COLLEGE MANAGEMENT SYSTEM

Final Project for SQL Module

By Esha Shetty

1. DESCRIPTION:

Following database schema is designed to function as a backend storage database for a web application built to manage a college. By storing information in a relational database, all the tasks related to daily functioning of the college can be performed easily and much more efficiently. Some of the benefits of using this system to store data over traditional paper registers are as follows:

- Updating and modifying student list is much easier and efficient
- Maintaining course, fees details is easy and efficient.
- Calculations like due fees can be done automatically by DBMS, thus eliminating human error.
- RDBMS provides many ways to analyse available data, thus helping in making more informed decisions about student, teacher management and other aspects of college management.
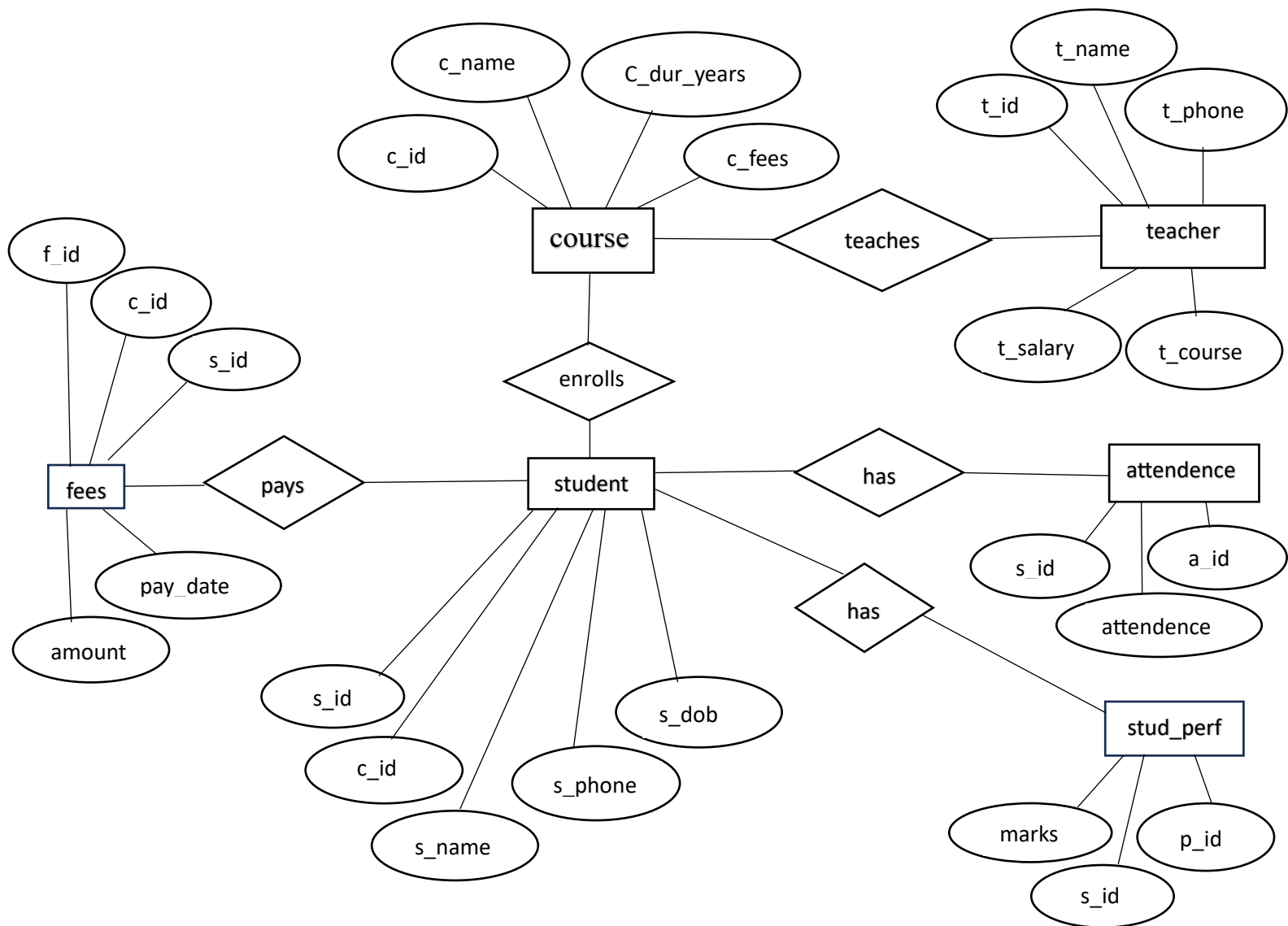
This database contains 6 tables:

1. Student

2. Teacher

3. Fees

4. Course

5. Attendence

6. Stud_perf (marks of student)

How these tables/entities are related to each other is shown pictorially on next page through

ER diagram, i.e., Entity Relationship Diagram.

2. ER DIAGRAM:

3. TABLE DESCRIPTION:

1. student

```
MariaDB [sdbms]> desc student;
+---------+-------------+------+-----+---------+-------+
| Field   | Type        | Null | Key | Default | Extra |
+---------+-------------+------+-----+---------+-------+
| s_id    | int(11)     | NO   | PRI | NULL    |       |
| c_id    | varchar(20) | YES  | MUL | NULL    |       |
| s_name  | varchar(30) | YES  |     | NULL    |       |
| s_phone | varchar(20) | YES  |     | NULL    |       |
| s_dob   | date        | YES  |     | NULL    |       |
+---------+-------------+------+-----+---------+-------+
5 rows in set (0.015 sec)
```

2. teacher

```
MariaDB [sdbms]> desc teacher;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| t_id     | int(11)     | NO   | PRI | NULL    |       |
| t_name   | varchar(30) | YES  |     | NULL    |       |
| t_phone  | varchar(20) | YES  |     | NULL    |       |
| t_course | varchar(30) | YES  |     | NULL    |       |
| t_salary | double      | YES  |     | NULL    |       |
+----------+-------------+------+-----+---------+-------+
5 rows in set (0.011 sec)
```

3. fees

```
MariaDB [sdbms]> desc fees;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| f_id     | int(11)     | NO   | PRI | NULL    |       |
| s_id     | int(11)     | YES  | MUL | NULL    |       |
| c_id     | varchar(20) | YES  | MUL | NULL    |       |
| amount   | double      | YES  |     | NULL    |       |
| pay_date | date        | YES  |     | NULL    |       |
+----------+-------------+------+-----+---------+-------+
5 rows in set (0.010 sec)
```

4. course

```
MariaDB [sdbms]> desc course;
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| c_id        | varchar(20) | NO   | PRI | NULL    |       |
| c_name      | varchar(30) | YES  |     | NULL    |       |
| c_dur_years | int(11)     | YES  |     | NULL    |       |
| c_fees      | double      | YES  |     | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
4 rows in set (0.011 sec)
```

5. attendence

```
MariaDB [sdbms]> desc attendence;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| a_id       | int(11)     | NO   | PRI | NULL    |       |
| s_id       | int(11)     | YES  | MUL | NULL    |       |
| attendence | varchar(10) | YES  |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+
3 rows in set (0.013 sec)
```

6. stud_perf

```
MariaDB [sdbms]> desc stud_perf;
+-------+---------+------+-----+---------+-------+
| Field | Type    | Null | Key | Default | Extra |
+-------+---------+------+-----+---------+-------+
| p_id  | int(11) | NO   | PRI | NULL    |       |
| s_id  | int(11) | YES  | MUL | NULL    |       |
| marks | int(11) | YES  |     | NULL    |       |
+-------+---------+------+-----+---------+-------+
3 rows in set (0.020 sec)
```

4. COMMANDS:

- **Create database**

  create database sdbms;

- **Select database**

  use sdbms;

- **Create table course**

  create table course(c_id varchar(20) primary key,c_name varchar(30),c_dur_years varchar(20),c_fees double);

- **Create table student**

  create table student(s_id int primary key,c_id varchar(20),s_name varchar(30),s_phone varchar(20),s_dob date,constraint ci foreign key(c_id) references course(c_id));

- **Create table teacher**

  create table teacher(t_id int primary key,t_name varchar(30),t_phone varchar(20),t_course varchar(30),t_salary double);

- **Create table fees**

  create table fees(f_id int primary key,s_id int,c_id varchar(20),amount double,pay_date date, constraint si foreign key(s_id) references student(s_id),constraint ci3 foreign key(c_id) references course(c_id));

- **Create table stud_perf**

  create table stud_perf(p_id int primary key,s_id int,marks int, constraint si2 foreign key(s_id) references student(s_id));

- **Create table attendence**

  create table attendence(a_id int primary key,s_id int, attendence varchar(10),constraint s3 foreign key(s_id) references student(s_id));

- **Populate table course**

  insert into course values('1001IT','BScIT',3,90000);

  insert into course values('1002CS','BScCS',3,100000);

  insert into course values('1003BCA','BCA',3,100400);

  insert into course values('1004BArch','BArch',5,300400);

  insert into course values('1005BAP','BA Psychology',3,78000);

  insert into course values('1006BCom','BCom',3,60000);

  insert into course values('1007BT','Biotech',4,100000);

  insert into course values('1008BE','BE',4,708000);

  insert into course values('1009MIT','MScIT',2,202600);

  insert into course values('1010MCA','MCA',2,300000);

  insert into course values('1011BA','BBA',3,400000);

  insert into course values('1012HSC','Science PCM ',2,150000);

  insert into course values('1013HSC','Commerce',2,50000);

  insert into course values('1014HSC','Arts',2,30000);

  insert into course values('1015BM','BA Mathematics',3,100000);

  insert into course values('1016HSC','Science PCMB ',2,120000);

- **Populate table student**

  insert into student values(101,'1001IT','esha shetty','9892250485','2002-10-24');

  insert into student values(102,'1001IT','tisha teli','9229850485','2003-02-19');

  insert into student values(103,'1003BCA','manali thakur','9229850000','2003-08-05');

  insert into student values(104,'1013HSC','vardan choudary','7429850000','2006-01-25');

  insert into student values(105,'1005BAP','madhav mishra','7429850965','2003-03-13');

  insert into student values(106,'1007BT','shweta tiwari','9894280485','2005-09-10');

  insert into student values(107,'1014HSC','komal rajput','9004280485','2005-02-22');

  insert into student values(108,'1010MCA','diya sharma','9004281578','2001-12-19');

  insert into student values(109,'1008BE','ketan modi','9004281578','2003-05-21');

insert into student values(110,'1009MIT','kovya kumari','1234567890','2004-12-18');

insert into student values(111,'1002CS','aastha more','154862394','2002-07-28');

insert into student values(112,'1001IT','risha teli','9231850485','2001-09-20');

insert into student values(113,'1003BCA','pranav thakur','9996850000','2001-07-05');

insert into student values(114,'1012HSC','jiya morbia','9002648952','2003-02-12');

insert into student values(115,'1004BArch','bhumi morbia','9234856791','2001-04-06');

insert into student values(116,'1010MCA','daya gada','7564891234','2001-11-30');

insert into student values(117,'1015BM','sundari shetty','2223458974','2001-08-11');

insert into student values(118,'1003BCA','sarvesh hegde','9234816597','2003-08-10');

insert into student values(119,'1007BT','dinesh gurav','9051648972','2001-12-19');

insert into student values(120,'1006BCom','ryan pinto','9004456578','2003-07-02');

insert into student values(121,'1010MCA','benjamin christ','9562281578','2004-09-12');

insert into student values(122,'1013HSC','payal more','5617894521','2002-03-20');

insert into student values(123,'1011BA','dhanashree bhurke','9486127894','2002-07-11');

insert into student values(124,'1006BCom','ganesh iyer','9013567512','2001-07-07');

insert into student values(125,'1007BT','archana sahoo','9856424856','2002-10-13');

insert into student values(126,'1010MCA','pooja gupta','9004281578','2003-09-26');

insert into student values(127,'1015BM','sonalika bhide','9045789632','2002-08-15');

insert into student values(128,'1013HSC','joydeep dutta','2233445566','2002-11-21');

insert into student values(129,'1003BCA','abdul khan','9234856791','2003-10-17');

insert into student values(130,'1008BE','sania mirza','9457832659','2001-01-22');

insert into student values(131,'1001IT','esha deol','7845147852','2001-12-14');

insert into student values(132,'1010MCA','jiya mehta','9145628778','2002-12-31');

insert into student values(133,'1004BArch','amrit kaur','9032165498','2001-10-19');

insert into student values(134,'1002CS','shraddha bhor','9147852369','2004-03-19');

insert into student values(135,'1006BCom','neha gupta','7896541230','2002-12-19');

insert into student values(136,'1005BAP','hridhika patil','92316498745','2002-02-12');

insert into student values(137,'1014HSC','agasthya mandalaparthy' ,'5263419878' ,'2002-10-20');

insert into student values(138,'1001IT','naina goyal','900400000','2002-11-01');

insert into student values(139,'1009MIT','ganesh reddy','95864973212','2003-12-01');

insert into student values(140,'1015BM','sachin patil','92316457980','2001-11-18');

insert into student values(141,'1012HSC','disha suvarna','45682315687','2001-05-25');

insert into student values(142,'1010MCA','roshan kaur','9213564879','2001-06-04');

insert into student values(143,'1010MCA','babita singh','9789632145','2001-09-19');

insert into student values(144,'1003BCA','irfan khan','02224582358','2001-09-23');

insert into student values(145,'1006BCom','anita naik','98956231478','2001-02-09');

insert into student values(146,'1004BArch','pratiksha naik','9078120478','2004-12-21');

insert into student values(147,'1003BCA','isha desai','8954123045','2001-12-05');

insert into student values(148,'1007BT','madhavi kelkar','90123459578','2003-10-14');

insert into student values(149,'1001IT','koyal mehra','90459862585','2003-12-16');

insert into student values(150,'1005BAP','mahesh pathak','95648623228','2002-10-02');

- **Populate table teacher**

insert into teacher values(1,'shreevidya nair','9892555555','BScIT',35000);

insert into teacher values(2,'anju singh','9892250787','BScCS',50000);

insert into teacher values(3,'omkar sherkane','9892554441','BCA',36000);

insert into teacher values(4,'simran shinde','98985455155','BArch',21000);

insert into teacher values(5,'padmaja ganti','98922952151','BA Pschology',45000);

insert into teacher values(6,'deepika sharma','9892250400','BCom',56000);

insert into teacher values(7,'kuldeep prabhu','9892256457','Biotech',89000);

insert into teacher values(8,'prajakta kane','98922505455','BE',34000);

insert into teacher values(9,'rashmi patil','9585455654','MScIT',26000);

insert into teacher values(10,'sanjana bangale','98555968547','MCA',98000);

insert into teacher values(11,'alma khan','9945656521','BBA',34000);

insert into teacher values(12,'sharan sachdev','9754565255','Science PCM',76000);

insert into teacher values(13,'varsha bhogale','9491628391','Commerce',84000);

insert into teacher values(14,'dhanya vinish','9369874123','Arts',32400);

insert into teacher values(15,'vidya agnas','9894578566','BA Mathematics',64200);

insert into teacher values(16,'gopikumar pillai','97946132558','Science PCMB',23400);

insert into teacher values(17,'gajanan mhatre','9784589564','BScIT',24000);

insert into teacher values(18,'aditi altekar','9784519632','BScIT',35000);

insert into teacher values(19,'anjali sharma','9145892536','BScCA',35600);

insert into teacher values(20,'charu saraswat','9124536563','BE',25000);

insert into teacher values(21,'harsh agarwal','9551212225','Commerce',54000);

insert into teacher values(22,'laxmi nair','94819923567','Science PCM',45000);

insert into teacher values(23,'neeta kamble','9147852369','Biotech',45000);

insert into teacher values(24,'kaushal velani','9454545856','BScCS',24000);

insert into teacher values(25,'dhruv patil','97999955125','BA Mathematics',23000);

insert into teacher values(26, 'anita naik','98659655412','BA Psychology',55000);

insert into teacher values(27,'kamala ramchanran','9895465485','BCA',56000);

insert into teacher values(28,'vidya patil','9865562475','BBA',56000);

insert into teacher values(29,'sakshi patil','94455758542','BBA',47000);

insert into teacher values(30,'suresh chandra','9549845112','BArch',85000);

insert into teacher values(31,'krishna shetty','9812555222','BCom',95000);

insert into teacher values(32, 'mahesh pathak','9554545515','BA Psychology',56000);

insert into teacher values(33, 'babita singh' ,'954659556522','BScIT',35000);

insert into teacher values(34, 'hridhika patil' ,'45336526556','BScIT',55000);

insert into teacher values(35, 'jiya mehta' ,'9457812369','BCom',46500);

insert into teacher values(36,'juhi kelkar','94562318789','BCA',46500);

insert into teacher values(37,'kaushal velani','9453315566','MCA',36000);

insert into teacher values(38,'dhruvi patel','9135245411','MScIT',35600);

insert into teacher values(39,'joanna parackal','9264856741','MScIT',50000);

insert into teacher values(40,'nisha gupta','8898645929','MScIT',55000);

insert into teacher values(41,'prerna baji','9920060549','Science PCMB',25000);

insert into teacher values(42,'sukhdeep singh','9892250485','BScIT',54640);

insert into teacher values(43,'shriyan','9169142828','Science PCMB',35065);

insert into teacher values(44,'bipin chandra','9594250107','BCA',85112);

insert into teacher values(45,'neeraj mane','774826212','BScCS',54621);

insert into teacher values(46,'vishlesha hegde','7045095031','BE',35120);

insert into teacher values(47,'abhijith das','9324112157','Biotech',5460);

insert into teacher values(48,'adnan shaikh','9987503837','Biotech',42000);

insert into teacher values(49,'amey patil','8655249493','Arts',35300);

insert into teacher values(50,'ankesh pandey','9930418843','Arts',25000);

- **Populate table fees**

  insert into fees values(1001,102,'1001IT',60000,'2023-02-02');

  insert into fees values(1002,123, '1011BA',400000,'2023-05-02');

  insert into fees values(1003,111, '1002CS',90000,'2023-01-10');

  insert into fees values(1004,105, '1005BAP',78000,'2023-02-23');

  insert into fees values(1005,132, '1010MCA',290000,'2023-01-07');

  insert into fees values(1006,150, '1005BAP',78000,'2023-01-16');

  insert into fees values(1007,103, '1003BCA',96000,'2022-10-15');

  insert into fees values(1008,112, '1001IT',80000,'2022-12-13');

  insert into fees values(1009,106, '1007BT',100000,'2023-03-18');

  insert into fees values(1010,107,'1014HSC',30000,'2023-01-25');

  insert into fees values(1011,137, '1014HSC',30000,'2023-05-13');

  insert into fees values(1012,138, '1001IT',90000,'2023-02-18');

  insert into fees values(1013,141, '1012HSC',150000,'2023-03-07');

  insert into fees values(1014,129, '1003BCA',55000,'2022-12-04');

  insert into fees values(1015,139, '1009MIT',102600,'2022-12-12');

  insert into fees values(1016,115, '1004BArch',240000,'2023-05-01');

```
insert into fees values(1017,121, '1010MCA',200000,'2023-02-02');
insert into fees values(1018,109, '1008BE',500000,'2023-02-16');
insert into fees values(1019,101, '1001IT',40000,'2023-04-12');
insert into fees values(1020,126, '1010MCA',300000,'2023-02-02');
insert into fees values(1021,135, '1006BCom',60000,'2022-09-14');
insert into fees values(1022,104, '1013HSC',50000,'2023-02-02');
insert into fees values(1023,113, '1003BCA',70000,'2023-02-17');
insert into fees values(1024,124, '1006BCom',60000,'2023-02-09');
insert into fees values(1025,131, '1001IT',90000,'2023-01-24');
insert into fees values(1026,146, '1004BArch',160000,'2023-02-24');
insert into fees values(1027,108, '1010MCA',90000,'2022-08-02');
insert into fees values(1028,114, '1012HSC',150000,'2023-02-16');
insert into fees values(1029,125, '1007BT',100000,'2023-02-12');
insert into fees values(1030,133, '1004BArch',300400,'2022-08-26');
insert into fees values(1031,142, '1010MCA',100000,'2023-04-09');
insert into fees values(1032,110, '1009MIT',202600,'2023-05-28');
insert into fees values(1033,116, '1010MCA', 100000,'2022-12-22');
insert into fees values(1034,122,'1013HSC',50000,'2023-02-02');
insert into fees values(1035,134, '1002CS',80000,'2022-11-05');
insert into fees values(1036,143, '1010MCA',200000,'2022-10-22');
insert into fees values(1037,127, '1015BM',90000,'2023-05-28');
insert into fees values(1038,136, '1005BAP',78000,'2022-09-27');
insert into fees values(1039,144, '1003BCA',85000,'2023-04-14');
insert into fees values(1040,117, '1015BM',100000,'2023-02-02');
insert into fees values(1041,128, '1013HSC',50000,'2022-10-24');
insert into fees values(1042,140, '1015BM',100000,'2023-02-02');
insert into fees values(1043,120, '1006BCom',40000,'2023-01-29');
insert into fees values(1044,118, '1003BCA',100400,'2023-02-08');
insert into fees values(1045,130, '1008BE',400800,'2023-05-02');
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insert into fees values(1046,119, '1007BT',90000,'2022-12-27');

insert into fees values(1047,145, '1006BCom',60000,'2023-02-25');

insert into fees values(1048,147, '1003BCA',100400,'2023-05-02');

insert into fees values(1049,148, '1007BT',100000,'2023-03-28');

insert into fees values(1050,149, '1001IT',20000,'2022-08-19');

insert into fees values(1051, 149, '1001IT',40000,'2023-04-19');

insert into fees values(1052, 129, '1003BCA',40000,'2023-02-04');

insert into fees values(1053, 120, '1006BCom',20000,'2023-03-14');

insert into fees values(1054, 139, '1009MIT',50000,'2023-02-12');

insert into fees values(1055, 116, '1010MCA', 100000,'2023-03-24');

insert into fees values(1056, 108, '1010MCA',100000,'2023-05-17');

- **Populate table attendance**

  insert into attendence values(10001,101,94);

  insert into attendence values(10002,102,78);

  insert into attendence values(10003,103,76);

  insert into attendence values(10004,104,84);

  insert into attendence values(10005,105,83);

  insert into attendence values(10006,106,78);

  insert into attendence values(10007,107,74);

  insert into attendence values(10008,108,45);

  insert into attendence values(10009,109,98);

  insert into attendence values(10010,111,100);

  insert into attendence values(10011,112,96);

  insert into attendence values(10012,113,56);

  insert into attendence values(10013,114,99);

  insert into attendence values(10014,115,70);

  insert into attendence values(10015,116,63);

  insert into attendence values(10016,117,52);

insert into attendence values(10017,118,45);

insert into attendence values(10018,119,98);

insert into attendence values(10019,120,87);

insert into attendence values(10020,121,68);

insert into attendence values(10021,122,85);

insert into attendence values(10022,123,82);

insert into attendence values(10023,124,79);

insert into attendence values(10024,125,12);

insert into attendence values(10025,126,78);

insert into attendence values(10026,127,66);

insert into attendence values(10027,128,80);

insert into attendence values(10028,129,91);

insert into attendence values(10029,130,73);

insert into attendence values(10030,131,100);

insert into attendence values(10031,132,90);

insert into attendence values(10032,133,47);

insert into attendence values(10033,134,55);

insert into attendence values(10034,135,68);

insert into attendence values(10035,136,95);

insert into attendence values(10036,137,45);

insert into attendence values(10037,138,45);

insert into attendence values(10038,139,85);

insert into attendence values(10039,140,48);

insert into attendence values(10040,141,79);

insert into attendence values(10041,142,70);

insert into attendence values(10042,143,53);

insert into attendence values(10043,144,94);

insert into attendence values(10044,145,85);

insert into attendence values(10045,146,94);

insert into attendence values(10046,147,86);

insert into attendence values(10047,148,75);

insert into attendence values(10048,149,78);

insert into attendence values(10049,150,94);

insert into attendence values(10050,110,74);

- **Populate table stud_perf**

insert into stud_perf values(1,101,86);

insert into stud_perf values(2,102,94);

insert into stud_perf values(3,103,45);

insert into stud_perf values(4,104,89);

insert into stud_perf values(5,105,45);

insert into stud_perf values(6,106,89);

insert into stud_perf values(7,107,86);

insert into stud_perf values(8,108,56);

insert into stud_perf values(9,109,79);

insert into stud_perf values(10,110,76);

insert into stud_perf values(11,111,36);

insert into stud_perf values(12,112,88);

insert into stud_perf values(13,113,86);

insert into stud_perf values(14,114,94);

insert into stud_perf values(15,115,76);

insert into stud_perf values(16,116,74);

insert into stud_perf values(17,117,48);

insert into stud_perf values(18,118,65);

insert into stud_perf values(19,119,87);

insert into stud_perf values(20,120,99);

insert into stud_perf values(21,121,85);

insert into stud_perf values(22,122,25);

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insert into stud_perf values(23,123,79);

insert into stud_perf values(24,124,88);

insert into stud_perf values(25,125,71);

insert into stud_perf values(26,126,72);

insert into stud_perf values(27,127,86);

insert into stud_perf values(28,128,86);

insert into stud_perf values(29,129,79);

insert into stud_perf values(30,130,74);

insert into stud_perf values(31,131,97);

insert into stud_perf values(32,132,98);

insert into stud_perf values(33,133,84);

insert into stud_perf values(34,134,81);

insert into stud_perf values(35,135,80);

insert into stud_perf values(36,136,93);

insert into stud_perf values(37,137,96);

insert into stud_perf values(38,138,73);

insert into stud_perf values(39,139,72);

insert into stud_perf values(40,140,55);

insert into stud_perf values(41,141,32);

insert into stud_perf values(42,142,73);

insert into stud_perf values(43,143,38);

insert into stud_perf values(44,144,12);

insert into stud_perf values(45,145,80);

insert into stud_perf values(46,146,99);

insert into stud_perf values(47,147,58);

insert into stud_perf values(48,148,19);

insert into stud_perf values(49,149,90);

insert into stud_perf values(50,150,91);
```

5. SUBQUERIES:

1. Retrieve the names of all students who scored higher than the average marks in the exam.

Ans: select s_id,marks from stud_perf where marks > (select avg(marks) from stud_perf);

```
+------+-------+
| s_id | marks |
+------+-------+
|  101 |    86 |
|  102 |    94 |
|  104 |    89 |
|  106 |    89 |
|  107 |    86 |
|  109 |    79 |
|  110 |    76 |
|  112 |    88 |
|  113 |    86 |
|  114 |    94 |
|  115 |    76 |
|  116 |    74 |
|  119 |    87 |
|  120 |    99 |
|  121 |    85 |
|  123 |    79 |
|  124 |    88 |
|  127 |    86 |
|  128 |    86 |
|  129 |    79 |
|  130 |    74 |
|  131 |    97 |
|  132 |    98 |
|  133 |    84 |
|  134 |    81 |
|  135 |    80 |
|  136 |    93 |
|  137 |    96 |
|  145 |    80 |
|  146 |    99 |
|  149 |    90 |
|  150 |    91 |
+------+-------+
32 rows in set (0.001 sec)
```

2. Retrieve names of student whose attendance is less than 75 percent.

Ans. select s_name from student where s_id in (select s_id from attendence where attendence < 75);

```
+------------------------+
| s_name                 |
+------------------------+
| komal rajput           |
| diya sharma            |
| kovya kumari           |
| pranav thakur          |
| bhumi morbia           |
| daya gada              |
| sundari shetty         |
| sarvesh hegde          |
| benjamin christ        |
| archana sahoo          |
| sonalika bhide         |
| sania mirza            |
| amrit kaur             |
| shraddha bhor          |
| neha gupta             |
| agasthya mandalaparthy |
| naina goyal            |
| sachin patil           |
| roshan kaur            |
| babita singh           |
+------------------------+
20 rows in set (0.001 sec)
```

3. Retrieve name,id of students who paid their fees in one go.

Ans. SELECT s_id,s_name FROM student WHERE s_id IN (SELECT s_id FROM fees WHERE amount = (SELECT c_fees FROM course WHERE c_id = fees.c_id));

```
+------+------------------------+
| s_id | s_name                 |
+------+------------------------+
|  104 | vardan choudary        |
|  105 | madhav mishra          |
|  106 | shweta tiwari          |
|  107 | komal rajput           |
|  110 | kovya kumari           |
|  114 | jiya morbia            |
|  117 | sundari shetty         |
|  118 | sarvesh hegde          |
|  122 | payal more             |
|  123 | dhanashree bhurke      |
|  124 | ganesh iyer            |
|  125 | archana sahoo          |
|  126 | pooja gupta            |
|  128 | joydeep dutta          |
|  131 | esha deol              |
|  133 | amrit kaur             |
|  135 | neha gupta             |
|  136 | hridhika patil         |
|  137 | agasthya mandalaparthy |
|  138 | naina goyal            |
|  140 | sachin patil           |
|  141 | disha suvarna          |
|  145 | anita naik             |
|  147 | isha desai             |
|  148 | madhavi kelkar         |
|  150 | mahesh pathak          |
+------+------------------------+
26 rows in set (0.001 sec)
```

4. Retrieve teacher with highest, second highest salary.

Ans.

   i.   Highest
select t_id,t_name,t_course,t_salary as "highest salary" from teacher where t_salary=(select max(t_salary) from teacher);

```
+------+----------------+----------+----------------+
| t_id | t_name         | t_course | highest salary |
+------+----------------+----------+----------------+
|   10 | sanjana bangale | MCA     |          98000 |
+------+----------------+----------+----------------+
1 row in set (0.001 sec)
```

   ii.   Second highest
select t_id,t_name,t_course,t_salary as "second highest salary" from teacher where t_salary=(select max(t_salary) from teacher where t_salary<>(select max(t_salary) from teacher));

```
+------+----------------+----------+-----------------------+
| t_id | t_name         | t_course | second highest salary |
+------+----------------+----------+-----------------------+
|   31 | krishna shetty | BCom     |                 95000 |
+------+----------------+----------+-----------------------+
1 row in set (0.001 sec)
```

5. Retrieve course name where number of students is less than 2.
Ans. Select c_id,c_name from course where c_id in (select c_id from student group by c_id having count(*)<2);

```
+--------+--------+
| c_id   | c_name |
+--------+--------+
| 1011BA | BBA    |
+--------+--------+
1 row in set (0.004 sec)
```

6. JOINS:

1. Retrieve details of amount of fees paid by the student.

select fees.s_id,course.c_id,sum(amount) as paid,course.c_fees from fees inner join course on fees.c_id=course.c_id group by s_id;

s_id	c_id	paid	c_fees
101	1001IT	40000	90000
102	1001IT	60000	90000
103	1003BCA	96000	100400
104	1013HSC	50000	50000
105	1005BAP	78000	78000
106	1007BT	100000	100000
107	1014HSC	30000	30000
108	1010MCA	190000	300000
109	1008BE	500000	708000
110	1009MIT	202600	202600
111	1002CS	90000	100000
112	1001IT	80000	90000
113	1003BCA	70000	100400
114	1012HSC	150000	150000
115	1004BArch	240000	300400
116	1010MCA	200000	300000
117	1015BM	100000	100000
118	1003BCA	100400	100400
119	1007BT	90000	100000
120	1006BCom	60000	60000
121	1010MCA	200000	300000
122	1013HSC	50000	50000
123	1011BA	400000	400000
124	1006BCom	60000	60000
125	1007BT	100000	100000
126	1010MCA	300000	300000
127	1015BM	90000	100000
128	1013HSC	50000	50000
129	1003BCA	95000	100400
130	1008BE	400800	708000
131	1001IT	90000	90000
132	1010MCA	290000	300000
133	1004BArch	300400	300400
134	1002CS	80000	100000
135	1006BCom	60000	60000
136	1005BAP	78000	78000
137	1014HSC	30000	30000
138	1001IT	90000	90000
139	1009MIT	152600	202600
140	1015BM	100000	100000
141	1012HSC	150000	150000
142	1010MCA	100000	300000
143	1010MCA	200000	300000
144	1003BCA	85000	100400
145	1006BCom	60000	60000
146	1004BArch	160000	300400
147	1003BCA	100400	100400
148	1007BT	100000	100000
149	1001IT	60000	90000
150	1005BAP	78000	78000

50 rows in set (0.004 sec)

2. Retrieve details of balance fees of the student.

Ans. select fees.s_id,course.c_id,c_fees-sum(amount) as balance,course.c_fees from fees inner join course on fees.c_id=course.c_id group by s_id;

s_id	c_id	balance	c_fees
101	1001IT	50000	90000
102	1001IT	30000	90000
103	1003BCA	4400	100400
104	1013HSC	0	50000
105	1005BAP	0	78000
106	1007BT	0	100000
107	1014HSC	0	30000
108	1010MCA	110000	300000
109	1008BE	208000	708000
110	1009MIT	0	202600
111	1002CS	10000	100000
112	1001IT	10000	90000
113	1003BCA	30400	100400
114	1012HSC	0	150000
115	1004BArch	60400	300400
116	1010MCA	100000	300000
117	1015BM	0	100000
118	1003BCA	0	100400
119	1007BT	10000	100000
120	1006BCom	0	60000
121	1010MCA	100000	300000
122	1013HSC	0	50000
123	1011BA	0	400000
124	1006BCom	0	60000
125	1007BT	0	100000
126	1010MCA	0	300000
127	1015BM	10000	100000
128	1013HSC	0	50000
129	1003BCA	5400	100400
130	1008BE	307200	708000
131	1001IT	0	90000
132	1010MCA	10000	300000
133	1004BArch	0	300400
134	1002CS	20000	100000
135	1006BCom	0	60000
136	1005BAP	0	78000
137	1014HSC	0	30000
138	1001IT	0	90000
139	1009MIT	50000	202600
140	1015BM	0	100000
141	1012HSC	0	150000
142	1010MCA	200000	300000
143	1010MCA	100000	300000
144	1003BCA	15400	100400
145	1006BCom	0	60000
146	1004BArch	140400	300400
147	1003BCA	0	100400
148	1007BT	0	100000
149	1001IT	30000	90000
150	1005BAP	0	78000

50 rows in set (0.001 sec)

3. Retrieve the course name, student name, and attendance for all students:

Ans. select course.c_name, student.s_name, attendence.attendence from student inner join course on student.c_id = course.c_id inner join attendence on student.s_id = attendence.s_id ;

```
+----------------+-----------------------+------------+
| c_name         | s_name                | attendence |
+----------------+-----------------------+------------+
| BScIT          | esha shetty           | 94         |
| BScIT          | tisha teli            | 78         |
| BScIT          | risha teli            | 96         |
| BScIT          | esha deol             | 100        |
| BScIT          | naina goyal           | 45         |
| BScIT          | koyal mehra           | 78         |
| BScCS          | aastha more           | 100        |
| BScCS          | shraddha bhor         | 55         |
| BCA            | manali thakur         | 76         |
| BCA            | pranav thakur         | 56         |
| BCA            | sarvesh hegde         | 45         |
| BCA            | abdul khan            | 91         |
| BCA            | irfan khan            | 94         |
| BCA            | isha desai            | 86         |
| BArch          | bhumi morbia          | 70         |
| BArch          | amrit kaur            | 47         |
| BArch          | pratiksha naik        | 94         |
| BA Psychology  | madhav mishra         | 83         |
| BA Psychology  | hridhika patil        | 95         |
| BA Psychology  | mahesh pathak         | 94         |
| BCom           | ryan pinto            | 87         |
| BCom           | ganesh iyer           | 79         |
| BCom           | neha gupta            | 68         |
| BCom           | anita naik            | 85         |
| Biotech        | shweta tiwari         | 78         |
| Biotech        | dinesh gurav          | 98         |
| Biotech        | archana sahoo         | 12         |
| Biotech        | madhavi kelkar        | 75         |
| BE             | ketan modi            | 98         |
| BE             | sania mirza           | 73         |
| MScIT          | kovya kumari          | 74         |
| MScIT          | ganesh reddy          | 85         |
```

```
| MCA            | diya sharma           | 45         |
| MCA            | daya gada             | 63         |
| MCA            | benjamin christ       | 68         |
| MCA            | pooja gupta           | 78         |
| MCA            | jiya mehta            | 90         |
| MCA            | roshan kaur           | 70         |
| MCA            | babita singh          | 53         |
| BBA            | dhanashree bhurke     | 82         |
| Science PCM    | jiya morbia           | 99         |
| Science PCM    | disha suvarna         | 79         |
| Commerce       | vardan choudary       | 84         |
| Commerce       | payal more            | 85         |
| Commerce       | joydeep dutta         | 80         |
| Arts           | komal rajput          | 74         |
| Arts           | agasthya mandalaparthy| 45         |
| BA Mathematics | sundari shetty        | 52         |
| BA Mathematics | sonalika bhide        | 66         |
| BA Mathematics | sachin patil          | 48         |
+----------------+-----------------------+------------+
50 rows in set (0.001 sec)
```

4. Retrieve the student's name, student marks, and for MCA students:

Ans. select student.s_name, stud_perf.marks from student inner join stud_perf on student.s_id = stud_perf.s_id where c_id='1010MCA';

```
+-----------------+-------+
| s_name          | marks |
+-----------------+-------+
| diya sharma     |    56 |
| daya gada       |    74 |
| benjamin christ |    85 |
| pooja gupta     |    72 |
| jiya mehta      |    98 |
| roshan kaur     |    73 |
| babita singh    |    38 |
+-----------------+-------+
7 rows in set (0.004 sec)
```

5. Retrieve student name, attendance whose attendance is 100 percent.

Ans. select student.s_name, attendence.attendence from student inner join attendence on student.s_id = attendence.s_id where attendence=100;

```
+-------------+------------+
| s_name      | attendence |
+-------------+------------+
| aastha more | 100        |
| esha deol   | 100        |
+-------------+------------+
2 rows in set (0.001 sec)
```