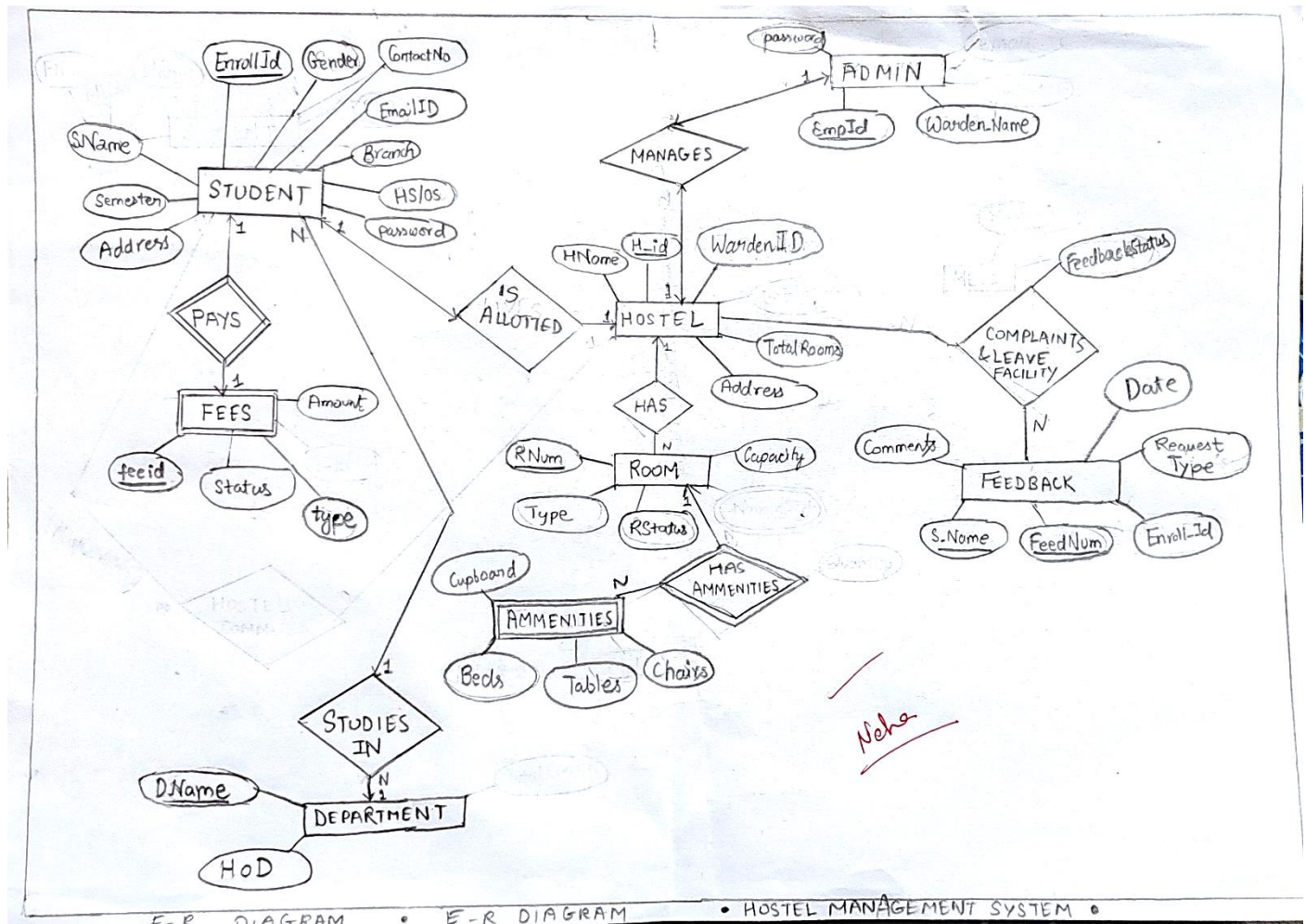
- Operating **System: Windows** 7/8/8.1/10.
- Memory (RAM): 1 GB of RAM required.
- Hard Disk Space: 200 MB of free space required.
- Processor: Intel Pentium 4 or later.
- Cache : 512KB

SOFTWARE REQUIRMENTS

In the development of a project the selection of an appropriate DBMS Software and a platform is of primary importance. With many software options available a developer has to consider the various features and functionalities and ease of handling the software, keeping an account of such things we decided to use Bootstrap Studio for designing the front-end, the front-end has been developed by the use of HTML,CSS and JS. MySQL has been used as a back-end query language. PHP has been chosen as a scripting language.The server chosen is the localhost which would be hosting the website on the machine itself. The following software are required :-

- Web Browser (Chrome/Edge/Firefox,etc.)
- Graphics Accelerator (Nvidia or ATI or GL Server)
- XAMPP/WAMPP or any other web server which can host
- MySQL
- BootStrap Studio/ Bootstrap CDN

ER DIAGRAM

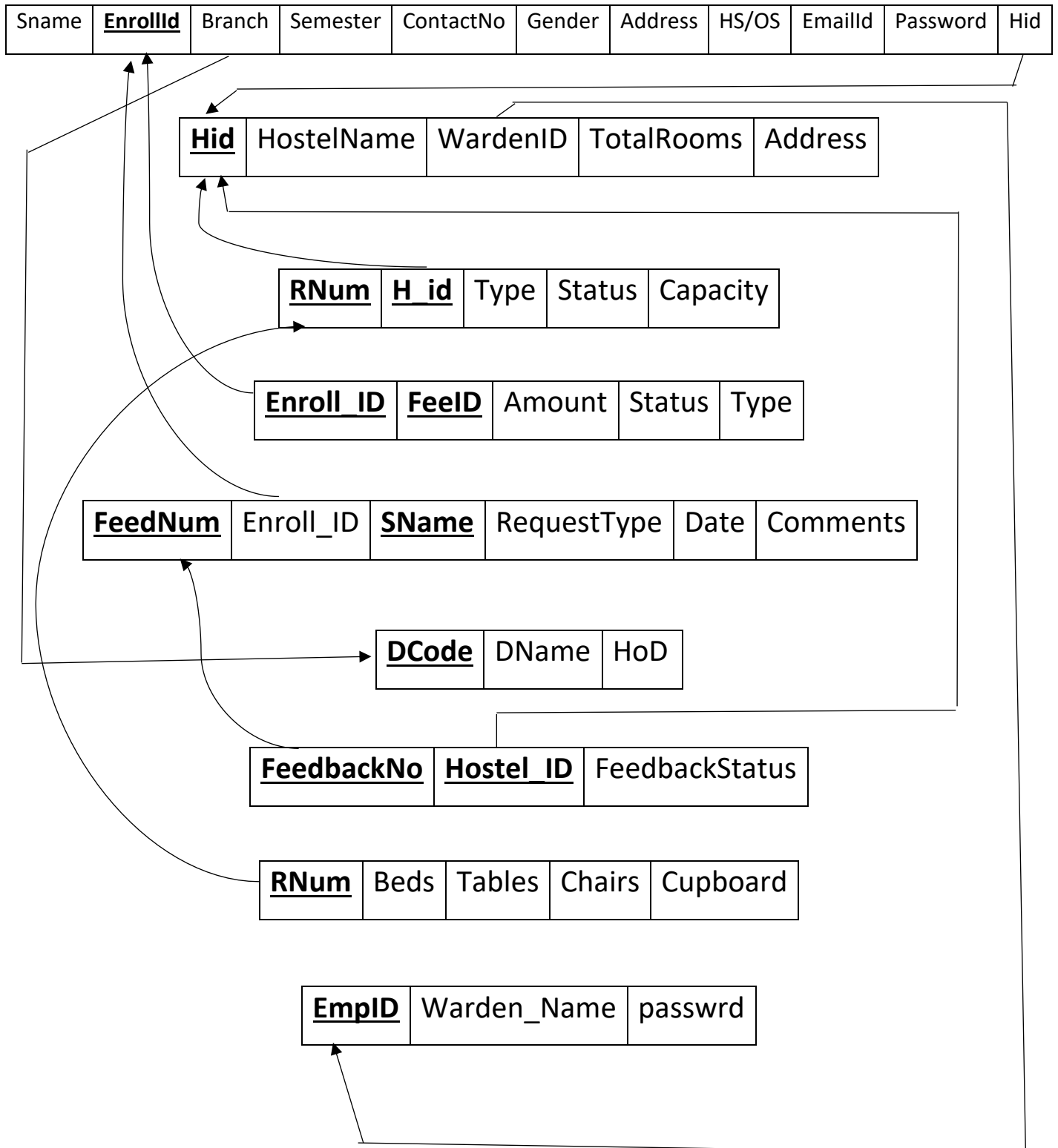


E-R DIAGRAM

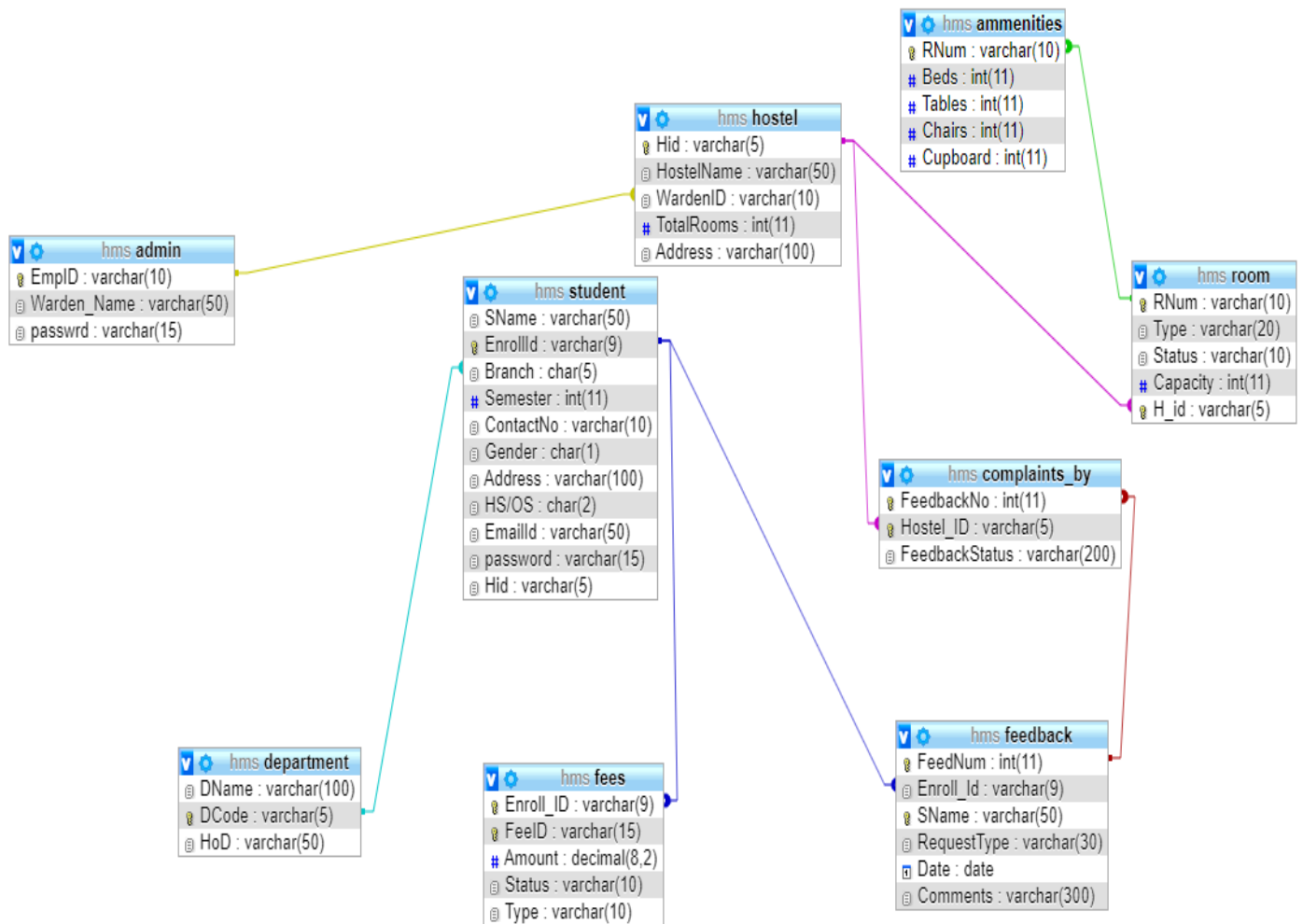
E-R DIAGRAM

• HOSTEL MANAGEMENT SYSTEM •

Mapping ER Model to R Model



Relational Schema



Data Dictionary

admin

| Column | Type | Null | Default | Links to | Comments | MIME |
|------------------------|-------------|------|---------|----------|----------|------|
| EmpID <i>(Primary)</i> | varchar(10) | No | | | | |
| Warden_Name | varchar(50) | No | | | | |
| passwd | varchar(15) | No | | | | |

Indexes

| Keyname | Type | Unique | Packed | Column | Cardinality | Collation | Null | Comment |
|---------|-------|--------|--------|--------|-------------|-----------|------|---------|
| PRIMARY | BTREE | Yes | No | EmpID | 1 | A | No | |

ammenities

| Column | Type | Null | Default | Links to | Comments | MIME |
|-----------------------|-------------|------|---------|--------------|----------|------|
| RNum <i>(Primary)</i> | varchar(10) | No | | room -> RNum | | |
| Beds | int(11) | No | | | | |
| Tables | int(11) | No | | | | |
| Chairs | int(11) | No | | | | |
| Cupboard | int(11) | No | | | | |

Indexes

| Keyname | Type | Unique | Packed | Column | Cardinality | Collation | Null | Comment |
|---------|-------|--------|--------|--------|-------------|-----------|------|---------|
| PRIMARY | BTREE | Yes | No | RNum | 6 | A | No | |

complaints_by

| Column | Type | Null | Default | Links to | Comments | MIME |
|-----------------------------|--------------|------|---------|----------|----------|------|
| FeedbackNo <i>(Primary)</i> | int(11) | No | | | | |
| Hostel_ID <i>(Primary)</i> | varchar(5) | No | | | | |
| FeedbackStatus | varchar(200) | No | | | | |

Indexes

| Keyname | Type | Unique | Packed | Column | Cardinality | Collation | Null | Comment |
|---------|-------|--------|--------|------------|-------------|-----------|------|---------|
| PRIMARY | BTREE | Yes | No | FeedbackNo | 2 | A | No | |
| | | | | Hostel_ID | 2 | A | No | |

department

| Column | Type | Null | Default | Links to | Comments | MIME |
|--------|--------------|------|---------|----------|----------|------|
| DName | varchar(100) | No | | | | |
| | | | | | | |

| | | | | | | |
|--------------------------|-------------|----|--|--|--|--|
| DCode (<i>Primary</i>) | varchar(5) | No | | | | |
| HoD | varchar(50) | No | | | | |

Indexes

| Keyname | Type | Unique | Packed | Column | Cardinality | Collation | Null | Comment |
|---------|-------|--------|--------|--------|-------------|-----------|------|---------|
| PRIMARY | BTREE | Yes | No | DCode | 3 | A | No | |

feedback

| Column | Type | Null | Default | Links to | Comments | MIME |
|----------------------------|--------------|------|---------|---------------------|----------|------|
| FeedNum (<i>Primary</i>) | int(11) | No | | | | |
| Enroll_Id | varchar(9) | No | | student -> EnrollId | | |
| SName (<i>Primary</i>) | varchar(50) | No | | | | |
| RequestType | varchar(30) | No | | | | |
| Date | date | No | | | | |
| Comments | varchar(300) | Yes | NULL | | | |

Indexes

| Keyname | Type | Unique | Packed | Column | Cardinality | Collation | Null | Comment |
|---------|-------|--------|--------|-----------|-------------|-----------|------|---------|
| PRIMARY | BTREE | Yes | No | FeedNum | 2 | A | No | |
| | | | | SName | 2 | A | No | |
| feed | BTREE | No | No | Enroll_Id | 2 | A | No | |

fees

| Column | Type | Null | Default | Links to | Comments | MIME |
|------------------------------|--------------|------|---------|---------------------|----------|------|
| Enroll_ID (<i>Primary</i>) | varchar(9) | No | | student -> EnrollId | | |
| FeeID (<i>Primary</i>) | varchar(15) | No | | | | |
| Amount | decimal(8,2) | No | | | | |
| Status | varchar(10) | No | | | | |
| Type | varchar(10) | No | | | | |

Indexes

| Keyname | Type | Unique | Packed | Column | Cardinality | Collation | Null | Comment |
|---------|-------|--------|--------|-----------|-------------|-----------|------|---------|
| PRIMARY | BTREE | Yes | No | Enroll_ID | 3 | A | No | |
| | | | | FeeID | 3 | A | No | |

hostel

| Column | Type | Null | Default | Links to | Comments | MIME |
|------------------------|------------|------|---------|----------|----------|------|
| Hid (<i>Primary</i>) | varchar(5) | No | | | | |

| | | | | | | | |
|------------|--------------|-----|------|----------------|--|--|--|
| HostelName | varchar(50) | No | | | | | |
| WardenID | varchar(10) | No | | admin -> EmpID | | | |
| TotalRooms | int(11) | Yes | NULL | | | | |
| Address | varchar(100) | No | | | | | |

Indexes

| Keyname | Type | Unique | Packed | Column | Cardinality | Collation | Null | Comment |
|---------|-------|--------|--------|----------|-------------|-----------|------|---------|
| PRIMARY | BTREE | Yes | No | Hid | 2 | A | No | |
| warden | BTREE | No | No | WardenID | 2 | A | No | |

room

| Column | Type | Null | Default | Links to | Comments | MIME |
|----------------|-------------|------|---------|---------------|----------|------|
| RNum (Primary) | varchar(10) | No | | | | |
| Type | varchar(20) | No | | | | |
| Status | varchar(10) | Yes | NULL | | | |
| Capacity | int(11) | Yes | NULL | | | |
| H_id (Primary) | varchar(5) | No | | hostel -> Hid | | |

Indexes

| Keyname | Type | Unique | Packed | Column | Cardinality | Collation | Null | Comment |
|---------|-------|--------|--------|--------|-------------|-----------|------|---------|
| PRIMARY | BTREE | Yes | No | RNum | 6 | A | No | |
| | | | | H_id | 6 | A | No | |
| room | BTREE | No | No | H_id | 6 | A | No | |

student

| Column | Type | Null | Default | Links to | Comments | MIME |
|--------------------|--------------|------|---------|---------------------|----------|------|
| SName | varchar(50) | No | | | | |
| EnrollId (Primary) | varchar(9) | No | | | | |
| Branch | char(5) | No | | department -> DCode | | |
| Semester | int(11) | No | | | | |
| ContactNo | varchar(10) | No | | | | |
| Gender | char(1) | No | | | | |
| Address | varchar(100) | Yes | NULL | | | |
| HS/OS | char(2) | No | | | | |
| EmailId | varchar(50) | Yes | NULL | | | |
| password | varchar(15) | No | | | | |
| Hid | varchar(5) | No | | | | |

Indexes

| Keyname | Type | Unique | Packed | Column | Cardinality | Collation | Null | Comment |
|---------|-------|--------|--------|----------|-------------|-----------|------|---------|
| PRIMARY | BTREE | Yes | No | EnrollId | 4 | A | No | |
| branch | BTREE | No | No | Branch | 2 | A | No | |

SQL QUERIES

- **Queries to Create the relations and populating the database :**

```
--  
-- Table structure for table admin  
--
```

```
CREATE TABLE admin (  
  EmpID varchar(10) NOT NULL,  
  Warden_Name varchar(50) NOT NULL,  
  passwrđ varchar(15) NOT NULL  
);
```

```
--  
-- Dumping data for table admin  
--
```

```
INSERT INTO admin (EmpID, Warden_Name, passwrđ) VALUES  
( 'admin', 'ABC XYZ', 'admin'),  
( 'admin2', 'Robert White', 'admin2'),  
( 'admin3', 'Meera Singh', 'admin3');
```

```
--  
-- Table structure for table ammenities  
--
```

```
CREATE TABLE ammenities (  
  RNum varchar(10) NOT NULL,  
  Beds int(11) NOT NULL,  
  Tables int(11) NOT NULL,  
  Chairs int(11) NOT NULL,  
  Cupboard int(11) NOT NULL  
);
```

```
--  
-- Dumping data for table ammenities  
--
```

```
INSERT INTO ammenities (RNum, Beds, Tables, Chairs, Cupboard) VALUES  
( 'N01', 6, 3, 6, 3),  
( 'N02', 4, 2, 4, 4),  
( 'N03', 4, 3, 4, 2),  
( 'N04', 2, 2, 2, 2),
```

```
('N05', 4, 4, 3, 3),
('S01', 2, 2, 1, 1),
('S02', 2, 2, 2, 2),
('S03', 1, 1, 1, 1),
('S04', 2, 1, 0, 1),
('S05', 2, 1, 2, 2),
('T01', 2, 1, 2, 1),
('T02', 2, 1, 1, 1),
('T04', 2, 1, 2, 1),
('T06', 2, 2, 2, 2),
('T07', 2, 2, 1, 2),
('T08', 2, 1, 2, 1),
('T09', 2, 1, 1, 1),
('T10', 2, 2, 2, 2);
```

```
-----
```

```
--
-- Table structure for table complaints_by
--
```

```
CREATE TABLE complaints_by (
FeedbackNo int(11) NOT NULL,
Hostel_ID varchar(5) NOT NULL,
FeedbackStatus varchar(200) NOT NULL
);
```

```
--
-- Dumping data for table complaints_by
--
```

```
INSERT INTO complaints_by (FeedbackNo, Hostel_ID, FeedbackStatus) VALUES
(1, 'TDI', 'Repaired'),
(2, 'TDI', 'Accepted');
```

```
-----
```

```
--
-- Table structure for table department
--
```

```
CREATE TABLE department (
DName varchar(100) NOT NULL,
DCode varchar(5) NOT NULL,
HoD varchar(50) NOT NULL
);
```

```
--
-- Dumping data for table department
--
```

```
INSERT INTO department (DName, DCode, HoD) VALUES
('Computer Science and Engineering', 'CSE', 'ABC'),
('Electronics and Communication Engineering', 'ECE', 'DEF'),
('Electrical and EElectronical Engineering', 'EEE', 'GHI');
```

```
-- -----
```

```
--
-- Table structure for table feedback
--
```

```
CREATE TABLE feedback (
FeedNum int(11) NOT NULL,
Enroll_Id varchar(9) NOT NULL,
SName varchar(50) NOT NULL,
RequestType varchar(30) NOT NULL,
Date date NOT NULL,
Comments varchar(300) DEFAULT NULL
);
```

```
--
-- Dumping data for table feedback
--
```

```
INSERT INTO feedback (FeedNum, Enroll_Id, SName, RequestType, Date, Comments)
VALUES
(1, '181210036', 'Prasun Verma', 'Water Supply', '2019-11-18', 'Water not coming
through the taps'),
(2, '181210050', 'Shashi Raj', 'Leave', '2019-11-11', 'Going out of premises for
shopping');
```

```
-- -----
```

```
--
-- Table structure for table fees
--
```

```
CREATE TABLE fees (
Enroll_ID varchar(9) NOT NULL,
FeeID varchar(15) NOT NULL,
Amount decimal(8,2) NOT NULL,
Status varchar(10) NOT NULL,
Type varchar(10) NOT NULL
);
```

```
--
-- Dumping data for table fees
--
```

```
INSERT INTO fees (Enroll_ID, FeeID, Amount, Status, Type) VALUES
('181210036', '181210036SEP', '3100.00', 'Paid', 'MESS'),
```



```
('181210050', '181210050SEP', '3100.00', 'Pending', 'MESS'),  
( '181210051', '181210051HOS', '10000.00', 'Paid', 'HOSTEL');
```

```
-- -----
```

```
--  
-- Table structure for table hostel  
--
```

```
CREATE TABLE hostel (  
  Hid varchar(5) NOT NULL,  
  HostelName varchar(50) NOT NULL,  
  WardenID varchar(10) NOT NULL,  
  TotalRooms int(11) DEFAULT NULL,  
  Address varchar(100) NOT NULL  
);
```

```
--  
-- Dumping data for table hostel  
--
```

```
INSERT INTO hostel (Hid, HostelName, WardenID, TotalRooms, Address) VALUES  
( 'NITD', 'GIRLS_HOSTEL', 'admin3', 5, 'Sector,A-7,New Delhi'),  
( 'SRCH', 'Harishchandra', 'admin2', 5, 'sector A-7,Narela'),  
( 'TDI', 'MY FLOOR 2', 'admin', 9, 'Kundli,Sonipat,Haryana');
```

```
-- -----
```

```
--  
-- Table structure for table room  
--
```

```
CREATE TABLE room (  
  RNum varchar(10) NOT NULL,  
  Type varchar(20) NOT NULL,  
  Status varchar(10) DEFAULT NULL,  
  Capacity int(11) DEFAULT NULL,  
  H_id varchar(5) NOT NULL  
);
```

```
--  
-- Dumping data for table room  
--
```

```
INSERT INTO room (RNum, Type, Status, Capacity, H_id) VALUES  
( 'N01', 'without bathroom', 'occupied', 6, 'NITD'),  
( 'N02', 'without bathroom', 'occupied', 4, 'NITD'),  
( 'N03', 'with bathroom', 'vacant', 2, 'NITD'),  
( 'N04', 'without bathroom', 'occupied', 4, 'NITD'),  
( 'N05', 'with bathroom', 'vacant', 2, 'NITD'),  
( 'S01', 'with Bathroom', 'Vacant', 3, 'SRCH'),
```

```
('S02', 'with Bathroom', 'Occupied', 2, 'SRCH'),
('S03', 'with bathroom', 'occupied', 1, 'SRCH'),
('S04', 'without bathroom', 'vacant', 2, 'SRCH'),
('S05', 'without bathroom', 'vacant', 2, 'SRCH'),
('T01', 'with bathroom', 'vacant', 2, 'TDI'),
('T02', 'without bathroom', 'occupied', 2, 'TDI'),
('T04', 'without Bathroom', 'Occupied', 2, 'TDI'),
('T05', 'without Bathroom', 'Occupied', 2, 'TDI'),
('T06', 'with bathroom', 'occupied', 2, 'TDI'),
('T07', 'without Bathroom', 'Occupied', 2, 'TDI'),
('T08', 'without Bathroom', 'Occupied', 2, 'TDI'),
('T09', 'with Bathroom', 'Occupied ', 2, 'TDI'),
('T10', 'without Bathroom', 'Vacant', 3, 'TDI');
```

```
--
-- Table structure for table student
--
```

```
CREATE TABLE student (
  SName varchar(50) NOT NULL,
  EnrollId varchar(9) NOT NULL,
  Branch char(5) NOT NULL,
  Semester int(11) NOT NULL,
  ContactNo varchar(10) NOT NULL,
  Gender char(1) NOT NULL,
  Address varchar(100) DEFAULT NULL,
  HS/OS char(2) NOT NULL,
  EmailId varchar(50) DEFAULT NULL,
  password varchar(15) NOT NULL,
  Hid varchar(5) NOT NULL
);
```

```
--
-- Dumping data for table student
--
```

```
INSERT INTO student (SName, EnrollId, Branch, Semester, ContactNo, Gender,
Address, HS/OS, EmailId, password, Hid) VALUES
('Neerja Singh', '171210020', 'CSE', 5, '7778885451', 'F', NULL, 'HS', NULL, 'neerja',
'NITD'),
('Jeetu Raheja', '171210025', 'CSE', 5, '6665566655', 'M', NULL, 'HS', NULL, 'jeetu',
'SRCH'),
('Nobita Nobita', '171220046', 'ECE', 5, '4545454122', 'M', NULL, 'OS', NULL, 'nobita',
'SRCH'),
('Rohit Mehra', '171230001', 'EEE', 5, '9466532154', 'M', NULL, 'HS', NULL, 'rohit',
'SRCH'),
('Geeta Singh', '171230010', 'EEE', 5, '9995656510', 'F', NULL, 'OS', NULL, 'geeta',
'NITD'),
```

```
('Govind Singh', '171230054', 'EEE', 5, '8181818181', 'M', NULL, 'HS', NULL, 'govind',
'SRCH'),
('Meera Khanna', '181210002', 'CSE', 3, '1414141414', 'F', NULL, 'OS', NULL, 'meera',
'NITD'),
('Prasun Verma', '181210036', 'CSE', 3, '9998887776', 'M', NULL, 'OS', NULL, 'abc',
'TDI'),
('Raghav Shukla', '181210038', 'CSE', 3, '5556667778', 'M', NULL, 'OS', NULL, '123',
'TDI'),
('Shashi Raj', '181210050', 'CSE', 3, '1112224445', 'M', NULL, 'OS', NULL, 'def', 'TDI'),
('Shivam Joshi', '181210051', 'CSE', 3, '2223334445', 'M', NULL, 'HS', NULL, '456', 'TDI'),
('Jasrup Kaur', '181230016', 'EEE', 3, '4564564568', 'F', NULL, 'OS', NULL, 'jasrup',
'NITD'),
('Sita Kumari', '191220013', 'ECE', 1, '1212121212', 'F', NULL, 'HS', NULL, 'sita', 'NITD');
```

```
--
```

```
-- Indexes for dumped tables
```

```
--
```

```
--
```

```
-- Indexes for table admin
```

```
--
```

```
ALTER TABLE admin
```

```
ADD PRIMARY KEY (EmpID);
```

```
--
```

```
-- Indexes for table ammenities
```

```
--
```

```
ALTER TABLE ammenities
```

```
ADD PRIMARY KEY (RNum);
```

```
--
```

```
-- Indexes for table complaints_by
```

```
--
```

```
ALTER TABLE complaints_by
```

```
ADD PRIMARY KEY (FeedbackNo,Hostel_ID),
```

```
ADD KEY Hostel_ID (Hostel_ID);
```

```
--
```

```
-- Indexes for table department
```

```
--
```

```
ALTER TABLE department
```

```
ADD PRIMARY KEY (DCode);
```

```
--
```

```
-- Indexes for table feedback
```

```
--
```

```
ALTER TABLE feedback
```

```
ADD PRIMARY KEY (FeedNum,SName),
```

```
ADD KEY feed (Enroll_Id);
```

```
--
```

```

-- Indexes for table fees
--
ALTER TABLE fees
ADD PRIMARY KEY (Enroll_ID, FeeID);

--
-- Indexes for table hostel
--
ALTER TABLE hostel
ADD PRIMARY KEY (Hid),
ADD KEY warden (WardenID);

--
-- Indexes for table room
--
ALTER TABLE room
ADD PRIMARY KEY (RNum, H_id),
ADD KEY room (H_id);

--
-- Indexes for table student
--
ALTER TABLE student
ADD PRIMARY KEY (EnrollId),
ADD KEY branch (Branch);

--
-- Constraints for dumped tables
--

--
-- Constraints for table ammenities
--
ALTER TABLE ammenities
ADD CONSTRAINT supply FOREIGN KEY (RNum) REFERENCES room (RNum);

--
-- Constraints for table complaints_by
--
ALTER TABLE complaints_by
ADD CONSTRAINT complaints_by_ibfk_1 FOREIGN KEY (FeedbackNo) REFERENCES
feedback (FeedNum),
ADD CONSTRAINT complaints_by_ibfk_2 FOREIGN KEY (Hostel_ID) REFERENCES
hostel (Hid);

--
-- Constraints for table feedback
--
ALTER TABLE feedback
ADD CONSTRAINT feed FOREIGN KEY (Enroll_Id) REFERENCES student (EnrollId);

```

```
--
-- Constraints for table fees
--
ALTER TABLE fees
ADD CONSTRAINT feere1 FOREIGN KEY (Enroll_ID) REFERENCES student (EnrollId);

--
-- Constraints for table hostel
--
ALTER TABLE hostel
ADD CONSTRAINT warden FOREIGN KEY (WardenID) REFERENCES admin (EmpID);

--
-- Constraints for table room
--
ALTER TABLE room
ADD CONSTRAINT room FOREIGN KEY (H_id) REFERENCES hostel (Hid);

--
-- Constraints for table student
--
ALTER TABLE student
ADD CONSTRAINT branch FOREIGN KEY (Branch) REFERENCES department (DCode);

INSERT INTO fees (Enroll_ID, FeeID, Amount, Status, Type) VALUES
('181210051', '181210051SEP', '3100', 'Paid', 'Mess');
COMMIT;
```

Sample of populated database :-

Student

| SName | EnrollId | Branch | Semester | ContactNo | Gender | Address | HS/OS | EmailId | password | Hid |
|---------------|-----------|--------|----------|------------|--------|---------|-------|---------|----------|------|
| Neerja Singh | 171210020 | CSE | 5 | 7778885451 | F | NULL | HS | NULL | neerja | NITD |
| Jeetu Raheja | 171210025 | CSE | 5 | 6665566655 | M | NULL | HS | NULL | jeetu | SRCH |
| Nobita Nobita | 171220046 | ECE | 5 | 4545454122 | M | NULL | OS | NULL | nobita | SRCH |
| Rohit Mehra | 171230001 | EEE | 5 | 9466532154 | M | NULL | HS | NULL | rohit | SRCH |
| Geeta Singh | 171230010 | EEE | 5 | 9995656510 | F | NULL | OS | NULL | geeta | NITD |
| Govind Singh | 171230054 | EEE | 5 | 8181818181 | M | NULL | HS | NULL | govind | SRCH |
| Meera Khanna | 181210002 | CSE | 3 | 1414141414 | F | NULL | OS | NULL | meera | NITD |
| Prasun Verma | 181210036 | CSE | 3 | 9998887776 | M | NULL | OS | NULL | abc | TDI |
| Raghav Shukla | 181210038 | CSE | 3 | 5556667778 | M | NULL | OS | NULL | 123 | TDI |
| Shashi Raj | 181210050 | CSE | 3 | 1112224445 | M | NULL | OS | NULL | def | TDI |
| Shivam Joshi | 181210051 | CSE | 3 | 2223334445 | M | NULL | HS | NULL | 456 | TDI |
| Jasrup Kaur | 181230016 | EEE | 3 | 4564564568 | F | NULL | OS | NULL | jasrup | NITD |
| Sita Kumari | 191220013 | ECE | 1 | 1212121212 | F | NULL | HS | NULL | sita | NITD |

Hostel

| Hid | HostelName | WardenID | TotalRooms | Address |
|------|---------------|----------|------------|------------------------|
| NITD | GIRLS_HOSTEL | admin3 | 5 | Sector,A-7,New Delhi |
| SRCH | Harishchandra | admin2 | 5 | sector A-7,Narela |
| TDI | MY FLOOR 2 | admin | 9 | Kundli,Sonipat,Haryana |

Room

| RNum | Type | Status | Capacity | H_id |
|------|------------------|----------|----------|------|
| N01 | without bathroom | occupied | 6 | NITD |
| N02 | without bathroom | occupied | 4 | NITD |
| N03 | with bathroom | vacant | 2 | NITD |
| N04 | without bathroom | occupied | 4 | NITD |
| N05 | with bathroom | vacant | 2 | NITD |
| S01 | with Bathroom | Vacant | 3 | SRCH |
| S02 | with Bathroom | Occupied | 2 | SRCH |
| S03 | with bathroom | occupied | 1 | SRCH |
| S04 | without bathroom | vacant | 2 | SRCH |
| S05 | without bathroom | vacant | 2 | SRCH |
| T01 | with bathroom | vacant | 2 | TDI |
| T02 | without bathroom | occupied | 2 | TDI |
| T04 | without Bathroom | Occupied | 2 | TDI |
| T05 | without Bathroom | Occupied | 2 | TDI |
| T06 | with bathroom | occupied | 2 | TDI |
| T07 | without Bathroom | Occupied | 2 | TDI |
| T08 | without Bathroom | Occupied | 2 | TDI |
| T09 | with Bathroom | Occupied | 2 | TDI |
| T10 | without Bathroom | Vacant | 3 | TDI |

Fees

| Enroll_ID | FeeID | Amount | Status | Type |
|-----------|--------------|----------|---------|--------|
| 181210036 | 181210036SEP | 3100.00 | Paid | MESS |
| 181210050 | 181210050SEP | 3100.00 | Pending | MESS |
| 181210051 | 181210051HOS | 10000.00 | Paid | HOSTEL |
| 181210051 | 181210051SEP | 3100.00 | Paid | Mess |

Feedback

| FeedNum | Enroll_Id | SName | RequestType | Date | Comments |
|---------|-----------|--------------|--------------|------------|------------------------------------|
| 1 | 181210036 | Prasun Verma | Water Supply | 2019-11-18 | Water not coming through the taps |
| 2 | 181210050 | Shashi Raj | Leave | 2019-11-11 | Going out of premises for shopping |

Department

| DName | DCode | HoD |
|---|-------|-----|
| Computer Science and Engineering | CSE | ABC |
| Electronics and Communication Engineering | ECE | DEF |
| Electrical and EElectronical Engineering | EEE | GHI |

Complaints_by

| FeedbackNo | Hostel_ID | FeedbackStatus |
|------------|-----------|----------------|
| 1 | TDI | Repaired |
| 2 | TDI | Accepted |

Ammenities

| RNum | Beds | Tables | Chairs | Cupboard |
|------|------|--------|--------|----------|
| N01 | 6 | 3 | 6 | 3 |
| N02 | 4 | 2 | 4 | 4 |
| N03 | 4 | 3 | 4 | 2 |
| N04 | 2 | 2 | 2 | 2 |
| N05 | 4 | 4 | 3 | 3 |
| S01 | 2 | 2 | 1 | 1 |
| S02 | 2 | 2 | 2 | 2 |
| S03 | 1 | 1 | 1 | 1 |
| S04 | 2 | 1 | 0 | 1 |
| S05 | 2 | 1 | 2 | 2 |
| T01 | 2 | 1 | 2 | 1 |
| T02 | 2 | 1 | 1 | 1 |
| T04 | 2 | 1 | 2 | 1 |
| T06 | 2 | 2 | 2 | 2 |
| T07 | 2 | 2 | 1 | 2 |
| T08 | 2 | 1 | 2 | 1 |
| T09 | 2 | 1 | 1 | 1 |
| T10 | 2 | 2 | 2 | 2 |

Admin

| EmpID | Warden_Name | passwr |
|--------|--------------|--------|
| admin | ABC XYZ | admin |
| admin2 | Robert White | admin2 |
| admin3 | Meera Singh | admin3 |

Additional Queries

1. Insert a new entry in relation student with Student Name=Rahul Kumar in SRCH hostel.

```
INSERT INTO student (SName, EnrollId, Branch, Semester, ContactNo, Gender, Address, `HS/OS`, EmailId, password, Hid) VALUES ('Rahul Kumar', '171230042', 'EEE', '5', '5556667778', 'M', NULL, 'HS', NULL, 'jkl', 'SRCH');
```

| SName | EnrollId | Branch | Semester | ContactNo | Gender | Address | HS/OS | EmailId | password | Hid |
|---------------|-----------|--------|----------|------------|--------|---------|-------|---------|----------|------|
| Neerja Singh | 171210020 | CSE | 5 | 7778885451 | F | NULL | HS | NULL | neerja | NITD |
| Jeetu Raheja | 171210025 | CSE | 5 | 6665566655 | M | NULL | HS | NULL | jeetu | SRCH |
| Nobita Nobita | 171220046 | ECE | 5 | 4545454122 | M | NULL | OS | NULL | nobita | SRCH |
| Rohit Mehra | 171230001 | EEE | 5 | 9466532154 | M | NULL | HS | NULL | rohit | SRCH |
| Geeta Singh | 171230010 | EEE | 5 | 9995656510 | F | NULL | OS | NULL | geeta | NITD |
| Rahul Kumar | 171230042 | EEE | 5 | 5556667778 | M | NULL | HS | NULL | jkl | SRCH |
| Govind Singh | 171230054 | EEE | 5 | 8181818181 | M | NULL | HS | NULL | govind | SRCH |
| Meera Khanna | 181210002 | CSE | 3 | 1414141414 | F | NULL | OS | NULL | meera | NITD |
| Prasun Verma | 181210036 | CSE | 3 | 9998887776 | M | NULL | OS | NULL | abc | TDI |
| Raghav Shukla | 181210038 | CSE | 3 | 5556667778 | M | NULL | OS | NULL | 123 | TDI |
| Shashi Raj | 181210050 | CSE | 3 | 1112224445 | M | NULL | OS | NULL | def | TDI |
| Shivam Joshi | 181210051 | CSE | 3 | 2223334445 | M | NULL | HS | NULL | 456 | TDI |
| Jasrup Kaur | 181230016 | EEE | 3 | 4564564568 | F | NULL | OS | NULL | jasrup | NITD |
| Sita Kumari | 191220013 | ECE | 1 | 1212121212 | F | NULL | HS | NULL | sita | NITD |

2. Update the ContactNo to 1112224445 where enrolment number=181210050.


```
UPDATE student SET ContactNo='1112224445' WHERE EnrollId='181210050';
```

| | | | | | | | | | | |
|------------|-----------|-----|---|------------|---|------|----|------|-----|-----|
| Shashi Raj | 181210050 | CSE | 3 | 1112224445 | M | NULL | OS | NULL | def | TDI |
|------------|-----------|-----|---|------------|---|------|----|------|-----|-----|

3. Delete the student whose EnrollId=171230042.

```
DELETE FROM student WHERE enrollId='171230042';
```

| SName | EnrollId | Branch | Semester | ContactNo | Gender | Address | HS/OS | EmailId | password | Hid |
|---------------|-----------|--------|----------|------------|--------|---------|-------|---------|----------|------|
| Neerja Singh | 171210020 | CSE | 5 | 7778885451 | F | NULL | HS | NULL | neerja | NITD |
| Jeetu Raheja | 171210025 | CSE | 5 | 6665566655 | M | NULL | HS | NULL | jeetu | SRCH |
| Nobita Nobita | 171220046 | ECE | 5 | 4545454122 | M | NULL | OS | NULL | nobita | SRCH |
| Rohit Mehra | 171230001 | EEE | 5 | 9466532154 | M | NULL | HS | NULL | rohit | SRCH |
| Geeta Singh | 171230010 | EEE | 5 | 9995656510 | F | NULL | OS | NULL | geeta | NITD |
| Govind Singh | 171230054 | EEE | 5 | 8181818181 | M | NULL | HS | NULL | govind | SRCH |
| Meera Khanna | 181210002 | CSE | 3 | 1414141414 | F | NULL | OS | NULL | meera | NITD |
| Prasun Verma | 181210036 | CSE | 3 | 9998887776 | M | NULL | OS | NULL | abc | TDI |
| Raghav Shukla | 181210038 | CSE | 3 | 5556667778 | M | NULL | OS | NULL | 123 | TDI |
| Shashi Raj | 181210050 | CSE | 3 | 1112224445 | M | NULL | OS | NULL | def | TDI |
| Shivam Joshi | 181210051 | CSE | 3 | 2223334445 | M | NULL | HS | NULL | 456 | TDI |
| Jasrup Kaur | 181230016 | EEE | 3 | 4564564568 | F | NULL | OS | NULL | jasrup | NITD |
| Sita Kumari | 191220013 | ECE | 1 | 1212121212 | F | NULL | HS | NULL | sita | NITD |

4. Retrieve Distinct Values of FEES with its type.

```
SELECT DISTINCT Type, Amount from fees;
```

| Type | Amount |
|--------|----------|
| MESS | 3100.00 |
| HOSTEL | 10000.00 |

5. Find the hostel name which have address in Narela.

```
SELECT HostelName, Address FROM hostel WHERE address like '%Narela%';
```

| HostelName | Address |
|---------------|--------------------|
| Harishchandra | sector A-7, Narela |

Relational Algebra Operations (Basic)

1. Fetch the full name of hostellers allotted in the TDI hostel.

```
SELECT SName from student WHERE hid='TDI';
```

SName

Prasun Verma

Raghav Shukla

Shashi Raj

Shivam Joshi

2. Find out the rooms having less than 2 cupboards.

```
SELECT RNum from ammenities WHERE cupboard<2;
```

RNum

S01

S03

S04

T01

T02

T04

T08

T09

3. Retrieve the Name of students who have paid the mess fees.

```
SELECT Sname  
FROM student S, fees F  
WHERE F.enroll_ID = S.enrollID AND type='MESS'  
AND Status='Paid';
```

Sname

Prasun Verma

4. Fetch the Hostel Name and Room Number having two beds ,and have either one chair or zero chair.

```
SELECT R.RNum,H.HostelName  
from Room R,ammenities A,hostel H  
where A.Rnum=R.Rnum AND H.Hid=R.h_id AND A.beds=2 AND A  
.chairs=1  
UNION  
SELECT R1.RNum,H1.HostelName  
from Room R1,ammenities A1,hostel H1
```

```
where A1.Rnum=R1.Rnum AND H1.hid=R1.h_id AND A1.chairs
=0 AND A1.beds=2;
```

| RNum | HostelName |
|------|---------------|
| S01 | Harishchandra |
| T02 | MY FLOOR 2 |
| T07 | MY FLOOR 2 |
| T09 | MY FLOOR 2 |
| S04 | Harishchandra |

5. Find the Room Number of all the rooms in every hostel which have 4 beds but not 3 chairs.

```
SELECT R.RNum from Room R,ammennities A where A.Rnum=R.R
num AND A.beds=4
```

```
EXCEPT
```

```
SELECT R1.RNum from Room R1,ammennities A1 where A1.Rnum
=R1.Rnum AND A1.chairs=3;
```

```
RNum
```

```
N02
```

```
N03
```

Relational Algebra Queries (Derived)

6. Fetch the Hostel Name and Room Number having two beds ,and have one chair and one cupboard.

```
SELECT R.RNum,H.HostelName
from Room R,ammennities A,hostel H
where A.Rnum=R.Rnum AND H.Hid=R.h_id AND A.beds=2 AND A
.chairs=1
```

```
INTERSECT
```

```
SELECT R1.RNum,H1.HostelName
from Room R1,ammennities A1,hostel H1
where A1.Rnum=R1.Rnum AND H1.hid=R1.h_id AND A1.beds=2
AND A1.cupboard=1;
```

| RNum | HostelName |
|------|---------------|
| S01 | Harishchandra |
| T02 | MY FLOOR 2 |
| T09 | MY FLOOR 2 |

7. Fetch the details the rooms belonging to the SRCH Hostel.

```
SELECT RNum,Type,Status,HId ,Capacity
from room R,hostel H
where H.hid=R.H_id AND R.H_id='SRCH';
```

| RNum | Type | Status | Hid | Capacity |
|------|------------------|----------|------|----------|
| S01 | with Bathroom | Vacant | SRCH | 3 |
| S02 | with Bathroom | Occupied | SRCH | 2 |
| S03 | with bathroom | occupied | SRCH | 1 |
| S04 | without bathroom | vacant | SRCH | 2 |
| S05 | without bathroom | vacant | SRCH | 2 |

8. Fetch the Warden Name of each Hostel.

```
SELECT Warden_Name FROM admin A, Hostel H WHERE H.Warden
ID=A.EmpId;
```

Warden_Name

ABC XYZ

Robert White

Meera Singh

9. Find the name of Hostel which have all female students.

```
SELECT HostelName
from hostel H
WHERE NOT EXISTS
((SELECT S.EnrollID
FROM student S WHERE S.Hid=H.Hid)
EXCEPT
(SELECT S1.EnrollID
FROM student S1
WHERE S1.Hid=H.Hid AND Gender <> 'M'));
```

HostelName

: GIRLS_HOSTEL

10. Fetch the Hostel ID and Room Number of which are rooms vacant.

```
SELECT HID, RNum
FROM Hostel H, room R
WHERE H.Hid=R.H_Id And R.Status='Vacant';
```

HID RNum

TDI T01

TDI T10

SRCH S01

SRCH S04

SRCH S05

NITD N03

NITD N05

Advanced SQL Queries

11. Count Total Number of students allotted in TDI hostel.

```
SELECT COUNT(*) AS TotalStudent from student where Hid='T
DI';
```

TotalStudent

4

12. Find the names of the students who have semester lesser than the greatest semester in the branch CSE.

```
SELECT SName
from student S
WHERE S.Semester < (SELECT MAX(S1.semester)
FROM student S1
WHERE S1.Branch='CSE');
```

SName

Meera Khanna

Prasun Verma

Raghav Shukla

Shashi Raj

Shivam Joshi

Jasrup Kaur

Sita Kumari

13. Fetch the Student Name who has paid both the Hostel Fees and the September Mess Fees.

```
SELECT SName
from student S, Fees F
WHERE S.EnrollID=F.Enroll_ID AND F.Type='Mess' AND F.st
atus='Paid' AND F.FeeID LIKE '%SEP'
AND S.EnrollID IN
(SELECT S1.EnrollId
from student S1, Fees F1
WHERE S1.EnrollID=F1.Enroll_ID AND F1.Type='Hostel' AND
F1.status='Paid' AND F1.FeeID LIKE '%HOS' );
```

SName

Shivam Joshi

14. Find the room numbers which have second highest quantity of beds.

```
SELECT RNum
from ammenities
where beds
IN( SELECT MAX(beds) Second_highest
FROM ammenities
WHERE beds NOT IN
(SELECT MAX(beds)
FROM ammenities));
```

RNum

N02

N03

N05

15. Find the total number of beds, chairs and tables present in all the hostels.

```
SELECT SUM(beds) beds, SUM(chairs) chairs, SUM(tables) tables
```

```
from amenities;
```

| beds | chairs | tables |
|------|--------|--------|
| 45 | 38 | 32 |

16. Retrieve the name, roll number, semester and branch of all the students in the hostel in ascending order of their name and branch.

```
SELECT SName, EnrollId, Branch, Semester  
from student
```

```
ORDER by SName, Branch;
```

| SName | EnrollId | Branch | Semester |
|---------------|-----------|--------|----------|
| Geeta Singh | 171230010 | EEE | 5 |
| Govind Singh | 171230054 | EEE | 5 |
| Jasrup Kaur | 181230016 | EEE | 3 |
| Jeetu Raheja | 171210025 | CSE | 5 |
| Meera Khanna | 181210002 | CSE | 3 |
| Neerja Singh | 171210020 | CSE | 5 |
| Nobita Nobi | 171220046 | ECE | 5 |
| Prasun Verma | 181210036 | CSE | 3 |
| Raghav Shukla | 181210038 | CSE | 3 |
| Rohit Mehra | 171230001 | EEE | 5 |
| Shashi Raj | 181210050 | CSE | 3 |
| Shivam Joshi | 181210051 | CSE | 3 |
| Sita Kumari | 191220013 | ECE | 1 |

17. Fetch the count of students branch-wise staying in all the hostels.

```
SELECT Branch, COUNT(*) Students_Count  
from student  
GROUP BY Branch;
```

| Branch | Students_Count |
|--------|----------------|
| CSE | 7 |
| ECE | 2 |
| EEE | 4 |

Database Connectivity :-

Database Connectivity is implemented with the help of PHP (Hypertext Pre-Processor). We make connection to the MySQL with the following piece of code in our index.html file.

```
<?php
```

```
$host="localhost";  
$user="admin";  
$password="admin";  
$db="hms";
```

```
mysql_connect($host,$user,$password);  
mysql_select_db($db);  
if(isset(['uname']))  
{  
    $uname=$_POST['uname']  
    $password=$_POST['password'];  
    $sql="select * from loginform where user=".$uname "AND pass=""  
}
```

```
?>
```

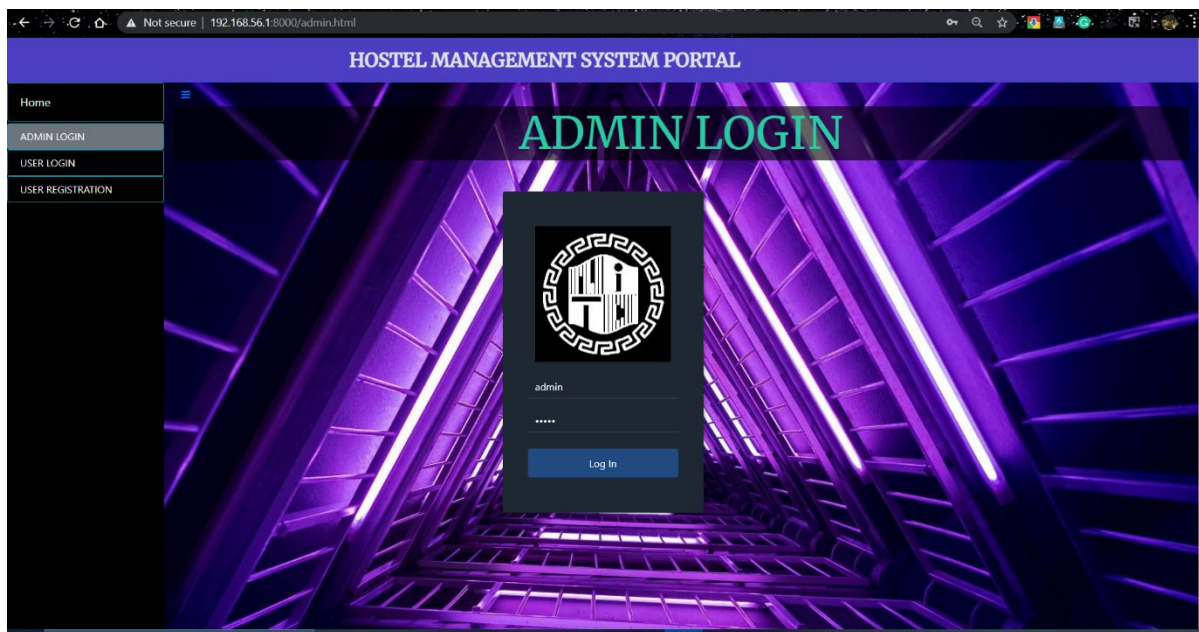
Front End Functionality

The Front End has the following functionalities :-

- A home page which contains three navigations, admin login, user login and user registration namely.
- Only the admins have the access to modify the data of particular students, they can allot rooms to the students who have registered.
- The student(or the user) can only register for the hostel by filling the hostel registration form. The enrollId and password would log in to the user dashboard where the student can update or see his current details.
- The admin has features to filter out the searches by selecting options from a drop-down menu.

Some of the samples of the Front End :-

1. The ADMIN LOGIN page



2. User Registration Form

The screenshot shows a web browser window with the URL `192.168.56.1:8000/registration.html`. The page title is "HOSTEL MANAGEMENT SYSTEM PORTAL". On the left, a sidebar menu contains "Home", "ADMIN LOGIN", "USER LOGIN", and "USER REGISTRATION" (which is highlighted). The main content area is titled "HOSTEL : USER REGISTRATION" and features a "Student Registration Form". The form fields are as follows:

| Field Label | Placeholder Text |
|-------------------|---------------------------------------|
| Full Name | Enter Your Full Name |
| Enrollment Number | Enter your registration ID |
| Semester (1-8) | Enter the Semester you're studying in |
| Email | Enter E-mail ID |
| Password | Create a password |
| Gender | Select Gender |
| Branch | Select Branch |
| Hostel Name | Select Hostel |
| HS/OS | Select State |

Below the form fields, there is a checkbox labeled "Your Enrollment ID will act as your USER ID" and a pink "Register" button.

3. User Login page

The screenshot shows a web browser window with the URL `192.168.56.1:8000/home.html`. The page title is "HOSTEL MANAGEMENT SYSTEM PORTAL". On the left, a sidebar menu contains "Home", "ADMIN LOGIN", "USER LOGIN" (which is highlighted), and "USER REGISTRATION". The main content area is titled "USER LOGIN" and features a login form. The form includes a logo of a building inside a circular frame, followed by input fields for "User ID" and "Password", and a blue "Log In" button.

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