

lab_assignment_7

lab8_SQL_ANP_C7281_Cross_join

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ANP-C7281

lab8_SQL_ANP_C7281_Cross_join

Lab 1: Use the Student management system Database and table from our previous lab and write a SQL query to achieve the below scenario.

Assume you are managing a university database that tracks student enrollments in various courses. You have two tables, "Student" and "Enrollment". The goal is to retrieve information about each student's ID, first name, last name, and their enrollment details, including the enrollment ID and the associated course ID.

Hint: Use the inner join to retrieve data.

Submission:

Create an SQL script file containing your solutions for all tasks (queries). Name the file "lab_assignment1.sql" Provide comments above each query to indicate the query's purpose.

ChatGPT Exercise

Using ChatGPT generates SQL queries of the below problem.

Scenario 1: Imagine you have tables for students and courses. Use an inner join to generate a list of all possible student-course combinations, displaying the student name and course name.

We have a "Student" table with the following a

columns:StudentId,FirstName,lastName and "Course" table with the following a

columns: CourseId,CourseName and Enrollment table with the following a

columns:EnrollmentID,StudentID(Foreign key),CourseID(Foreign Key).You want to

use inner join to generate a list of all possible student-course combinations.Generate the ChatGPT prompt for the above scenario.

Lab 1: Use the Student management system Database and table from our previous lab and write a SQL query to achieve the below scenario.

Assume you are managing a university database that tracks student enrollments in various courses. You have two tables, "Student" and "Enrollment". The goal is to retrieve information about each student's ID, first name, last name, and their enrollment details, including the enrollment ID and the associated course ID.

Hint: Use the inner join to retrieve data.

Code:

```
SELECT s.ID, s.First_Name, s.Last_Name, s.City, s.Age, s.Date_Of_Joining,  
e.SID, e.MARKS, e.DID  
FROM student_data s  
INNER JOIN enrollment e ON s.ID = e.SID;
```

Output:

```
mysql> SELECT s.ID, s.First_Name, s.Last_Name, s.City, s.Age, s.Date_Of_Joining,  
-> e.SID, e.MARKS, e.DID  
-> FROM student_data s  
-> INNER JOIN enrollment e ON s.ID = e.SID;
```

ID	First_Name	Last_Name	City	Age	Date_Of_Joining	SID	MARKS	DID
1	Akash	Kumar	Jaipur	24	2020-03-28	1	99	5007
2	Aaishwarya	Ray	Mumbai	32	2020-05-29	2	66	5007
3	Abhay	Chander	Mumbai	27	2019-08-07	3	76	5010
5	Bishwas	Bora	Ahmedabad	44	2015-02-01	5	26	5002
6	Bimla	Bhatt	Ahmedabad	21	2021-03-21	6	45	5003
7	Brijesh	Kumar	Jaipur	22	2021-01-01	7	81	5004
8	Arjun	Shet	Bangalore	19	2020-12-31	8	31	5004
9	Ramya	Bose	Bangalore	25	2019-09-25	9	28	5001
11	Suhas	Rai	Bangalore	27	2016-05-14	11	56	5002
12	Goutham	Sharma	Ahmedabad	26	2020-07-20	12	79	5005
13	Dilshan	Gupta	Jaipur	23	2014-02-07	13	61	5007
14	Sachin	Acharya	Bangalore	22	2020-01-01	14	30	5009
15	Tanveer	Ahmed	Chennai	23	2019-05-09	15	41	5010
16	Rupali	Gupta	Chennai	21	2020-06-23	16	75	5001
17	Deepika	Verma	Ahmedabad	26	2017-08-22	17	55	5007
19	Zhyn	Jackman	Bangalore	24	2019-06-22	19	71	5004

16 rows in set (0.00 sec)

ChatGPT Exercise

Using ChatGPT generates SQL queries of the below problem.

Scenario 1: Imagine you have tables for students and courses. Use an inner join to

generate a list of all possible student-course combinations, displaying the student name and course name.

We have a "Student" table with the following a

columns:StudentId,FirstName,lastName and

code:

```
CREATE TABLE Student (  
  
Student_Id INT PRIMARY KEY,  
  
First_Name VARCHAR(55) NOT NULL,  
  
Last_Name VARCHAR(55) NOT NULL  
  
);
```

Output:

```
mysql> CREATE TABLE Student (  
-> Student_Id INT PRIMARY KEY,  
-> First_Name VARCHAR(55) NOT NULL,  
-> Last_Name VARCHAR(55) NOT NULL  
-> );  
Query OK, 0 rows affected (0.24 sec)  
  
mysql> describe Student;  
+-----+-----+-----+-----+-----+-----+  
| Field          | Type          | Null | Key | Default | Extra |  
+-----+-----+-----+-----+-----+-----+  
| Student_Id     | int           | NO   | PRI | NULL    |       |  
| First_Name     | varchar(55)   | NO   |     | NULL    |       |  
| Last_Name      | varchar(55)   | NO   |     | NULL    |       |  
+-----+-----+-----+-----+-----+-----+  
3 rows in set (0.00 sec)
```

Code:

```
INSERT INTO Student (Student_Id, First_Name, Last_Name) VALUES
```

```
(1, 'Aarav', 'Patel'),
```

```
(2, 'Vivaan', 'Shah'),
```

```
(3, 'Aditya', 'Mehta'),
```

- (4, 'Vihaan', 'Singh'),
- (5, 'Arjun', 'Gupta'),
- (6, 'Sai', 'Rao'),
- (7, 'Ayaan', 'Iyer'),
- (8, 'Krishna', 'Kumar'),
- (9, 'Ishaan', 'Verma'),
- (10, 'Rohan', 'Joshi'),
- (11, 'Aryan', 'Das'),
- (12, 'Dhruv', 'Reddy'),
- (13, 'Karan', 'Chopra'),
- (14, 'Kabir', 'Jain'),
- (15, 'Aarohi', 'Desai'),
- (16, 'Ananya', 'Malhotra'),
- (17, 'Diya', 'Bhatia'),
- (18, 'Isha', 'Bose'),
- (19, 'Myra', 'Nair'),
- (20, 'Anika', 'Singhal'),
- (21, 'Saanvi', 'Pandey'),
- (22, 'Aadhya', 'Roy'),
- (23, 'Prisha', 'Saxena'),
- (24, 'Riya', 'Bhatt'),
- (25, 'Avni', 'Chatterjee'),
- (26, 'Nisha', 'Ghosh'),

(27, 'Aaradhya', 'Srivastava'),

(28, 'Kiara', 'Kapoor'),

(29, 'Tara', 'Pillai'),

(30, 'Suhana', 'Banerjee');

```
mysql> INSERT INTO Student (Student_Id, First_Name, Last_Name) VALUES
-> (1, 'Aarav', 'Patel'),
-> (2, 'Vivaan', 'Shah'),
-> (3, 'Aditya', 'Mehta'),
-> (4, 'Vihaan', 'Singh'),
-> (5, 'Arjun', 'Gupta'),
-> (6, 'Sai', 'Rao'),
-> (7, 'Ayaan', 'Iyer'),
-> (8, 'Krishna', 'Kumar'),
-> (9, 'Ishaan', 'Verma'),
-> (10, 'Rohan', 'Joshi'),
-> (11, 'Aryan', 'Das'),
-> (12, 'Dhruv', 'Reddy'),
-> (13, 'Karan', 'Chopra'),
-> (14, 'Kabir', 'Jain'),
-> (15, 'Aarohi', 'Desai'),
-> (16, 'Ananya', 'Malhotra'),
-> (17, 'Diya', 'Bhatia'),
-> (18, 'Isha', 'Bose'),
-> (19, 'Myra', 'Nair'),
-> (20, 'Anika', 'Singhal'),
-> (21, 'Saanvi', 'Pandey'),
-> (22, 'Aadhya', 'Roy'),
-> (23, 'Prisha', 'Saxena'),
-> (24, 'Riya', 'Bhatt'),
-> (25, 'Avni', 'Chatterjee'),
-> (26, 'Nisha', 'Ghosh'),
-> (27, 'Aaradhya', 'Srivastava'),
-> (28, 'Kiara', 'Kapoor'),
-> (29, 'Tara', 'Pillai'),
-> (30, 'Suhana', 'Banerjee');
Query OK, 30 rows affected (0.21 sec)
Records: 30  Duplicates: 0  Warnings: 0
```

Output:

```
mysql> select * from Student;
```

Student_Id	First_Name	Last_Name
1	Aarav	Patel
2	Vivaan	Shah
3	Aditya	Mehta
4	Vihaan	Singh
5	Arjun	Gupta
6	Sai	Rao
7	Ayaan	Iyer
8	Krishna	Kumar
9	Ishaan	Verma
10	Rohan	Joshi
11	Aryan	Das
12	Dhruv	Reddy
13	Karan	Chopra
14	Kabir	Jain
15	Aarohi	Desai
16	Ananya	Malhotra
17	Diya	Bhatia
18	Isha	Bose
19	Myra	Nair
20	Anika	Singhal
21	Saanvi	Pandey
22	Aadhya	Roy
23	Prisha	Saxena
24	Riya	Bhatt
25	Avni	Chatterjee
26	Nisha	Ghosh
27	Aaradhya	Srivastava
28	Kiara	Kapoor
29	Tara	Pillai
30	Suhana	Banerjee

```
30 rows in set (0.00 sec)
```

"Course" table with the following a

columns: CourseId, CourseName and

code:

```
CREATE TABLE Course (  
  
Course_Id INT PRIMARY KEY,  
  
Course_Name VARCHAR(100) NOT NULL  
  
);
```

```
mysql> CREATE TABLE Course (  
-> Course_Id INT PRIMARY KEY,  
-> Course_Name VARCHAR(100) NOT NULL  
-> );  
Query OK, 0 rows affected (0.09 sec)  
  
mysql> describe Course;  
+-----+-----+-----+-----+-----+-----+  
| Field      | Type          | Null | Key | Default | Extra |  
+-----+-----+-----+-----+-----+-----+  
| Course_Id  | int           | NO   | PRI | NULL    |       |  
| Course_Name | varchar(100)  | NO   |     | NULL    |       |  
+-----+-----+-----+-----+-----+-----+  
2 rows in set (0.00 sec)
```

INSERT INTO Course (Course_Id, Course_Name) VALUES

(1, 'Mathematics'),

(2, 'Physics'),

(3, 'Chemistry'),

(4, 'Biology'),

(5, 'Computer Science'),

(6, 'English Literature'),

(7, 'History'),

(8, 'Geography'),

(9, 'Political Science'),

(10, 'Economics'),
(11, 'Psychology'),
(12, 'Sociology'),
(13, 'Philosophy'),
(14, 'Art History'),
(15, 'Music'),
(16, 'Theater'),
(17, 'Dance'),
(18, 'Physical Education'),
(19, 'Business Studies'),
(20, 'Accounting'),
(21, 'Marketing'),
(22, 'Finance'),
(23, 'Human Resources'),
(24, 'Management'),
(25, 'Environmental Science'),
(26, 'Astronomy'),
(27, 'Engineering'),
(28, 'Statistics'),
(29, 'Law'),
(30, 'Medicine');

```
mysql> INSERT INTO Course (Course_Id, Course_Name) VALUES
-> (1, 'Mathematics'),
-> (2, 'Physics'),
-> (3, 'Chemistry'),
-> (4, 'Biology'),
-> (5, 'Computer Science'),
-> (6, 'English Literature'),
-> (7, 'History'),
-> (8, 'Geography'),
-> (9, 'Political Science'),
-> (10, 'Economics'),
-> (11, 'Psychology'),
-> (12, 'Sociology'),
-> (13, 'Philosophy'),
-> (14, 'Art History'),
-> (15, 'Music'),
-> (16, 'Theater'),
-> (17, 'Dance'),
-> (18, 'Physical Education'),
-> (19, 'Business Studies'),
-> (20, 'Accounting'),
-> (21, 'Marketing'),
-> (22, 'Finance'),
-> (23, 'Human Resources'),
-> (24, 'Management'),
-> (25, 'Environmental Science'),
-> (26, 'Astronomy'),
-> (27, 'Engineering'),
-> (28, 'Statistics'),
-> (29, 'Law'),
-> (30, 'Medicine');
Query OK, 30 rows affected (0.21 sec)
Records: 30  Duplicates: 0  Warnings: 0
```

Output:

```
mysql> select * from Course;
```

Course_Id	Course_Name
1	Mathematics
2	Physics
3	Chemistry
4	Biology
5	Computer Science
6	English Literature
7	History
8	Geography
9	Political Science
10	Economics
11	Psychology
12	Sociology
13	Philosophy
14	Art History
15	Music
16	Theater
17	Dance
18	Physical Education
19	Business Studies
20	Accounting
21	Marketing
22	Finance
23	Human Resources
24	Management
25	Environmental Science
26	Astronomy
27	Engineering
28	Statistics
29	Law
30	Medicine

```
30 rows in set (0.00 sec)
```

Enrollment table with the following a

columns:EnrollmentID,StudentID(Foreign key),CourseID(Foreign Key).

Code:

```
CREATE TABLE Enrollments (  
    Enrollment_Id INT PRIMARY KEY,  
    Student_Id INT,  
    Course_Id INT,  
    FOREIGN KEY (Student_Id) REFERENCES Student(Student_Id),  
    FOREIGN KEY (Course_Id) REFERENCES Course(Course_Id)  
);
```

```
mysql> CREATE TABLE Enrollments (  
    -> Enrollment_Id INT PRIMARY KEY,  
    -> Student_Id INT,  
    -> Course_Id INT,  
    -> FOREIGN KEY (Student_Id) REFERENCES Student(Student_Id),  
    -> FOREIGN KEY (Course_Id) REFERENCES Course(Course_Id)  
    -> );  
Query OK, 0 rows affected (0.07 sec)  
  
mysql> describe Enrollments;  
+-----+-----+-----+-----+-----+-----+  
| Field          | Type | Null | Key | Default | Extra |  
+-----+-----+-----+-----+-----+-----+  
| Enrollment_Id  | int  | NO   | PRI | NULL    |       |  
| Student_Id     | int  | YES  | MUL | NULL    |       |  
| Course_Id      | int  | YES  | MUL | NULL    |       |  
+-----+-----+-----+-----+-----+-----+  
3 rows in set (0.00 sec)
```

Inserting data:

```
INSERT INTO Enrollments (Enrollment_Id, Student_Id, Course_Id) VALUES
```

```
(1001, 1, 1),
```

```
(1002, 2, 2),
```

```
(1003, 3, 3),
```

```
(1004, 4, 4),
```

(1005, 5, 5),

(1006, 6, 6),

(1007, 7, 7),

(1008, 8, 8),

(1009, 9, 9),

(1010, 10, 10),

(1011, 11, 11),

(1012, 12, 12),

(1013, 13, 13),

(1014, 14, 14),

(1015, 15, 15),

(1016, 16, 16),

(1017, 17, 17),

(1018, 18, 18),

(1019, 19, 19),

(1020, 20, 20),

(1021, 21, 21),

(1022, 22, 22),

(1023, 23, 23),

(1024, 24, 24),

(1025, 25, 25),

(1026, 26, 26),

(1027, 27, 27),

(1028, 28, 28),

(1029, 29, 29),

(1030, 30, 30);

```
mysql> INSERT INTO Enrollments (Enrollment_Id, Student_Id, Course_Id) VALUES
-> (1001, 1, 1),
-> (1002, 2, 2),
-> (1003, 3, 3),
-> (1004, 4, 4),
-> (1005, 5, 5),
-> (1006, 6, 6),
-> (1007, 7, 7),
-> (1008, 8, 8),
-> (1009, 9, 9),
-> (1010, 10, 10),
-> (1011, 11, 11),
-> (1012, 12, 12),
-> (1013, 13, 13),
-> (1014, 14, 14),
-> (1015, 15, 15),
-> (1016, 16, 16),
-> (1017, 17, 17),
-> (1018, 18, 18),
-> (1019, 19, 19),
-> (1020, 20, 20),
-> (1021, 21, 21),
-> (1022, 22, 22),
-> (1023, 23, 23),
-> (1024, 24, 24),
-> (1025, 25, 25),
-> (1026, 26, 26),
-> (1027, 27, 27),
-> (1028, 28, 28),
-> (1029, 29, 29),
-> (1030, 30, 30);
Query OK, 30 rows affected (0.01 sec)
Records: 30 Duplicates: 0 Warnings: 0
```

Output:

```
mysql> select * from Enrollments;
```

Enrollment_Id	Student_Id	Course_Id
1001	1	1
1002	2	2
1003	3	3
1004	4	4
1005	5	5
1006	6	6
1007	7	7
1008	8	8
1009	9	9
1010	10	10
1011	11	11
1012	12	12
1013	13	13
1014	14	14
1015	15	15
1016	16	16
1017	17	17
1018	18	18
1019	19	19
1020	20	20
1021	21	21
1022	22	22
1023	23	23
1024	24	24
1025	25	25
1026	26	26
1027	27	27
1028	28	28
1029	29	29
1030	30	30

30 rows in set (0.00 sec)

You want to use an inner join to generate a list of all possible student-course combinations. Generate

the ChatGPT prompt for the above scenario.

Code:

```
SELECT
```

```
s.Student_Id, s.First_Name, s.Last_Name,
```

```
c.Course_Id, c.Course_Name
```

```
e.Enrollment_Id, e.Student_Id, e.Course_Id
```

```
FROM
```

```
Enrollments e
```

```
INNER JOIN
```

```
Student s ON e.Student_Id = s.Student_Id
```

```
INNER JOIN
```

```
Course c ON e.Course_Id = c.Course_Id;
```



```
mysql> SELECT
-> s.Student_Id,
-> s.First_Name,
-> s.Last_Name,
-> c.Course_Id,
-> c.Course_Name
-> FROM
-> Enrollments e
-> INNER JOIN
-> Student s ON e.Student_Id = s.Student_Id
-> INNER JOIN
-> Course c ON e.Course_Id = c.Course_Id;
```

Student_Id	First_Name	Last_Name	Course_Id	Course_Name
1	Aarav	Patel	1	Mathematics
2	Vivaan	Shah	2	Physics
3	Aditya	Mehta	3	Chemistry
4	Vihaan	Singh	4	Biology
5	Arjun	Gupta	5	Computer Science
6	Sai	Rao	6	English Literature
7	Ayaan	Iyer	7	History
8	Krishna	Kumar	8	Geography
9	Ishaan	Verma	9	Political Science
10	Rohan	Joshi	10	Economics
11	Aryan	Das	11	Psychology
12	Dhruv	Reddy	12	Sociology
13	Karan	Chopra	13	Philosophy
14	Kabir	Jain	14	Art History
15	Aarohi	Desai	15	Music
16	Ananya	Malhotra	16	Theater
17	Diya	Bhatia	17	Dance
18	Isha	Bose	18	Physical Education
19	Myra	Nair	19	Business Studies
20	Anika	Singhal	20	Accounting
21	Saanvi	Pandey	21	Marketing
22	Aadhya	Roy	22	Finance
23	Prisha	Saxena	23	Human Resources
24	Riya	Bhatt	24	Management
25	Avni	Chatterjee	25	Environmental Science
26	Nisha	Ghosh	26	Astronomy
27	Aaradhya	Srivastava	27	Engineering
28	Kiara	Kapoor	28	Statistics
29	Tara	Pillai	29	Law
30	Suhana	Banerjee	30	Medicine

30 rows in set (0.00 sec)

Code:

SELECT

s.Student_Id,

s.First_Name,

s.Last_Name,

c.Course_Id,

c.Course_Name,

e.Enrollment_Id

FROM Enrollments e

INNER JOIN Student s ON e.Student_Id = s.Student_Id

INNER JOIN Course c ON e.Course_Id = c.Course_Id;

```
mysql> SELECT
-> s.Student_Id,
-> s.First_Name,
-> s.Last_Name,
-> c.Course_Id,
-> c.Course_Name,
-> e.Enrollment_Id
-> FROM Enrollments e
-> INNER JOIN Student s ON e.Student_Id = s.Student_Id
-> INNER JOIN Course c ON e.Course_Id = c.Course_Id;
```

Student_Id	First_Name	Last_Name	Course_Id	Course_Name	Enrollment_Id
1	Aarav	Patel	1	Mathematics	1001
2	Vivaan	Shah	2	Physics	1002
3	Aditya	Mehta	3	Chemistry	1003
4	Vihaan	Singh	4	Biology	1004
5	Arjun	Gupta	5	Computer Science	1005
6	Sai	Rao	6	English Literature	1006
7	Ayaan	Iyer	7	History	1007
8	Krishna	Kumar	8	Geography	1008
9	Ishaan	Verma	9	Political Science	1009
10	Rohan	Josh	10	Economics	1010
11	Aryan	Das	11	Psychology	1011
12	Dhruv	Reddy	12	Sociology	1012
13	Karan	Chopra	13	Philosophy	1013
14	Kabir	Jain	14	Art History	1014
15	Aarohi	Desai	15	Music	1015
16	Ananya	Malhotra	16	Theater	1016
17	Diya	Bhatia	17	Dance	1017
18	Isha	Bose	18	Physical Education	1018
19	Myra	Nair	19	Business Studies	1019
20	Anika	Singhal	20	Accounting	1020
21	Saanvi	Pandey	21	Marketing	1021
22	Aadhya	Roy	22	Finance	1022
23	Prisha	Saxena	23	Human Resources	1023
24	Riya	Bhatt	24	Management	1024
25	Avni	Chatterjee	25	Environmental Science	1025
26	Nisha	Ghosh	26	Astronomy	1026
27	Aaradhya	Srivastava	27	Engineering	1027
28	Kiara	Kapoor	28	Statistics	1028
29	Tara	Pillai	29	Law	1029
30	Suhana	Banerjee	30	Medicine	1030

30 rows in set (0.00 sec)

THANK YOU, Sir