

**Name=** Krish Porwal

**Registration Number=** 231080910

## **SQL Queries to Create and Manipulate the Data for the Logical Schema:**

### **SQL-DDL to create tables and constraints for the Logical Schema designed for my ER Data Model=**

- To Create Database 'SMJV' and start using the selected database=

```
CREATE DATABASE SMJV;  
USE SMJV;
```

- To create table 'hostel\_branch'=

```
CREATE TABLE hostel_branch (  
    hostel_id VARCHAR(255) PRIMARY KEY,  
    hostel_name VARCHAR(255),  
    address VARCHAR(255),  
    number_of_rooms INT,  
    number_of_students INT  
);
```

- To create table 'rooms'=

```
CREATE TABLE rooms (  
    room_number INT PRIMARY KEY,  
    capacity INT,  
    hostel_id VARCHAR(255),  
    FOREIGN KEY (hostel_id) REFERENCES hostel_branch(hostel_id)  
);
```

- To create table 'employees'=

```
CREATE TABLE employees (  

```

```

employee_id VARCHAR(255),
name VARCHAR(255),
gender VARCHAR(10),
phone_number VARCHAR(20),
hostel_id VARCHAR(255),
salary DECIMAL(10, 2),
date_of_join DATE,
date_of_leave DATE,
PRIMARY KEY (employee_id, hostel_id),
FOREIGN KEY (hostel_id) REFERENCES hostel_branch(hostel_id)
);

```

- To create table 'students' =

```

CREATE TABLE students (
    student_id VARCHAR(255),
    name VARCHAR(255),
    address VARCHAR(255),
    age INT,
    course VARCHAR(100),
    student_phone_number VARCHAR(20),
    dependent_phone_number VARCHAR(20),
    date_of_join DATE,
    date_of_leave DATE,
    hostel_id VARCHAR(255),
    PRIMARY KEY (student_id, hostel_id),
    FOREIGN KEY (hostel_id) REFERENCES hostel_branch(hostel_id)
);

```

- To create table 'student\_room\_assignment' =

```

CREATE TABLE student_room_assignment (
    student_id VARCHAR(255),
    hostel_id VARCHAR(255),
    room_number INT,
    FOREIGN KEY (student_id) REFERENCES students(student_id),
    FOREIGN KEY (hostel_id) REFERENCES hostel_branch(hostel_id),
    FOREIGN KEY (room_number) REFERENCES rooms(room_number)
);

```

- To create table 'dependents' =

```
CREATE TABLE dependents (
  student_id VARCHAR(255) PRIMARY KEY,
  dependent_phone_number VARCHAR(20),
  name VARCHAR(50),
  age INT,
  relation VARCHAR(50),
  FOREIGN KEY (student_id) REFERENCES students(student_id)
);
```

- To create table 'fees' =

```
CREATE TABLE fees (
  student_id VARCHAR(255),
  date DATE,
  amount DECIMAL(10, 2),
  paid_till_date DATE(10, 2),
  pending DECIMAL(10, 2),
  mode_of_payment VARCHAR(50),
  PRIMARY KEY (student_id, date),
  FOREIGN KEY (student_id) REFERENCES students(student_id)
);
```

## DML Queries to insert data in each table =

- For table 'hostel\_branch' =

```
INSERT INTO hostel_branch (hostel_id, hostel_name, address, number_of_rooms,
number_of_students)
VALUES
  ("ANB", "SMJV Andheri", "208, Juhu Ln, Juhu Lane, Yadav Nagar, Andheri
West, Mumbai, Maharashtra 400058", 90, 310),
  ("SAB", "SMJV Sandhurst Road", "99/101, Keshavaji Nayak Rd, Chinchbunder,
Mandvi, Mumbai, Maharashtra 400009", 37, 114),
  ("PUB", "SMJV Pune", "844/A SMJV, Agarkar Rd, next to BMCC Road, Deccan
Gymkhana, Pune, Maharashtra 411004", 130, 360);
```

#	hostel_id 🚩	hostel_name	address	number_of_rooms	number_of_students
1	ANB	SMJV Andheri	208, Juhu Ln, Juhu Lane, Yadav Nag...	90	310
2	PUB	SMJV Pune	844/A SMJV, Agarkar Rd, next to BM...	130	360
3	SAB	SMJV Sandhurst Road	99/101, Keshavaji Nayak Rd, Chinch...	37	114

- For table 'employees' =

```

INSERT INTO employees (employee_id, name, gender, phone_number, hostel_id,
salary, date_of_join, date_of_leave)
VALUES
  ("SAB21203653", "VIRENDRA VYAS", "M", "6280350523", "SAB", 600000, "2016-
09-28", "2022-10-05"),
  ("SAB2130214", "HERMANT SINGH", "M", "2963260934", "SAB", 480000, "2017-
05-28", NULL),
  ("SAB2130331", "MOHANLAL PANDEY", "M", "5029951442", "SAB", 360000, "2017-
06-29", NULL),
  ("SAB2130034", "SHAILESH RATHOD", "M", "7904228371", "SAB", 240000, "2014-
03-04", NULL),
  ("SAB21204651", "BAJRANG SALGAR", "M", "4118189938", "SAB", 200000, "2017-
06-17", NULL),
  ("SAB2130468", "YASHWANT RAO", "M", "4427900484", "SAB", 180000, "2013-06-
29", NULL),
  ("SAB2130469", "NILESH PAWAR", "M", "9383311809", "SAB", 180000, "2015-02-
01", "2023-02-10"),
  ("SAB21205468", "SANJU MAHARAJ", "M", "1194292750", "SAB", 280000, "2016-
11-28", NULL);

```

#	employee_id	name	gender	phone_number	hostel_id	salary	date_of_join	date_of_leave
1	SAB21203653	VIRENDRA VYAS	M	6280350523	SAB	600,000.0	2016-09-28	2022-10-05
2	SAB21204651	BAJRANG SALGAR	M	4118189938	SAB	200,000.0	2017-06-17	(NULL)
3	SAB21205468	SANJU MAHARAJ	M	1194292750	SAB	280,000.0	2016-11-28	(NULL)
4	SAB2130034	SHAILESH RATHOD	M	7904228371	SAB	240,000.0	2014-03-04	(NULL)
5	SAB2130214	HERMANT SINGH	M	2963260934	SAB	480,000.0	2017-05-28	(NULL)
6	SAB2130331	MOHANLAL PANDEY	M	5029951442	SAB	360,000.0	2017-06-29	(NULL)
7	SAB2130468	YASHWANT RAO	M	4427900484	SAB	180,000.0	2013-06-29	(NULL)
8	SAB2130469	NILESH PAWAR	M	9383311809	SAB	180,000.0	2015-02-01	2023-02-10

- For table ‘rooms’:

```

INSERT INTO rooms (room_number, capacity, hostel_id)
VALUES
  (1, 0, "SAB"),
  (2, 0, "SAB"),
  (3, 3, "SAB"),
  (4, 4, "SAB"),
  (5, 3, "SAB"),
  (6, 4, "SAB"),
  (7, 4, "SAB"),
  (8, 4, "SAB"),
  (9, 4, "SAB"),
  (10, 4, "SAB"),
  (11, 4, "SAB"),
  (12, 4, "SAB"),
  (13, 3, "SAB"),
  (14, 0, "SAB"),

```

```

(15, 4, "SAB"),
(16, 3, "SAB"),
(17, 4, "SAB"),
(18, 4, "SAB"),
(19, 4, "SAB"),
(20, 4, "SAB"),
(21, 4, "SAB"),
(22, 3, "SAB"),
(23, 3, "SAB"),
(24, 3, "SAB"),
(25, 1, "SAB"),
(26, 0, "SAB"),
(27, 4, "SAB"),
(28, 4, "SAB"),
(29, 4, "SAB"),
(30, 4, "SAB"),
(31, 4, "SAB"),
(32, 4, "SAB"),
(33, 4, "SAB"),
(34, 4, "SAB"),
(35, 4, "SAB"),
(36, 3, "SAB"),
(37, 3, "SAB");

```

#	room_number 🔑	capacity	hostel_id 🔑
1	1	0	SAB
2	2	0	SAB
3	3	3	SAB
4	4	4	SAB
5	5	3	SAB
6	6	4	SAB
7	7	4	SAB
8	8	4	SAB
9	9	4	SAB
10	10	4	SAB
11	11	4	SAB
12	12	4	SAB
13	13	3	SAB
14	14	0	SAB
15	15	4	SAB
16	16	3	SAB
17	17	4	SAB
18	18	4	SAB
19	19	4	SAB
20	20	4	SAB
21	21	4	SAB
22	22	3	SAB
23	23	3	SAB

- For table 'students':

```
INSERT INTO students (student_id, name, address, age, course,
student_phone_number, dependent_phone_number, date_of_join, date_of_leave,
hostel_id)
VALUES
("SAB2300349", "AAGAM AMIT CHHAJED", "INDORE", 18,
"BAF", 5214137572, 9012782755, "2021-10-22", "2026-11-20", "SAB"),
("SAB2300387", "AAGAM NILESH JAIN", "PALI", 19, "BFM", 4574875736,
6416609696, "2023-07-17", "2027-01-12", "SAB"),
("SAB2300366", "AYUSH SANDEEP LUNIA", "PALI", 19, "BBI", 5183387145,
8231412084, "2022-01-07", "2024-01-10", "SAB"),
("SAB2300348", "ABHISHEK SACHIN GANDHI", "SHAHNUR", 19,
"BAF", 4538600955, 2681111293, "2022-09-16", "2024-09-25", "SAB"),
("SAB22203051", "AKSHAT RANJIT JAIN", "KOLHAPUR", 20,
"BBI", 1276512618, 1389217821, "2023-01-21", "2024-07-26", "SAB"),
("SAB22203012", "AKSHAT JAYVANT JAIN", "JODHPUR", 19,
"BTECH", 7931532782, 6341978051, "2023-01-08", "2026-12-18", "SAB"),
("SAB22203039", "AKSHAT MOHAN GANDHI", "MALEGAON", 20,
"BAF", 6710939167, 3133947519, "2022-11-07", "2023-12-24", "SAB"),
("SAB2300386", "AKSHAT MUKESH DOSHI", "UDAIPUR", 19, "BVOC",
8193739921, 4053719927, "2022-01-22", "2025-07-29", "SAB"),
("SAB2300395", "AKSHAT VINOD LUNIA", "BHIWANDI", 20,
"BBA", 2307327025, 5907732785, "2022-08-12", "2025-12-08", "SAB"),
("SAB2300364", "ARIHANT MAHENDRA KOTACHA", "NAGPUR", 20, "BCOM",
9141422674, 6104390242, "2022-08-07", "2023-11-29", "SAB"),
("SAB22203077", "ARYAN VISHAL KOTHARI", "SURAT", 18, "COMMERCE",
1154568601, 2132628100, "2022-08-11", "2024-09-25", "SAB"),
("SAB2300398", "ATHARVA ASHISH SISODIYA", "VALSAD", 20,
"BAF", 8632351729, 9238034527, "2021-08-21", "2027-03-10", "SAB"),
("SAB22203105", "AVI AMIT SHAH", "VALSAD", 19, "BBI", 8164597866,
3391025788, "2021-08-22", "2025-02-18", "SAB"),
("SAB2300361", "AYUSH VIJAYKUMAR JAIN", "BANGALORE", 20,
"BFM", 4344275441, 2087073965, "2021-09-11", "2026-05-30", "SAB"),
("SAB22203049", "AYUSH JAYESH JAIN", "JODHPUR", 20,
"CA", 6238186246, 6574603747, "2023-04-12", "2026-12-15", "SAB"),
("SAB2300390", "CHAITYA VIKAS JAIN", "MALEGAON", 17, "COMMERCE",
1111439276, 2808025547, "2022-05-31", "2025-03-03", "SAB"),
("SAB22203026", "CHAYAN ANIL JAIN", "BHIWANDI", 19, "BBA", 2775598877,
9546792927, "2022-02-25", "2025-04-07", "SAB"),
("SAB2300001", "DAKSH DINESHKUMAR JAIN", "JALGAON", 21, "BCOM",
2499992151, 6960197174, "2022-02-10", "2024-08-27", "SAB"),
("PUB22202070", "DAKSH MANOJKUMAR JAIN", "RATLAM", 20,
"CFA", 1981284522, 6234025566, "2022-11-21", "2023-08-09", "SAB"),
("SAB2300354", "DAKSH PINKESH JAIN", "CHENNAI", 19,
"BBI", 5871998241, 1369227868, "2022-10-09", "2025-08-03", "SAB"),
("SAB22203061", "DAKSH VIKAS SISODIYA", "INDORE", 20,
"BFM", 4094062348, 5878974355, "2021-12-20", "2023-07-15", "SAB"),
```

("SAB22203106", "DAMAN AMIT OSWAL", "BIJAPUR", 21, "BAF", 8570522394, 3643482237, "2021-07-14", "2024-02-27", "SAB"),  
("SAB2300378", "DARSHAN AJIT RAIGANDHI", "MALEGAON", 20, "BTECH", 3929811878, 1453109832, "2023-03-27", "2023-08-20", "SAB"),  
("SAB22203036", "DEEPAK INDRAKUMAR JAIN", "MALKAPUR", 20, "BAF", 9919782858, 1667870091, "2022-04-26", "2023-11-20", "SAB"),  
("SAB2300397", "DEV HASMUKH KOTHARI", "PUNE", 20, "BFM", 9066545522, 8908939893, "2022-07-24", "2025-04-15", "SAB"),  
("SAB2300359", "DEV SANCHINBHAI BAGADIYA", "ERODE", 21, "BBI", 6506499947, 1311979242, "2021-07-30", "2026-09-24", "SAB"),  
("SAB2300369", "DEVAM RAJESH OSWAL", "BIJAPUR", 19, "BCOM", 7152531779, 2571922077, "2022-02-07", "2024-07-17", "SAB"),  
("SAB2300002", "DHARMYA BHAVESH SHAH", "BHAVNAGAR", 19, "MBATECH", 5243031557, 9473565928, "2023-07-06", "2026-08-23", "SAB"),  
("SAB22203091", "DHRUV NARESH BHOGAR", "NASHIK", 20, "BBI", 8489360668, 5960139275, "2022-09-28", "2024-01-19", "SAB"),  
("SAB22203015", "DISHANK PRAVIN HARAN", "JAIPUR", 20, "BMM", 4623178280, 7560370773, "2022-01-21", "2027-05-22", "SAB"),  
("SAB2300381", "DIVYA RAJENDRA BAFNA", "AMRAVATI", 20, "BFM", 5425738888, 8553577765, "2023-04-27", "2027-04-09", "SAB"),  
("SAB22203048", "DIYANSH NARENDRA JAIN", "AKOLA", 17, "BAF", 6729338054, 8093033924, "2023-03-25", "2025-04-25", "SAB"),  
("SAB2300373", "GARVIT TAKDEER NAKARIYA", "ROHA", 19, "BMS", 3970765481, 5278351802, "2023-02-17", "2025-08-04", "SAB"),  
("SAB2300344", "GAURAV NARENDRA JAIN", "NAGOTNA", 20, "BTECH", 1915500075, 3833978329, "2021-12-17", "2025-08-02", "SAB"),  
("SAB22203060", "GAUTAM DEEPAK BAFNA", "RAIPUR", 20, "BAF", 3303131870, 6424336450, "2022-10-22", "2024-01-01", "SAB"),  
("SAB22203084", "HARDIK SHAILESH JAIN", "PATNA", 20, "BBA", 8508636026, 8981684548, "2022-04-15", "2023-09-01", "SAB"),  
("SAB22203052", "HARSH DIVESH PORWAL", "PALI", 16, "BCOM", 2205556695, 8982663671, "2023-01-17", "2026-11-05", "SAB"),  
("SAB22203053", "HARSH NARESHKUMAR DAGA", "JODHPUR", 20, "CFA", 2203312407, 8651543387, "2022-12-11", "2024-03-03", "SAB"),  
("SAB2300360", "HARSH RAKESH JAIN", "KHANDALA", 20, "BAF", 2420952656, 1666013254, "2023-01-31", "2026-12-17", "SAB"),  
("SAB22203095", "HARSH SAGAR DOSHI", "NASHIK", 20, "BFM", 2675411994, 2439787105, "2022-06-15", "2024-06-04", "SAB"),  
("SAB2300362", "HARSHAL VINODKUMAR RATHORE", "RATLAM", 20, "BBI", 7944853758, 6679801461, "2023-02-19", "2024-11-11", "SAB"),  
("SAB22203085", "HARSHIT ROHIT JAIN", "SURAT", 21, "BBA", 8428360759, 7336869801, "2022-08-14", "2026-09-16", "SAB"),  
("SAB2300351", "HARSHIT SURESHKUMAR SHAH", "BHAVNAGAR", 20, "BMM", 3309443524, 2041710061, "2022-12-27", "2023-10-15", "SAB"),  
("SAB2300370", "HEET MUKESH MODI", "AHMEDABAD", 19, "BFM", 4310200327, 6225178947, "2022-09-17", "2024-04-15", "SAB"),  
("SAB22203078", "HEMANK MAHIPAL BAFNA", "RAIPUR", 20, "BMS", 3537405566, 3970521482, "2021-09-06", "2025-10-17", "SAB"),

("SAB22203045", "ISH DEEPAK JAIN", "CH. SAMBHAJINAGAR", 17, "BCOM", 3938467381, 3539824441, "2022-08-07", "2026-01-31", "SAB"),  
("SAB22203094", "JAINAM AMIT GOLECHA", "RAIPUR", 18, "COMMERCE", 5728541625, 8201367388, "2023-03-26", "2024-08-17", "SAB"),  
("SAB2300377", "JAINAM MANOJKUMAR RUPDA", "PUNE", 20, "BFM", 6457812260, 7856489554, "2023-07-11", "2025-01-14", "SAB"),  
("SAB2300367", "JAY SANDEEP JAIN", "INDORE", 20, "BAF", 2080008323, 8264583583, "2022-04-02", "2025-06-11", "SAB"),  
("SAB2300332", "JEETH AJITH GULECHA", "CHENNAI", 19, "BBA", 4210046783, 2922091181, "2022-02-08", "2024-02-23", "SAB"),  
("SAB22203017", "KAVYA NARENDRA JAIN", "AKOLA", 18, "BBA", 1106043586, 2577958071, "2023-03-06", "2025-10-15", "SAB"),  
("SAB22203040", "KETAN ANAND CHORDIYA", "CH. SAMBHAJINAGAR", 20, "BCOM", 2903672044, 2307785771, "2021-12-26", "2024-12-02", "SAB"),  
("SAB2300333", "KEWAL PANKAJ BARBOTA", "OOTY", 18, "BBA", 3581499213, 9836651308, "2023-03-06", "2026-04-28", "SAB"),  
("SAB2300374", "KITIK MAHENDRA MEHTA", "NASHIK", 19, "BBA", 2531504026, 8950394555, "2022-02-07", "2026-09-01", "SAB"),  
("SAB22203046", "KRISH AMIT SHAH", "KOPARGAON", 20, "BTECH", 6819801811, 9809473646, "2023-04-19", "2026-12-27", "SAB"),  
("SAB2300368", "KRISH BHARAT PORWAL", "KOPARGAON", 18, "BTECH", 5867489327, 1990889604, "2023-08-31", "2026-07-10", "SAB"),  
("SAB2300345", "KRIYANG MUKESH JAIN", "VAPI", 19, "BBA", 9464299359, 2759724326, "2022-11-09", "2023-12-09", "SAB"),  
("SAB2300331", "KUNAL JAYANTI KANKARIYA", "SURAT", 20, "BSC", 3634625152, 6050892207, "2022-03-03", "2024-06-02", "SAB"),  
("SAB22203083", "KUSHAL PAVANKUMAR SANKLECHA", "BHIWANDI", 20, "BCA", 1992081717, 4551608999, "2022-11-08", "2026-07-01", "SAB"),  
("SAB2300376", "LAVESH SANTOSH JAIN", "ROHA", 18, "CA", 3314594411, 1857384799, "2022-08-17", "2023-08-23", "SAB"),  
("SAB22203004", "MANAS RAMESHKUMAR SANKLECHA", "BHIWANDI", 20, "CFA", 8020778628, 4564065509, "2022-10-22", "2024-01-15", "SAB"),  
("SAB22203016", "MANTHAN RUPESH JAIN", "NAGOTNA", 17, "BCA", 1387694805, 6170934569, "2023-05-28", "2026-11-08", "SAB"),  
("SAB2300357", "MAYAN AMITKUMAR JAIN", "ROHA", 17, "BCA", 6344586898, 4213320442, "2022-01-18", "2027-02-21", "SAB"),  
("SAB2300350", "MAYUR KRITIKUMAR JAIN", "KARJAT", 27, "LLB", 5713435079, 7958204319, "2022-08-19", "2025-10-06", "SAB"),  
("SAB2300365", "MEHUL MAHAVIR JAIN", "CHENNAI", 19, "BAF", 7457879664, 5902517758, "2023-05-24", "2026-02-03", "SAB"),  
("SAB2300346", "MOHAK ANANDRAJ KANKARIYA", "BHIWANDI", 20, "BFM", 9120079249, 8430545337, "2021-08-13", "2026-06-27", "SAB"),  
("SAB22203002", "MOHIT SANJAY BOTRA", "NAGPUR", 19, "BFM", 6794237750, 5710208104, "2022-09-18", "2026-04-13", "SAB"),  
("SAB2300371", "MOKSH HEMANT JAIN", "ROHA", 20, "BBA", 5565661498, 2641172357, "2021-07-20", "2024-12-03", "SAB"),  
("SAB22203003", "NAMAN MANOJKUMAR JAIN", "CHENNAI", 19, "BMM", 6376970462, 9037417829, "2023-03-03", "2024-07-02", "SAB"),



("SAB2300342", "NAMAN VINOD JAIN", "BANGALORE", 20, "BAF", 1828472037, 5709825523, "2022-07-20", "2024-07-06", "SAB"),  
("SAB22203093", "NEIL BHAVESH JAIN", "ROHA", 16, "BBI", 9770452653, 9370052176, "2022-02-23", "2027-05-12", "SAB"),  
("SAB2300003", "NITYAM DILIP JAIN", "ROHA", 20, "BBI", 5468347320, 7525024848, "2023-03-31", "2023-05-16", "SAB"),  
("SAB22203033", "OM PAVANKUMAR SHETIYA", "OOTY", 20, "BBI", 1508628640, 8028056189, "2023-06-25", "2026-07-14", "SAB"),  
("SAB2300392", "PARAM SAGAR SHAH", "BHIWANDI", 20, "BCOM", 3718666249, 1034253913, "2021-10-17", "2025-04-30", "SAB"),  
("SAB22203028", "PARTH VISHALKUMAR SHAH", "SANGLI", 17, "BBA", 5081292842, 9524134213, "2022-03-17", "2027-04-16", "SAB"),  
("SAB2300393", "PEYUSH KAMLESH BHANSOLI", "BHAVNAGAR", 19, "CA", 7571081647, 6772529141, "2023-01-31", "2026-11-22", "SAB"),  
("SAB2300382", "PRAJWAL PRADEEP JAIN", "RAIPUR", 20, "BAF", 7307082442, 6635283669, "2023-01-05", "2027-05-06", "SAB"),  
("SAB2300372", "PRANAV PRAVEEN JAIN", "JODHPUR", 20, "BAF", 3405140843, 1231134110, "2023-06-18", "2025-12-07", "SAB"),  
("SAB22203102", "PRASHAM ANIL JAIN", "THANE", 17, "COMMERCE", 9644440807, 4065413693, "2022-10-03", "2023-09-15", "SAB"),  
("SAB2300329", "PRATHAM JITENDRA JAIN", "ICHALKARANJI", 21, "BBA", 5202729735, 1617384801, "2023-02-18", "2024-10-24", "SAB"),  
("SAB22203025", "RAJ YOGESH SHAH", "PUNE", 22, "BCOM", 2626140250, 1302589357, "2022-09-11", "2025-07-03", "SAB"),  
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("SAB22203068", "YASH MAHENDRA JAIN", "ROHA", 21, "BCA", 4305609492,  
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8677255591, 7446380546, "2022-06-17", "2025-07-14", "SAB"),  
("SAB22203073", "YUG MAHESH JAIN", "ROHA", 17, "BTECH", 1458062309,  
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("SAB2300394", "YUG VIKRAM JAIN", "MALEGAON", 18, "COMMERCE",  
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1	PUB21100420	YASH VIJAY KHATOR	BHIWANDI	23	BCOM	8677255591	7446380546	2022-06-17	2025-07-14
2	PUB22202070	DAKSH MANOJKUMAR JAIN	RATLAM	20	CFA	1981284522	6234025566	2022-11-21	2023-08-09
3	SAB22203002	MOHIT SANJAY BOTRA	NAGPUR	19	BFM	6794237750	5710208104	2022-09-18	2026-04-13
4	SAB22203003	NAMAN MANOJKUMAR JAIN	CHENNAI	19	BMM	6376970462	9037417829	2023-03-03	2024-07-02
5	SAB22203004	MANAS RAMESHKUMAR SANKLECHA	BHIWANDI	20	CFA	8020778628	4564065509	2022-10-22	2024-01-15
6	SAB22203012	AKSHAT JAYVANT JAIN	JODHPUR	19	BTECH	7931532782	6341978051	2023-01-08	2026-12-18
7	SAB22203015	DISHANK PRAVIN HARAN	JAIPUR	20	BMM	4623178280	7560370773	2022-01-21	2027-05-22
8	SAB22203016	MANTHAN RUPESH JAIN	NAGOTNA	17	BCA	1387694805	6170934569	2023-05-28	2026-11-08
9	SAB22203017	KAVYA NARENDRA JAIN	AKOLA	18	BBA	1106043586	2577958071	2023-03-06	2025-10-15
10	SAB22203020	VARUN MOHANLAL JAIN	OOTY	20	BAF	4155038378	9472019070	2023-02-09	2026-05-09
11	SAB22203025	RAJ YOGESH SHAH	PUNE	22	BCOM	2626140250	1302589357	2022-09-11	2025-07-03
12	SAB22203026	CHAYAN ANIL JAIN	BHIWANDI	19	BBA	2775598877	9546792927	2022-02-25	2025-04-07
13	SAB22203028	PARTH VISHALKUMAR SHAH	SANGLI	17	BBA	5081292842	9524134213	2022-03-17	2027-04-16
14	SAB22203033	OM PAVANKUMAR SHETIYA	OOTY	20	BBI	1508628640	8028056189	2023-06-25	2026-07-14
15	SAB22203036	DEEPAK INDRAKUMAR JAIN	MALKAPUR	20	BAF	9919782858	1667870091	2022-04-26	2023-11-20
16	SAB22203039	AKSHAT MOHAN GANDHI	MALEGAON	20	BAF	6710939167	3133947519	2022-11-07	2023-12-24
17	SAB22203040	KETAN ANAND CHORDIYA	CH. SAMBAHAJINAGAR	20	BCOM	2903672044	2307785771	2021-12-26	2024-12-02
18	SAB22203045	ISH DEEPAK JAIN	CH. SAMBAHAJINAGAR	17	BCOM	3938467381	3539824441	2022-08-07	2026-01-31
19	SAB22203046	KRISH AMIT SHAH	KOPARGAON	20	BTECH	6819801811	9809473646	2023-04-19	2026-12-27
20	SAB22203048	DIYANSH NARENDRA JAIN	AKOLA	17	BAF	6729338054	8093033924	2023-03-25	2025-04-25
21	SAB22203049	AYUSH JAYESH JAIN	JODHPUR	20	CA	6238186246	6574603747	2023-04-12	2026-12-15
22	SAB22203051	AKSHAT RANJIT JAIN	KOLHAPUR	20	BBI	1276512618	1389217821	2023-01-21	2024-07-26

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4	SAB2300348	SAB	6
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6	SAB22203012	SAB	13
7	SAB22203039	SAB	19
8	SAB2300386	SAB	5
9	SAB2300395	SAB	24
10	SAB2300364	SAB	21
11	SAB22203077	SAB	10
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14	SAB2300361	SAB	4

- For table 'dependents' =

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VALUES
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("SAB22203105", 3391025788, "AMIT SHAH", 42, "FATHER"),
("SAB2300361", 2087073965, "VIJAYKUMAR JAIN", 58, "FATHER"),
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("SAB2300390", 2808025547, "VIKAS JAIN", 39, "FATHER"),
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  ("SAB2300355", 3086170460, "RAHUL JAIN", 40, "FATHER"),
  ("SAB2300343", 6634209716, "ASHISH BORA", 45, "FATHER"),
  ("SAB22203054", 5763155545, "SOHANLAL JAIN", 42, "FATHER"),
  ("SAB22203079", 3613517248, "RUPESH JAIN", 46, "FATHER"),
  ("SAB22203103", 6077298397, "ANIL BAFNA", 65, "FATHER"),
  ("SAB22203075", 4584772184, "SUNIL JAIN", 58, "FATHER"),
  ("SAB2300384", 4979482154, "NILESH KOTHARI", 51, "FATHER"),
  ("SAB22203076", 9544628402, "ANUP JAIN", 59, "FATHER"),
  ("SAB2300391", 1599101493, "RAKESH JAIN", 43, "FATHER"),
  ("SAB22203067", 8147677721, "AMARKUMAR JAIN", 37, "FATHER"),
  ("SAB2300353", 8395683088, "AMIT JAIN", 51, "FATHER"),
  ("SAB22203096", 6870189460, "PRITAM BORA", 50, "FATHER"),
  ("SAB22203108", 7044691130, "ARUN JAIN", 44, "FATHER"),
  ("SAB2300356", 5593598964, "DHARMVEER NAHATA", 49, "FATHER"),
  ("SAB2300363", 5075591975, "MAYUR JAIN", 65, "FATHER"),
  ("SAB22203064", 9434709811, "ANUP SHAH", 40, "FATHER"),
  ("SAB2300375", 2634956923, "JITENDRA BORA", 39, "FATHER"),
  ("SAB2300389", 2509481341, "SUNILKUMAR LUNIA", 57, "FATHER"),
  ("SAB2300352", 6281989433, "PRAVIN GANDHI", 57, "FATHER"),
  ("SAB22203072", 7193576484, "MUKESHKUMAR JAIN", 37, "FATHER"),
  ("SAB22203066", 9706935826, "GYAANCHAND JAIN", 41, "FATHER"),
  ("SAB22203020", 9472019070, "MOHANLAL JAIN", 61, "FATHER"),
  ("SAB22203071", 3878013470, "SANDEEP JAIN", 52, "FATHER"),
  ("SAB2300399", 5945575800, "JAYDEEP JAIN", 56, "FATHER"),
  ("SAB22203074", 4399242085, "GAUTAM JAIN", 42, "FATHER"),
  ("SAB2300347", 3528214555, "VINAYKUMAR PITALIYA", 43, "FATHER"),
  ("SAB22203068", 4778228323, "MAHENDRA JAIN", 40, "FATHER"),
  ("PUB21100420", 7446380546, "VIJAY KHATOR", 59, "FATHER"),
  ("SAB22203073", 9795790420, "MAHESH JAIN", 65, "FATHER"),
  ("SAB2300394", 5750066324, "VIKRAM JAIN", 49, "FATHER");
```

#	student_id	dependent_phone_number	name	age	relation
1	PUB21100420	7446380546	YASH VIJAY KHATORVIJAY KHA...	59	FATHER
2	PUB22202070	6234025566	DAKSH MANOJKUMAR JAINMAN...	35	FATHER
3	SAB22203002	5710208104	MOHIT SANJAY BOTRASANJAY B...	49	FATHER
4	SAB22203003	9037417829	NAMAN MANOJKUMAR JAINMAN...	35	FATHER
5	SAB22203004	4564065509	MANAS RAMESHKUMAR SANKLECH...	38	FATHER
6	SAB22203012	6341978051	AKSHAT JAYVANT JAINJAYVANT...	49	FATHER
7	SAB22203015	7560370773	DISHANK PRAVIN HARANPRAVIN...	44	FATHER
8	SAB22203016	6170934569	MANTHAN RUPESH JAINRUPESH ...	41	FATHER
9	SAB22203017	2577958071	KAVYA NARENDRA JAINNAREND...	43	FATHER
10	SAB22203020	9472019070	VARUN MOHANLAL JAINMOHANL...	61	FATHER
11	SAB22203025	1302589357	RAJ YOGESH SHAHYOGESH SHAH	47	FATHER
12	SAB22203026	9546792927	CHAYAN ANIL JAINANIL JAIN	63	FATHER
13	SAB22203028	9524134213	PARTH VISHALKUMAR SHAHVISH...	62	FATHER
14	SAB22203033	8028056189	OM PAVANKUMAR SHETIYAPAVA...	50	FATHER

## • For table 'fees' =

```
INSERT INTO fees (student_id, date, amount, paid_till_date, pending, mode_of_payment)
VALUES
  ("SAB2300349", "2024-01-22", 80000, "2024-01-22", 0, "NFT"),
  ("SAB2300387", "2024-01-23", 80000, "2024-01-23", 0, "NFT"),
  ("SAB2300366", "2023-12-23", 80000, "2023-12-23", 0, "NFT");
```



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("SAB2300394", "2024-01-20", 80000, "2024-01-20", 0, "NFT");
```

#	student_id	date	amount	paid_till_date	pending	mode_of_payment
1	PUB21100420	2023-12-26	80,000	2023-12-26	0.0	NFT
2	PUB22202070	2024-01-29	80,000	2024-01-29	0.0	NFT
3	SAB22203002	2023-12-26	80,000	2023-12-26	0.0	NFT
4	SAB22203003	2024-01-06	80,000	2024-01-06	0.0	NFT
5	SAB22203004	2023-12-29	80,000	2023-12-29	0.0	NFT
6	SAB22203012	2024-01-15	80,000	2024-01-15	0.0	NFT
7	SAB22203015	2023-12-21	80,000	2023-12-21	0.0	NFT
8	SAB22203016	2024-01-09	80,000	2024-01-09	0.0	NFT
9	SAB22203017	2024-01-06	80,000	2024-01-06	0.0	NFT
10	SAB22203020	2024-01-26	80,000	2024-01-26	0.0	NFT
11	SAB22203025	2023-12-23	80,000	2023-12-23	0.0	NFT
12	SAB22203026	2024-01-19	80,000	2024-01-19	0.0	NFT
13	SAB22203028	2024-01-01	80,000	2024-01-01	0.0	NFT
14	SAB22203033	2024-01-24	80,000	2024-01-24	0.0	NFT
15	SAB22203035	2024-01-12	80,000	2024-01-12	0.0	NFT

## DML Queries to update data=

### 1. Increase the capacity of a room=

```
UPDATE Rooms
SET capacity = capacity + 5
WHERE room_number = '21';
20 UPDATE Rooms SET capacity = capacity + 5 WHERE room_number = '21';
21 /* Affected rows: 1 Found rows: 0 Warnings: 0 Duration for 1 query: 0.016 sec. */
```

### 2. Change the phone number of an employee=

```
UPDATE Employees
SET phone_number = '8975186346'
WHERE employee_id = 'SAB21303653' AND hostel_id = 'SAB';
22 UPDATE Employees SET phone_number = '8975186346' WHERE employee_id = 'SAB21303653' AND hostel_id = 'SAB';
23 /* Affected rows: 0 Found rows: 0 Warnings: 0 Duration for 1 query: 0.000 sec. */
```

### 3. Modify the date of join of an employee=

```
UPDATE Employees
SET date_of_join = '2024-13-02'
WHERE employee_id = 'SAB21303653' AND hostel_id = 'SAB';
24 UPDATE Employees SET date_of_join = '2024-13-02' WHERE employee_id = 'SAB21303653' AND hostel_id = 'SAB';
25 /* Affected rows: 0 Found rows: 0 Warnings: 0 Duration for 1 query: 0.000 sec. */
```

### 4. Update the dependent's age=

```
UPDATE Dependents
SET age = '61'
WHERE student_id = 'SAB2300368';
26 UPDATE Dependents SET age = '61' WHERE student_id = 'SAB2300368';
27 /* Affected rows: 1 Found rows: 0 Warnings: 0 Duration for 1 query: 0.015 sec. */
```

## 5. Update the mode of payment for fees:=

```
UPDATE Fees
SET mode_of_payment = 'cash'
WHERE student_id = 'SAB2300333' AND date = '2023-12-27';
33 UPDATE Fees SET mode_of_payment = 'cash' WHERE student_id = 'SAB2300333' AND date = '2023-12-27';
34 /* Affected rows: 1 Found rows: 0 Warnings: 0 Duration for 1 query: 0.000 sec. */
```

## SQL-DML exploring Complex queries, Aggregate functions like Avg, group, sort etc to manipulate data for the ER Data Model=


### 1. Calculate the average salary of employees in each hostel=

```
SELECT hostel_id, AVG(salary) AS avg_salary
FROM Employees
GROUP BY hostel_id;
```

Employees (1r × 2c)		
#	hostel_id	avg_salary
1	SAB	315,000.0

### 2. Count the number of students in each room=

```
SELECT r.room_number, COUNT(sra.student_id) AS num_students
FROM Rooms r
LEFT JOIN Student_room_assignment sra ON r.room_number = sra.room_number
GROUP BY r.room_number;
```

Rooms (37r × 2c)			
#	room_number		num_students
1		1	0
2		2	0
3		3	3
4		4	4
5		5	2
6		6	4
7		7	4
8		8	4
9		9	4
10		10	4
11		11	4
12		12	4
13		13	3
14		14	1
15		15	3
16		16	3
17		17	4
18		18	4
19		19	3
20		20	4
21		21	4
22		22	3
23		23	3

### 3. Find the total pending fees for each hostel=

```
SELECT s.hostel_id, SUM(f.pending) AS total_pending_fees
FROM Students s
INNER JOIN Fees f ON s.student_id = f.student_id
GROUP BY s.hostel_id;
```

Students (1r × 2c)		
#	hostel_id	total_pending_fees
1	SAB	0.0

4. List the employees who joined before a certain date and sort them by their salary=

```
SELECT *
FROM Employees
WHERE date_of_join < '2024-01-01'
ORDER BY salary DESC;
```

Employees (8r × 8c)									
#	employee_id	name	gender	phone_number	hostel_id	salary	date_of_join	date_of_leave	
1	SAB21203653	VIRENDRA VYAS	M	6280350523	SAB	600,000.0	2016-09-28	2022-10-05	
2	SAB2130214	HERMANT SINGH	M	2963260934	SAB	480,000.0	2017-05-28	(NULL)	
3	SAB2130331	MOHANLAL PANDEY	M	5029951442	SAB	360,000.0	2017-06-29	(NULL)	
4	SAB21205468	SANJU MAHARAJ	M	1194292750	SAB	280,000.0	2016-11-28	(NULL)	
5	SAB2130034	SHAILESH RATHOD	M	7904228371	SAB	240,000.0	2014-03-04	(NULL)	
6	SAB21204651	BAJRANG SALGAR	M	4118189938	SAB	200,000.0	2017-06-17	(NULL)	
7	SAB2130468	YASHWANT RAO	M	4427900484	SAB	180,000.0	2013-06-29	(NULL)	
8	SAB2130469	NILESH PAWAR	M	9383311809	SAB	180,000.0	2015-02-01	2023-02-10	

5. Find the average age of dependents for each student=

```
SELECT s.student_id, AVG(d.age) AS avg_dependent_age
FROM Students s
LEFT JOIN Dependents d ON s.student_id = d.student_id
GROUP BY s.student_id;
```

Students (113r × 2c)		
#	student_id	avg_dependent_age
1	PUB21100420	59.0
2	PUB22202070	35.0
3	SAB22203002	49.0
4	SAB22203003	35.0
5	SAB22203004	38.0
6	SAB22203012	49.0
7	SAB22203015	44.0
8	SAB22203016	41.0
9	SAB22203017	43.0
10	SAB22203020	61.0
11	SAB22203025	47.0
12	SAB22203026	63.0
13	SAB22203028	62.0
14	SAB22203033	50.0
15	SAB22203036	60.0
16	SAB22203039	63.0
17	SAB22203040	60.0
18	SAB22203045	43.0
19	SAB22203046	53.0
20	SAB22203048	51.0

**6. Count the number of rooms in each hostel and sort them by the number of rooms in descending order=**

```
SELECT hostel_id, COUNT(room_number) AS num_rooms
FROM Rooms
GROUP BY hostel_id
ORDER BY num_rooms DESC;
```

Rooms (1r × 2c)		
#	hostel_id	num_rooms
1	SAB	37

**7. Find the total amount of fees paid by each student and sort them in descending order=**

```
SELECT student_id, SUM(amount) AS total_fees_paid
FROM Fees
GROUP BY student_id
ORDER BY total_fees_paid DESC;
```

Fees (113r × 2c)		
#	student_id	total_fees_paid
1	SAB2300343	80,000
2	SAB22203036	80,000
3	SAB2300359	80,000
4	SAB22203068	80,000
5	SAB2300375	80,000
6	SAB22203095	80,000
7	SAB2300397	80,000
8	SAB2300398	80,000
9	SAB2300344	80,000
10	SAB22203039	80,000
11	SAB2300360	80,000
12	SAB22203071	80,000
13	SAB2300376	80,000
14	SAB22203096	80,000
15	SAB22203102	80,000
16	SAB2300399	80,000
17	PUB21100420	80,000
18	SAB2300345	80,000
19	SAB22203040	80,000
20	SAB2300361	80,000
...	...	...

## 8. Find the youngest student in each hostel=

```
SELECT hostel_id, MIN(age) AS min_age
FROM Students
GROUP BY hostel_id;
```

Students (1r × 2c)		
#	hostel_id	min_age
1	SAB	16

## 9. List the students who have not paid any fees yet=

```
SELECT s.student_id, s.name
FROM Students s
LEFT JOIN Fees f ON s.student_id = f.student_id
WHERE f.student_id IS NULL;
```

Students (0r × 2c)		
#	student_id	name

## 10. List all rooms along with the number of students assigned to each room and the hostel branch they belong to=

```
SELECT r.room_number, COUNT(sra.student_id) AS num_students_assigned,
h.hostel_name AS hostel_branch
FROM Rooms r
LEFT JOIN Student_room_assignment sra ON r.room_number = sra.room_number
JOIN Hostel_Branch h ON r.hostel_id = h.hostel_id
GROUP BY r.room_number, h.hostel_name;
```

Rooms (37r × 3c)			
#	room_number	num_students_assigned	hostel_branch
1	1	0	SMJV Sandhurst Road
2	2	0	SMJV Sandhurst Road
3	3	3	SMJV Sandhurst Road
4	4	4	SMJV Sandhurst Road
5	5	2	SMJV Sandhurst Road
6	6	4	SMJV Sandhurst Road
7	7	4	SMJV Sandhurst Road
8	8	4	SMJV Sandhurst Road
9	9	4	SMJV Sandhurst Road
10	10	4	SMJV Sandhurst Road
11	11	4	SMJV Sandhurst Road
12	12	4	SMJV Sandhurst Road
13	13	2	SMJV Sandhurst Road



## SQL-DML exploring Nested queries, Join Queries, along with the complex queries, Aggregate functions etc to manipulate data for the ER Data Model=

### 1. List all students along with their hostel details=

```
SELECT s.*, hb.hostel_name AS hostel_name, hb.address AS hostel_address
FROM Students s
JOIN Hostel_Branch hb ON s.hostel_id = hb.hostel_id;
```

#	student_id	name	address	age	course	student_phone_number	dependent_phone_number	date_of_join	date_of_leave	hos
1	PUB21100420	YASH VIJAY KHATOR	BHIWANDI	23	BCOM	8677255591	7446380546	2022-06-17	2025-07-14	
2	PUB22202070	DAKSH MANOJKUMAR JAIN	RATLAM	20	CFA	1981284522	6234025566	2022-11-21	2023-08-09	
3	SAB22203002	MOHIT SANJAY BOTRA	NAGPUR	19	BFM	6794237750	5710208104	2022-09-18	2026-04-13	
4	SAB22203003	NAMAN MANOJKUMAR JAIN	CHENNAI	19	BMM	6376970462	9037417829	2023-03-03	2024-07-02	
5	SAB22203004	MANAS RAMESHKUMAR SANKLECHA	BHIWANDI	20	CFA	8020778628	4564065509	2022-10-22	2024-01-15	
6	SAB22203012	AKSHAT JAYVANT JAIN	JODHPUR	19	BTECH	7931532782	6341978051	2023-01-08	2026-12-18	
7	SAB22203015	DISHANK PRAVIN HARAN	JAIPUR	20	BMM	4623178280	7560370773	2022-01-21	2027-05-22	
8	SAB22203016	MANTHAN RUPESH JAIN	NAGOTNA	17	BCA	1387694805	6170934569	2023-05-28	2026-11-08	
9	SAB22203017	KAVYA NARENDRA JAIN	AKOLA	18	BBA	1106043586	2577958071	2023-03-06	2025-10-15	
10	SAB22203020	VARUN MOHANLAL JAIN	OOTY	20	BAF	4155038378	9472019070	2023-02-09	2026-05-09	
11	SAB22203025	RAJ YOGESH SHAH	PUNE	22	BCOM	2626140250	1302589357	2022-09-11	2025-07-03	
12	SAB22203026	CHAVAN AMIT JAIN	BHIWANDI	19	BBA	7775508077	0546703077	2023-03-25	2025-04-07	

### 2. Find the number of rooms and total capacity for each hostel=

```
SELECT hb.hostel_id, hb.hostel_name, hb.address, COUNT(r.room_number) AS
num_rooms, SUM(r.capacity) AS total_capacity
FROM Hostel_Branch hb
LEFT JOIN Rooms r ON hb.hostel_id = r.hostel_id
GROUP BY hb.hostel_id;
```

#	hostel_id	hostel_name	address	num_rooms	total_capacity
1	ANB	SMJV Andheri	208, Juhu Ln, Juhu Lane, Yadav Nag...	0	(NULL)
2	PUB	SMJV Pune	844/A SMJV, Agarkar Rd, next to BM...	0	(NULL)
3	SAB	SMJV Sandhurst Road	99/101, Keshavaji Nayak Rd, Chinch...	37	125

### 3. List all employees who are currently working and their respective hostels=

```
SELECT e.*, hb.hostel_name AS hostel_name, hb.address AS hostel_address
FROM Employees e
JOIN Hostel_Branch hb ON e.hostel_id = hb.hostel_id
WHERE e.date_of_leave IS NULL;
```

#	employee_id	name	gender	phone_number	hostel_id	salary	date_of_join	date_of_leave	hostel_name	hostel_address
1	SAB21204651	BAJRANG SALGAR	M	4118189938	SAB	200,000.0	2017-06-17	(NULL)	SMJV Sandhurst Road	99/101, Keshavaji Nayak Rd, Chinch...
2	SAB21205468	SANJU MAHARAJ	M	1194292750	SAB	280,000.0	2016-11-28	(NULL)	SMJV Sandhurst Road	99/101, Keshavaji Nayak Rd, Chinch...
3	SAB2130034	SHAILESH RATHOD	M	7904228371	SAB	240,000.0	2014-03-04	(NULL)	SMJV Sandhurst Road	99/101, Keshavaji Nayak Rd, Chinch...
4	SAB2130214	HERMANT SINGH	M	2963260934	SAB	480,000.0	2017-05-28	(NULL)	SMJV Sandhurst Road	99/101, Keshavaji Nayak Rd, Chinch...
5	SAB2130331	MOHANLAL PANDEY	M	5029951442	SAB	360,000.0	2017-06-29	(NULL)	SMJV Sandhurst Road	99/101, Keshavaji Nayak Rd, Chinch...
6	SAB2130468	YASHWANT RAO	M	4427900484	SAB	180,000.0	2013-06-29	(NULL)	SMJV Sandhurst Road	99/101, Keshavaji Nayak Rd, Chinch...

#### 4. Find the students who have dependent(s) and list their dependents=

```
SELECT s.*, d.name AS dependent_name, d.relation
FROM Students s
JOIN Dependents d ON s.student_id = d.student_id;
```

#	student_id	name	address	age	course	student_phone_number	dependent_phone_number	date_of_join	date_of_leave
1	PUB21100420	YASH VIJAY KHATOR	BHIWANDI	23	BCOM	8677255591	7446380546	2022-06-17	2025-07-14
2	PUB22202070	DAKSH MANOJKUMAR JAIN	RATLAM	20	CFA	1981284522	6234025566	2022-11-21	2023-08-09
3	SAB22203002	MOHIT SANJAY BOTRA	NAGPUR	19	BFM	6794237750	5710208104	2022-09-18	2026-04-13
4	SAB22203003	NAMAN MANOJKUMAR JAIN	CHENNAI	19	BMM	6376970462	9037417829	2023-03-03	2024-07-02
5	SAB22203004	MANAS RAMESHKUMAR SANKLECHA	BHIWANDI	20	CFA	8020778628	4564065509	2022-10-22	2024-01-15
6	SAB22203012	AKSHAT JAYVANT JAIN	JODHPUR	19	BTECH	7931532782	6341978051	2023-01-08	2026-12-18
7	SAB22203015	DISHANK PRAVIN HARAN	JAIPUR	20	BMM	4623178280	7560370773	2022-01-21	2027-05-22
8	SAB22203016	MANTHAN RUPESH JAIN	NAGOTNA	17	BCA	1387694805	6170934569	2023-05-28	2026-11-08
9	SAB22203017	KAVYA NARENDRA JAIN	AKOLA	18	BBA	1106043586	2577958071	2023-03-06	2025-10-15
10	SAB22203020	VARUN MOHANLAL JAIN	OOTY	20	BAF	4155038378	9472019070	2023-02-09	2026-05-09
11	SAB22203025	RAJ YOGESH SHAH	PUNE	22	BCOM	2626140250	1302589357	2022-09-11	2025-07-03
12	SAB22203036	CHAVAN ANIL SATISH	BURHANPUR	19	BBA	7775508077	0546303037	2023-03-25	2025-04-07

#### 5. Calculate the total fees paid by male and female students separately=

```
SELECT SUM(f.amount) AS total_fees_paid
FROM Students s
JOIN Fees f ON s.student_id = f.student_id;
```

#	total_fees_paid
1	9,040,000

#### 6. List the rooms with their respective hostel details and the number of students assigned to each room=

```
SELECT hb.hostel_id, hb.hostel_name AS hostel_name, r.room_number,
COUNT(sra.student_id) AS num_students
FROM Hostel_Branch hb
JOIN Rooms r ON hb.hostel_id = r.hostel_id
LEFT JOIN Student_room_assignment sra ON r.room_number = sra.room_number
GROUP BY hb.hostel_id, r.room_number;
```

#	hostel_id	hostel_name	room_number	num_students
1	SAB	SMJV Sandhurst Road	1	0
2	SAB	SMJV Sandhurst Road	2	0
3	SAB	SMJV Sandhurst Road	3	3
4	SAB	SMJV Sandhurst Road	4	4
5	SAB	SMJV Sandhurst Road	5	2
6	SAB	SMJV Sandhurst Road	6	4
7	SAB	SMJV Sandhurst Road	7	4
8	SAB	SMJV Sandhurst Road	8	4
9	SAB	SMJV Sandhurst Road	9	4
10	SAB	SMJV Sandhurst Road	10	4
11	SAB	SMJV Sandhurst Road	11	4
12	SAB	SMJV Sandhurst Road	12	4
13	SAB	SMJV Sandhurst Road	13	2

## 7. Find the average age of students in each hostel=

```
SELECT hb.hostel_id, AVG(s.age) AS avg_age
FROM Hostel_Branch hb
JOIN Students s ON hb.hostel_id = s.hostel_id
GROUP BY hb.hostel_id;
```

Hostel_Branch (1r x 2c)		
#	hostel_id	avg_age
1	SAB	19.5044

## 8. List the students along with the total pending fees for each student=

```
SELECT s.*, SUM(f.pending) AS total_pending_fees
FROM Students s
JOIN Fees f ON s.student_id = f.student_id
GROUP BY s.student_id;
```

Students (113r x 11c)									
#	student_id	name	address	age	course	student_phone_number	dependent_phone_number	date_of_join	date_of_leave
1	PUB21100420	YASH VIJAY KHATOR	BHIWANDI	23	BCOM	8677255591	7446380546	2022-06-17	2025-07-14
2	PUB22202070	DAKSH MANOJKUMAR JAIN	RATLAM	20	CFA	1981284522	6234025566	2022-11-21	2023-08-09
3	SAB22203002	MOHIT SANJAY BOTRA	NAGPUR	19	BFM	6794237750	5710208104	2022-09-18	2026-04-13
4	SAB22203003	NAMAN MANOJKUMAR JAIN	CHENNAI	19	BMM	6376970462	9037417829	2023-03-03	2024-07-02
5	SAB22203004	MANAS RAMESHKUMAR SANKLECHA	BHIWANDI	20	CFA	8020778628	4564065509	2022-10-22	2024-01-15
6	SAB22203012	AKSHAT JAYVANT JAIN	JODHPUR	19	BTECH	7931532782	6341978051	2023-01-08	2026-12-18
7	SAB22203015	DISHANK PRAVIN HARAN	JAIPUR	20	BMM	4623178280	7560370773	2022-01-21	2027-05-22
8	SAB22203016	MANTHAN RUPESH JAIN	NAGOTNA	17	BCA	1387694805	6170934569	2023-05-28	2026-11-08
9	SAB22203017	KAVYA NARENDRA JAIN	AKOLA	18	BBA	1106043586	2577958071	2023-03-06	2025-10-15
10	SAB22203020	VARUN MOHANLAL JAIN	OOTY	20	BAF	4155038378	9472019070	2023-02-09	2026-05-09
11	SAB22203025	RAJ YOGESH SHAH	PUNE	22	BCOM	2626140250	1302589357	2022-09-11	2025-07-03
12	SAB22203036	CHAVAN ANIL TATIM	BURHANPUR	19	BBA	7775508077	8546707077	2023-03-15	2025-04-07

## 9. Find the employee with the highest salary in each hostel=

```
SELECT e.*
FROM Employees e
JOIN (
    SELECT hostel_id, MAX(salary) AS max_salary
    FROM Employees
    GROUP BY hostel_id
) AS max_salary_per_hostel ON e.hostel_id = max_salary_per_hostel.hostel_id
AND e.salary = max_salary_per_hostel.max_salary;
```

Employees (1r x 8c)								
#	employee_id	name	gender	phone_number	hostel_id	salary	date_of_join	date_of_leave
1	SAB21203653	VIRENDRA VYAS	M	6280350523	SAB	600,000.0	2016-09-28	2022-10-05

## 10. List the students who are assigned to a room with a capacity greater than the average room capacity in their hostel=

```

SELECT s.*
FROM Students s
JOIN Student_room_assignment sra ON s.student_id = sra.student_id
JOIN Rooms r ON sra.room_number = r.room_number AND sra.hostel_id =
r.hostel_id
JOIN (
    SELECT hostel_id, AVG(capacity) AS avg_capacity
    FROM Rooms
    GROUP BY hostel_id
) AS avg_capacity_per_hostel ON r.hostel_id =
avg_capacity_per_hostel.hostel_id
WHERE r.capacity > avg_capacity_per_hostel.avg_capacity;

```

#	student_id	name	address	age	course	student_phone_number	dependent_phone_number	date_of_join	date_of_leave	host
1	SAB2300387	AAGAM NILESH JAIN	PALI	19	BFM	4574875736	6416609696	2023-07-17	2027-01-12	
2	SAB2300366	AYUSH SANDEEP LUNIA	PALI	19	BBI	5183387145	8231412084	2022-01-07	2024-01-10	
3	SAB2300348	ABHISHEK SACHIN GANDHI	SHAHUPUR	19	BAF	4538600955	2681111293	2022-09-16	2024-09-25	
4	SAB22203051	AKSHAT RANJIT JAIN	KOLHAPUR	20	BBI	1276512618	1389217821	2023-01-21	2024-07-26	
5	SAB22203039	AKSHAT MOHAN GANDHI	MALEGAON	20	BAF	6710939167	3133947519	2022-11-07	2023-12-24	
6	SAB2300364	ARIHANT MAHENDRA KOTECHE	NAGPUR	20	BCOM	9141422674	6104390242	2022-08-07	2023-11-29	
7	SAB22203077	ARYAN VISHAL KOTHARI	SURAT	18	COMMERCE	1154568601	2132628100	2022-08-11	2024-09-25	
8	SAB22203105	AVI AMIT SHAH	VALSAD	19	BBI	8164597866	3391025788	2021-08-22	2025-02-18	
9	SAB2300361	AYUSH VIJAYKUMAR JAIN	BANGALORE	20	BFM	4344275441	2087073965	2021-09-11	2026-05-30	
10	SAB2300390	CHAITYA VIKAS JAIN	MALEGAON	17	COMMERCE	1111439276	2808025547	2022-05-31	2025-03-03	
11	SAB22203026	CHAYAN ANIL JAIN	BHIWANDI	19	BBA	2775598877	9546792927	2022-02-25	2025-04-07	
12	SAB22203001	DAKSH DINESHKUMAR TATNI	TALCADA	19	BCOM	7400003151	6060107174	2022-02-10	2024-08-27	

## Views=

### 1. Hostel\_Student\_Details=

This view combines information from the **Students** and **Hostel\_Branch** tables to provide a comprehensive view of students along with their hostel details.

```

CREATE VIEW Hostel_Student_Details AS
SELECT s.*, hb.hostel_name AS hostel_name, hb.address AS hostel_address
FROM Students s
JOIN Hostel_Branch hb ON s.hostel_id = hb.hostel_id;

```

#	student_id	name	address	age	course	student_phone_number	dependent_phone_number	date_of_join	date_of_leave	hos
1	PUB21100420	YASH VIJAY KHATOR	BHIWANDI	23	BCOM	8677255591	7446380546	2022-06-17	2025-07-14	
2	PUB22202070	DAKSH MANOJKUMAR JAIN	RATLAM	20	CFA	1981284522	6234025566	2022-11-21	2023-08-09	
3	SAB22203002	MOHIT SANJAY BOTRA	NAGPUR	19	BFM	6794237750	5710208104	2022-09-18	2026-04-13	
4	SAB22203003	NAMAN MANOJKUMAR JAIN	CHENNAI	19	BMM	6376970462	9037417829	2023-03-03	2024-07-02	
5	SAB22203004	MANAS RAMESHKUMAR SANKLECHA	BHIWANDI	20	CFA	8020778628	4564065509	2022-10-22	2024-01-15	
6	SAB22203012	AKSHAT JAYVANT JAIN	JODHPUR	19	BTECH	7931532782	6341978051	2023-01-08	2026-12-18	
7	SAB22203015	DISHANK PRAVIN HARAN	JAIPUR	20	BMM	4623178280	7560370773	2022-01-21	2027-05-22	
8	SAB22203016	MANTHAN RUPESH JAIN	NAGOTNA	17	BCA	1387694805	6170934569	2023-05-28	2026-11-08	
9	SAB22203017	KAVYA NARENDRA JAIN	AKOLA	18	BBA	1106043586	2577958071	2023-03-06	2025-10-15	
10	SAB22203020	VARUN MOHANLAL JAIN	OOTY	20	BAF	4155038378	9472019070	2023-02-09	2026-05-09	
11	SAB22203025	RAJ YOGESH SHAH	PUNE	22	BCOM	2626140250	1302589357	2022-09-11	2025-07-03	
12	SAB22203026	CHAYAN ANIL TATNI	BHIWANDI	19	BBA	2775598877	9546792927	2022-02-25	2025-04-07	

### 2. Room\_Assignment\_Details=

This view joins the **Student\_room\_assignment**, **Students**, and **Rooms** tables to display the assignment details of students to rooms along with their personal information.

```
CREATE VIEW Room_Assignment_Details AS
SELECT sra.*, s.name AS student_name, s.address AS student_address, r.capacity
FROM Student_room_assignment sra
JOIN Students s ON sra.student_id = s.student_id
JOIN Rooms r ON sra.room_number = r.room_number AND sra.hostel_id =
r.hostel_id;
```

#	student_id	hostel_id	room_number	student_name	student_address	capacity
1	SAB2300349	SAB	3	AAGAM AMIT CHHAJED	INDORE	3
2	SAB22203049	SAB	3	AYUSH JAYESH JAIN	JODHPUR	3
3	SAB22203094	SAB	3	JAINAM AMIT GOLECHA	RAIPUR	3
4	SAB2300387	SAB	4	AAGAM NILESH JAIN	PALI	4
5	SAB2300361	SAB	4	AYUSH VIJAYKUMAR JAIN	BANGALORE	4
6	SAB2300369	SAB	4	DEVAM RAJESH OSWAL	BIJAPUR	4
7	SAB2300331	SAB	4	KUNAL JAYANTI KANKARIYA	SURAT	4
8	SAB2300386	SAB	5	AKSHAT MUKESH DOSHI	UDAIPUR	3
9	SAB2300332	SAB	5	JEETH AJITH GULECHA	CHENNAI	3
10	SAB2300348	SAB	6	ABHISHEK SACHIN GANDHI	SHAHPUR	4
11	SAB2300390	SAB	6	CHAITYA VIKAS JAIN	MALEGAON	4
12	SAB22203095	SAB	6	HARSH SAGAR DOSHI	NASHIK	4
13	SAB22203245	SAB	6	KRIVANSH MUKESH JAIN	VADGI	4

### 3. Employee\_Details=

This view combines information from the **Employees** and **Hostel\_Branch** tables to provide details of employees along with their respective hostel information.

```
CREATE VIEW Employee_Details AS
SELECT e.*, hb.hostel_name AS hostel_name, hb.address AS hostel_address
FROM Employees e
JOIN Hostel_Branch hb ON e.hostel_id = hb.hostel_id;
```

#	employee_id	name	gender	phone_number	hostel_id	salary	date_of_join	date_of_leave	hostel_name	hostel_address
1	SAB21203653	VIRENDRA VYAS	M	6280350523	SAB	600,000.0	2016-09-28	2022-10-05	SMJV Sandhurst Road	99/101, Keshavaji Nayak Rd, Chinch...
2	SAB21204651	BAJRANG SALGAR	M	4118189938	SAB	200,000.0	2017-06-17	(NULL)	SMJV Sandhurst Road	99/101, Keshavaji Nayak Rd, Chinch...
3	SAB21205468	SANJU MAHARAJ	M	1194292750	SAB	280,000.0	2016-11-28	(NULL)	SMJV Sandhurst Road	99/101, Keshavaji Nayak Rd, Chinch...
4	SAB2130034	SHAILESH RATHOD	M	7904228371	SAB	240,000.0	2014-03-04	(NULL)	SMJV Sandhurst Road	99/101, Keshavaji Nayak Rd, Chinch...
5	SAB2130214	HERMANT SINGH	M	2963260934	SAB	480,000.0	2017-05-28	(NULL)	SMJV Sandhurst Road	99/101, Keshavaji Nayak Rd, Chinch...
6	SAB2130331	MOHANLAL PANDEY	M	5029951442	SAB	360,000.0	2017-06-29	(NULL)	SMJV Sandhurst Road	99/101, Keshavaji Nayak Rd, Chinch...
7	SAB2130468	YASHWANT RAO	M	4427900484	SAB	180,000.0	2013-06-29	(NULL)	SMJV Sandhurst Road	99/101, Keshavaji Nayak Rd, Chinch...
8	SAB2130469	NILESH PAWAR	M	9383311809	SAB	180,000.0	2015-02-01	2023-02-10	SMJV Sandhurst Road	99/101, Keshavaji Nayak Rd, Chinch...

### 4. Dependent\_Student\_Details=

This view joins the **Dependents** and **Students** tables to display information about students along with their dependents.

```
CREATE VIEW Dependent_Student_Details AS
SELECT s.*, d.name AS dependent_name, d.relation
FROM Students s
LEFT JOIN Dependents d ON s.student_id = d.student_id;
```

#	student_id	name	address	age	course	student_phone_number	dependent_phone_number	date_of_join	date_of_leave
1	PUB21100420	YASH VIJAY KHATOR	BHIWANDI	23	BCOM	8677255591	7446380546	2022-06-17	2025-07-14
2	PUB22202070	DAKSH MANOJKUMAR JAIN	RATLAM	20	CFA	1981284522	6234025566	2022-11-21	2023-08-09
3	SAB22203002	MOHIT SANJAY BOTRA	NAGPUR	19	BFM	6794237750	5710208104	2022-09-18	2026-04-13
4	SAB22203003	NAMAN MANOJKUMAR JAIN	CHENNAI	19	BMM	6376970462	9037417829	2023-03-03	2024-07-02
5	SAB22203004	MANAS RAMESHKUMAR SANKLECHA	BHIWANDI	20	CFA	8020778628	4564065509	2022-10-22	2024-01-15
6	SAB22203012	AKSHAT JAYVANT JAIN	JODHPUR	19	BTECH	7931532782	6341978051	2023-01-08	2026-12-18
7	SAB22203015	DISHANK PRAVIN HARAN	JAIPUR	20	BMM	4623178280	7560370773	2022-01-21	2027-05-22
8	SAB22203016	MANTHAN RUPESH JAIN	NAGOTNA	17	BCA	1387694805	6170934569	2023-05-28	2026-11-08
9	SAB22203017	KAVYA NARENDRA JAIN	AKOLA	18	BBA	1106043586	2577958071	2023-03-06	2025-10-15
10	SAB22203020	VARUN MOHANLAL JAIN	OOTY	20	BAF	4155038378	9472019070	2023-02-09	2026-05-09
11	SAB22203025	RAJ YOGESH SHAH	PUNE	22	BCOM	2626140250	1302589357	2022-09-11	2025-07-03
12	SAB22203036	CHAVAN ANIL JATNI	BHIWANDI	10	DBA	7775508977	0546707077	2022-03-25	2025-04-07

## 5. Student\_Fee\_Details=

This view combines data from the **Students** and **Fees** tables to show details of students along with their fee payment information.

```
CREATE VIEW Student_Fee_Details AS
SELECT s.*, f.date, f.amount, f.paid_till_date, f.pending, f.mode_of_payment
FROM Students s
JOIN Fees f ON s.student_id = f.student_id;
```

#	student_id	name	address	age	course	student_phone_number	dependent_phone_number	date_of_join	date_of_leave	hos
1	PUB21100420	YASH VIJAY KHATOR	BHIWANDI	23	BCOM	8677255591	7446380546	2022-06-17	2025-07-14	
2	PUB22202070	DAKSH MANOJKUMAR JAIN	RATLAM	20	CFA	1981284522	6234025566	2022-11-21	2023-08-09	
3	SAB22203002	MOHIT SANJAY BOTRA	NAGPUR	19	BFM	6794237750	5710208104	2022-09-18	2026-04-13	
4	SAB22203003	NAMAN MANOJKUMAR JAIN	CHENNAI	19	BMM	6376970462	9037417829	2023-03-03	2024-07-02	
5	SAB22203004	MANAS RAMESHKUMAR SANKLECHA	BHIWANDI	20	CFA	8020778628	4564065509	2022-10-22	2024-01-15	
6	SAB22203012	AKSHAT JAYVANT JAIN	JODHPUR	19	BTECH	7931532782	6341978051	2023-01-08	2026-12-18	
7	SAB22203015	DISHANK PRAVIN HARAN	JAIPUR	20	BMM	4623178280	7560370773	2022-01-21	2027-05-22	
8	SAB22203016	MANTHAN RUPESH JAIN	NAGOTNA	17	BCA	1387694805	6170934569	2023-05-28	2026-11-08	
9	SAB22203017	KAVYA NARENDRA JAIN	AKOLA	18	BBA	1106043586	2577958071	2023-03-06	2025-10-15	
10	SAB22203020	VARUN MOHANLAL JAIN	OOTY	20	BAF	4155038378	9472019070	2023-02-09	2026-05-09	
11	SAB22203025	RAJ YOGESH SHAH	PUNE	22	BCOM	2626140250	1302589357	2022-09-11	2025-07-03	
12	SAB22203036	CHAVAN ANIL JATNI	BHIWANDI	10	DBA	7775508977	0546707077	2022-03-25	2025-04-07	