

Lab10_ANP_C7281_Right_join

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ANP-C7281

Lab10_ANP_C7281_Right_join

Lab: Use the same student management system Database and table from the previous

lab. Perform the following commands on the table Student and Enrollment.

1. Assume a university where students can enroll in various courses. Now, write down a FULL outer JOIN query to retrieve the details.

2. Assume a university where students can enroll in various courses. Now, write down a Natural JOIN query to retrieve the details.

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: We have an "inventory" Table with the following

columns: ProductID, ProductName, StockQuantity, and "sales" Table with the following columns: SaleID, ProductID(foreign key), SaleQuantity, SaleDate.

Now you need to use full outer join to generate a report that includes all products in the inventory and their sales, displaying NULL values for products that haven't been sold. Generate the chatGPT

prompt for the above scenario.

SOLUTION:

1. Assume a university where students can enroll in various courses. Now, write down a

FULL outer JOIN query to retrieve the details.

Code:

SELECT

```

Student.StudentId,
Student.StudentName,
Student.BirthDate,
Student.Email AS Email,
Enrollment.EnrollmentId,
Enrollment.StudentId AS EnrollmentStudentId,
Enrollment.CourseId,
Enrollment.EnrollmentDate,
Enrollment.CourseName
FROM
Student
LEFT JOIN
Enrollment
ON
Student.StudentId = Enrollment.StudentId

```

Output:

```
mysql> SELECT
-> Student.StudentId,
-> Student.StudentName,
-> Student.BirthDate,
-> Student.Email AS Email,
-> Enrollment.EnrollmentId,
-> Enrollment.StudentId AS EnrollmentStudentId,
-> Enrollment.EnrollmentDate,
-> Enrollment.CourseName
-> FROM
-> Student
-> LEFT JOIN
-> Enrollment
-> ON
-> Student.StudentId = Enrollment.StudentId
-> ;
```

StudentId	StudentName	BirthDate	Email	EnrollmentId	EnrollmentStudentId	CourseId	EnrollmentDate	CourseName
1	Aarav Sharma	2000-01-15	aarav.sharma@example.com	1	1	101	2021-01-15	NULL
1	Aarav Sharma	2000-01-15	aarav.sharma@example.com	51	1	101	2021-01-15	Mathematics
2	Vivaan Singh	2001-03-22	vivaan.singh@example.com	2	2	102	2021-02-22	NULL
2	Vivaan Singh	2001-03-22	vivaan.singh@example.com	52	2	102	2021-02-22	Physics
3	Aditya Gupta	2002-07-10	aditya.gupta@example.com	3	3	103	2021-03-10	NULL
3	Aditya Gupta	2002-07-10	aditya.gupta@example.com	53	3	103	2021-03-10	Chemistry
4	Vihaan Kumar	2000-11-05	vihaan.kumar@example.com	4	4	104	2021-04-05	NULL
4	Vihaan Kumar	2000-11-05	vihaan.kumar@example.com	54	4	104	2021-04-05	Biology
5	Arjun Patel	2003-02-18	arjun.patel@example.com	5	5	105	2021-05-18	NULL
5	Arjun Patel	2003-02-18	arjun.patel@example.com	55	5	105	2021-05-18	Computer Science
6	Sai Reddy	2001-06-30	sai.reddy@example.com	6	6	106	2021-06-30	NULL
6	Sai Reddy	2001-06-30	sai.reddy@example.com	56	6	106	2021-06-30	History
7	Reyansh Nair	2002-09-12	reyansh.nair@example.com	7	7	107	2021-07-12	NULL
7	Reyansh Nair	2002-09-12	reyansh.nair@example.com	57	7	107	2021-07-12	Geography
8	Ayaan Iyer	2000-12-25	ayaan.iyer@example.com	8	8	108	2021-08-25	NULL
8	Ayaan Iyer	2000-12-25	ayaan.iyer@example.com	58	8	108	2021-08-25	Political Science
9	Krishna Rao	2001-04-19	krishna.rao@example.com	9	9	109	2021-09-19	NULL
9	Krishna Rao	2001-04-19	krishna.rao@example.com	59	9	109	2021-09-19	Economics
10	Ishaan Mehta	2002-08-03	ishaan.mehta@example.com	10	10	110	2021-10-03	NULL
10	Ishaan Mehta	2002-08-03	ishaan.mehta@example.com	60	10	110	2021-10-03	English Literature
11	Kabir Joshi	2000-10-14	kabir.joshi@example.com	11	11	111	2021-11-14	NULL
11	Kabir Joshi	2000-10-14	kabir.joshi@example.com	61	11	111	2021-11-14	Philosophy
12	Arnav Das	2001-01-29	arnav.das@example.com	12	12	112	2021-12-29	NULL
12	Arnav Das	2001-01-29	arnav.das@example.com	62	12	112	2021-12-29	Sociology
13	Atharv Chatterjee	2002-05-07	atharv.chatterjee@example.com	13	13	113	2022-01-07	NULL
13	Atharv Chatterjee	2002-05-07	atharv.chatterjee@example.com	63	13	113	2022-01-07	Psychology
14	Dhruv Mukherjee	2003-09-22	dhruv.mukherjee@example.com	14	14	114	2022-02-22	NULL
14	Dhruv Mukherjee	2003-09-22	dhruv.mukherjee@example.com	64	14	114	2022-02-22	Statistics
15	Aarush Roy	2000-02-10	aarush.roy@example.com	15	15	115	2022-03-10	NULL
15	Aarush Roy	2000-02-10	aarush.roy@example.com	65	15	115	2022-03-10	Business Administration
16	Rudra Bhattacharya	2001-03-18	rudra.bhattacharya@example.com	16	16	116	2022-04-10	NULL
16	Rudra Bhattacharya	2001-03-18	rudra.bhattacharya@example.com	66	16	116	2022-04-10	Marketing
17	Advait Banerjee	2002-06-25	advait.banerjee@example.com	17	17	117	2022-05-17	NULL
17	Advait Banerjee	2002-06-25	advait.banerjee@example.com	67	17	117	2022-05-17	Finance
18	Yug Verma	2003-08-17	yug.verma@example.com	18	18	118	2022-06-12	NULL
18	Yug Verma	2003-08-17	yug.verma@example.com	68	18	118	2022-06-12	Accounting
19	Shiv Kapoor	2000-11-28	shiv.kapoor@example.com	19	19	119	2022-07-14	NULL
19	Shiv Kapoor	2000-11-28	shiv.kapoor@example.com	69	19	119	2022-07-14	Management

19	Shiv Kapoor	2000-11-28	shiv.kapoor@example.com	19	19	119	2022-07-14	NULL
19	Shiv Kapoor	2000-11-28	shiv.kapoor@example.com	69	19	119	2022-07-14	Management
20	Aarav Jain	2001-02-15	aarav.jain@example.com	20	20	120	2022-08-28	NULL
20	Aarav Jain	2001-02-15	aarav.jain@example.com	70	20	120	2022-08-28	Engineering
21	Vivaan Singh	2002-04-22	vivaan.singh@example.com	21	21	121	2022-09-15	NULL
21	Vivaan Singh	2002-04-22	vivaan.singh@example.com	71	21	121	2022-09-15	Medicine
22	Aditya Gupta	2003-07-10	aditya.gupta@example.com	22	22	122	2022-10-22	NULL
22	Aditya Gupta	2003-07-10	aditya.gupta@example.com	72	22	122	2022-10-22	Law
23	Vihaan Kumar	2000-09-05	vihaan.kumar@example.com	23	23	123	2022-11-10	NULL
23	Vihaan Kumar	2000-09-05	vihaan.kumar@example.com	73	23	123	2022-11-10	Architecture
24	Arjun Patel	2001-12-18	arjun.patel@example.com	24	24	124	2022-12-05	NULL
24	Arjun Patel	2001-12-18	arjun.patel@example.com	74	24	124	2022-12-05	Environmental Science
25	Sai Reddy	2002-03-30	sai.reddy@example.com	25	25	125	2023-01-18	NULL
25	Sai Reddy	2002-03-30	sai.reddy@example.com	75	25	125	2023-01-18	Journalism
26	Reyansh Nair	2003-06-12	reyansh.nair@example.com	26	26	126	2023-02-27	NULL
26	Reyansh Nair	2003-06-12	reyansh.nair@example.com	76	26	126	2023-02-27	Mass Communication
27	Ayaan Iyer	2000-07-25	ayaan.iyer@example.com	27	27	127	2023-03-30	NULL
27	Ayaan Iyer	2000-07-25	ayaan.iyer@example.com	77	27	127	2023-03-30	Fine Arts
28	Krishna Rao	2001-10-19	krishna.rao@example.com	28	28	128	2023-04-12	NULL
28	Krishna Rao	2001-10-19	krishna.rao@example.com	78	28	128	2023-04-12	Performing Arts
29	Ishaan Mehta	2002-01-03	ishaan.mehta@example.com	29	29	129	2023-05-19	NULL
29	Ishaan Mehta	2002-01-03	ishaan.mehta@example.com	79	29	129	2023-05-19	Graphic Design
30	Kabir Joshi	2003-04-14	kabir.joshi@example.com	30	30	130	2023-06-25	NULL
30	Kabir Joshi	2003-04-14	kabir.joshi@example.com	80	30	130	2023-06-25	Animation
31	Arnav Das	2000-08-29	arnav.das@example.com	31	31	131	2023-07-10	NULL
31	Arnav Das	2000-08-29	arnav.das@example.com	81	31	131	2023-07-10	Fashion Design
32	Atharv Chatterjee	2001-05-07	atharv.chatterjee@example.com	32	32	132	2023-08-05	NULL
32	Atharv Chatterjee	2001-05-07	atharv.chatterjee@example.com	82	32	132	2023-08-05	Interior Design
33	Dhyyey Mukherjee	2002-09-22	dhyyey.mukherjee@example.com	33	33	133	2023-09-22	NULL
33	Dhyyey Mukherjee	2002-09-22	dhyyey.mukherjee@example.com	83	33	133	2023-09-22	Hotel Management
34	Aarush Roy	2003-02-10	aarush.roy@example.com	34	34	134	2023-10-17	NULL
34	Aarush Roy	2003-02-10	aarush.roy@example.com	84	34	134	2023-10-17	Tourism
35	Rudra Bhattacharya	2000-06-18	rudra.bhattacharya@example.com	35	35	135	2023-11-14	NULL
35	Rudra Bhattacharya	2000-06-18	rudra.bhattacharya@example.com	85	35	135	2023-11-14	Culinary Arts
36	Advait Banerjee	2001-11-25	advait.banerjee@example.com	36	36	136	2023-12-29	NULL
36	Advait Banerjee	2001-11-25	advait.banerjee@example.com	86	36	136	2023-12-29	Agriculture
37	Yug Verma	2002-08-17	yug.verma@example.com	37	37	137	2024-01-07	NULL
37	Yug Verma	2002-08-17	yug.verma@example.com	87	37	137	2024-01-07	Horticulture
38	Shiv Kapoor	2003-11-28	shiv.kapoor@example.com	38	38	138	2024-02-22	NULL
38	Shiv Kapoor	2003-11-28	shiv.kapoor@example.com	88	38	138	2024-02-22	Forestry
39	Aarav Jain	2000-02-15	aarav.jain@example.com	39	39	139	2024-03-10	NULL
39	Aarav Jain	2000-02-15	aarav.jain@example.com	89	39	139	2024-03-10	Veterinary Science
40	Vivaan Singh	2001-04-22	vivaan.singh@example.com	40	40	140	2024-04-10	NULL
40	Vivaan Singh	2001-04-22	vivaan.singh@example.com	90	40	140	2024-04-10	Zoology
41	Aditya Gupta	2002-07-10	aditya.gupta@example.com	41	41	141	2024-05-17	NULL
41	Aditya Gupta	2002-07-10	aditya.gupta@example.com	91	41	141	2024-05-17	Botany
42	Vihaan Kumar	2003-09-05	vihaan.kumar@example.com	42	42	142	2024-06-12	NULL
42	Vihaan Kumar	2003-09-05	vihaan.kumar@example.com	92	42	142	2024-06-12	Microbiology
43	Arjun Patel	2000-12-18	arjun.patel@example.com	43	43	143	2024-07-14	NULL
43	Arjun Patel	2000-12-18	arjun.patel@example.com	93	43	143	2024-07-14	Biotechnology
44	Sai Reddy	2001-03-30	sai.reddy@example.com	44	44	144	2024-08-28	NULL
44	Sai Reddy	2001-03-30	sai.reddy@example.com	94	44	144	2024-08-28	Genetics
45	Reyansh Nair	2002-06-12	reyansh.nair@example.com	45	45	145	2024-09-15	NULL
45	Reyansh Nair	2002-06-12	reyansh.nair@example.com	95	45	145	2024-09-15	Marine Biology
46	Ayaan Iyer	2003-07-25	ayaan.iyer@example.com	46	46	146	2024-10-22	NULL
46	Ayaan Iyer	2003-07-25	ayaan.iyer@example.com	96	46	146	2024-10-22	Astronomy

46	Ayaan Iyer	2003-07-25	ayaan.iyer@example.com	46	46	146	2024-10-22	NULL
46	Ayaan Iyer	2003-07-25	ayaan.iyer@example.com	96	46	146	2024-10-22	Astronomy
47	Krishna Rao	2000-10-19	krishna.rao@example.com	47	47	147	2024-11-10	NULL
47	Krishna Rao	2000-10-19	krishna.rao@example.com	97	47	147	2024-11-10	Astrophysics
48	Ishaan Mehta	2001-01-03	ishaan.mehta@example.com	48	48	148	2024-12-05	NULL
48	Ishaan Mehta	2001-01-03	ishaan.mehta@example.com	98	48	148	2024-12-05	Geology
49	Kabir Joshi	2002-04-14	kabir.joshi@example.com	49	49	149	2025-01-18	NULL
49	Kabir Joshi	2002-04-14	kabir.joshi@example.com	99	49	149	2025-01-18	Meteorology
50	Arnav Das	2003-08-29	arnav.das@example.com	50	50	150	2025-02-27	NULL
50	Arnav Das	2003-08-29	arnav.das@example.com	100	50	150	2025-02-27	Electrical
51	Atharv Chatterjee	2000-05-07	atharv.chatterjee@example.com	NULL	NULL	NULL	NULL	NULL
52	Dhyyey Mukherjee	2001-09-22	dhyyey.mukherjee@example.com	NULL	NULL	NULL	NULL	NULL
53	Aarush Roy	2002-02-10	aarush.roy@example.com	NULL	NULL	NULL	NULL	NULL
54	Rudra Bhattacharya	2000-06-18	rudra.bhattacharya@example.com	NULL	NULL	NULL	NULL	NULL
55	Advait Banerjee	2001-11-25	advait.banerjee@example.com	NULL	NULL	NULL	NULL	NULL
56	Yug Verma	2001-08-17	yug.verma@example.com	NULL	NULL	NULL	NULL	NULL

106 rows in set (0.00 sec)

```

Code:

SELECT
Student.StudentId,
Student.StudentName,
Student.BirthDate,
Student.Email AS Email,
Enrollment.EnrollmentId,
Enrollment.StudentId AS EnrollmentStudentId,
Enrollment.CourseId,
Enrollment.EnrollmentDate,
Enrollment.CourseName
FROM

```

Student

RIGHT JOIN

Enrollment

ON

Student.StudentId = Enrollment.StudentId;

Output:

```
mysql> SELECT
-> Student.StudentId,
-> Student.StudentName,
-> Student.BirthDate,
-> Student.Email AS Email,
-> Enrollment.EnrollmentId,
-> Enrollment.StudentId AS EnrollmentStudentId,
-> Enrollment.CourseId,
-> Enrollment.EnrollmentDate,
-> Enrollment.CourseName
-> FROM
-> Student
-> RIGHT JOIN
-> Enrollment
-> ON
-> Student.StudentId = Enrollment.StudentId;
```

StudentId	StudentName	BirthDate	Email	EnrollmentId	EnrollmentStudentId	CourseId	EnrollmentDate	CourseName
1	Aarav Sharma	2000-01-15	aarav.sharma@example.com	1	1	101	2021-01-15	NULL
2	Vivaan Singh	2001-03-22	vivaan.singh@example.com	2	102	2021-02-22	NULL	
3	Aditya Gupta	2002-07-10	aditya.gupta@example.com	3	103	2021-03-10	NULL	
4	Vihaan Kumar	2000-11-05	vihaan.kumar@example.com	4	104	2021-04-05	NULL	
5	Arjun Patel	2003-02-18	arjun.patel@example.com	5	105	2021-05-18	NULL	
6	Sai Reddy	2001-06-30	sai.reddy@example.com	6	106	2021-06-30	NULL	
7	Reyansh Nair	2002-09-12	reyansh.nair@example.com	7	107	2021-07-12	NULL	
8	Ayaan Iyer	2000-12-25	ayaan.iyer@example.com	8	108	2021-08-25	NULL	
9	Krishna Rao	2001-04-19	krishna.rao@example.com	9	109	2021-09-19	NULL	
10	Ishaan Mehta	2002-08-03	ishaan.mehta@example.com	10	110	2021-10-03	NULL	
11	Kabir Joshi	2000-10-14	kabir.joshi@example.com	11	111	2021-11-14	NULL	
12	Arnab Das	2001-01-29	arnav.das@example.com	12	112	2021-12-29	NULL	
13	Atharv Chatterjee	2002-05-07	atharv.chatterjee@example.com	13	113	2022-01-07	NULL	
14	Dhwey Mukherjee	2003-09-22	dhwey.mukherjee@example.com	14	114	2022-02-22	NULL	
15	Aarush Roy	2000-02-10	aarush.roy@example.com	15	115	2022-03-10	NULL	
16	Rudra Bhattacharya	2001-03-18	rudra.bhattacharya@example.com	16	116	2022-04-10	NULL	
17	Advait Banerjee	2002-06-25	advait.banerjee@example.com	17	117	2022-05-17	NULL	
18	Yug Verma	2003-08-17	yug.verma@example.com	18	118	2022-06-12	NULL	
19	Shiv Kapoor	2000-11-28	shiv.kapoor@example.com	19	119	2022-07-14	NULL	
20	Aarav Jain	2001-02-15	aarav.jain@example.com	20	120	2022-08-28	NULL	
21	Vivaan Singh	2002-04-22	vivaan.singh@example.com	21	121	2022-09-15	NULL	
22	Aditya Gupta	2003-07-10	aditya.gupta@example.com	22	122	2022-10-22	NULL	
23	Vihaan Kumar	2000-09-05	vihaan.kumar@example.com	23	123	2022-11-10	NULL	
24	Arjun Patel	2001-12-18	arjun.patel@example.com	24	124	2022-12-05	NULL	
25	Sai Reddy	2002-03-30	sai.reddy@example.com	25	125	2023-01-18	NULL	
26	Reyansh Nair	2003-06-12	reyansh.nair@example.com	26	126	2023-02-27	NULL	
27	Ayaan Iyer	2000-07-25	ayaan.iyer@example.com	27	127	2023-03-30	NULL	
28	Krishna Rao	2001-10-19	krishna.rao@example.com	28	128	2023-04-12	NULL	
29	Ishaan Mehta	2002-01-03	ishaan.mehta@example.com	29	129	2023-05-19	NULL	
30	Kabir Joshi	2003-04-14	kabir.joshi@example.com	30	130	2023-06-25	NULL	
31	Arnab Das	2000-08-29	arnav.das@example.com	31	131	2023-07-10	NULL	
32	Atharv Chatterjee	2001-05-07	atharv.chatterjee@example.com	32	132	2023-08-05	NULL	
33	Dhwey Mukherjee	2002-09-22	dhwey.mukherjee@example.com	33	133	2023-09-22	NULL	
34	Aarush Roy	2003-02-10	aarush.roy@example.com	34	134	2023-10-17	NULL	
35	Rudra Bhattacharya	2000-06-18	rudra.bhattacharya@example.com	35	135	2023-11-14	NULL	

36	Advait Banerjee	2001-11-25	advait.banerjee@example.com	36	136	2023-12-29	NULL	
37	Yug Verma	2002-08-17	yug.verma@example.com	37	137	2024-01-07	NULL	
38	Shiv Kapoor	2003-11-28	shiv.kapoor@example.com	38	138	2024-02-22	NULL	
39	Aarav Jain	2000-02-15	aarav.jain@example.com	39	139	2024-03-10	NULL	
40	Vivaan Singh	2001-04-22	vivaan.singh@example.com	40	140	2024-04-10	NULL	
41	Aditya Gupta	2002-07-10	aditya.gupta@example.com	41	141	2024-05-17	NULL	
42	Vihaan Kumar	2003-09-05	vihaan.kumar@example.com	42	142	2024-06-12	NULL	
43	Arjun Patel	2000-12-18	arjun.patel@example.com	43	143	2024-07-14	NULL	
44	Sai Reddy	2001-03-30	sai.reddy@example.com	44	144	2024-08-28	NULL	
45	Reyansh Nair	2002-06-12	reyansh.nair@example.com	45	145	2024-09-15	NULL	
46	Ayaan Iyer	2003-07-25	ayaan.iyer@example.com	46	146	2024-10-22	NULL	
47	Krishna Rao	2000-10-19	krishna.rao@example.com	47	147	2024-11-10	NULL	
48	Ishaan Mehta	2001-01-03	ishaan.mehta@example.com	48	148	2024-12-05	NULL	
49	Kabir Joshi	2002-04-14	kabir.joshi@example.com	49	149	2025-01-18	NULL	
50	Arnab Das	2003-08-29	arnav.das@example.com	50	150	2025-02-27	NULL	
1	Aarav Sharma	2000-01-15	aarav.sharma@example.com	51	101	2021-01-15	Mathematics	
2	Vivaan Singh	2001-03-22	vivaan.singh@example.com	52	102	2021-02-22	Physics	
3	Aditya Gupta	2002-07-10	aditya.gupta@example.com	53	103	2021-03-10	Chemistry	
4	Vihaan Kumar	2000-11-05	vihaan.kumar@example.com	54	104	2021-04-05	Biology	
5	Arjun Patel	2003-02-18	arjun.patel@example.com	55	105	2021-05-18	Computer Science	
6	Sai Reddy	2001-06-30	sai.reddy@example.com	56	106	2021-06-30	History	
7	Reyansh Nair	2002-09-12	reyansh.nair@example.com	57	107	2021-07-12	Geography	
8	Ayaan Iyer	2000-12-25	ayaan.iyer@example.com	58	108	2021-08-25	Political Science	
9	Krishna Rao	2001-04-19	krishna.rao@example.com	59	109	2021-09-19	Economics	
10	Ishaan Mehta	2002-08-03	ishaan.mehta@example.com	60	110	2021-10-03	English Literature	
11	Kabir Joshi	2000-10-14	kabir.joshi@example.com	61	111	2021-11-14	Philosophy	
12	Arnab Das	2001-01-29	arnav.das@example.com	62	112	2021-12-29	Sociology	
13	Atharv Chatterjee	2002-05-07	atharv.chatterjee@example.com	63	113	2022-01-07	Psychology	
14	Dhwey Mukherjee	2003-09-22	dhwey.mukherjee@example.com	64	114	2022-02-22	Statistics	
15	Aarush Roy	2000-02-10	aarush.roy@example.com	65	115	2022-03-10	Business Administration	
16	Rudra Bhattacharya	2001-03-18	rudra.bhattacharya@example.com	66	116	2022-04-10	Marketing	
17	Advait Banerjee	2002-06-25	advait.banerjee@example.com	67	117	2022-05-17	Finance	
18	Yug Verma	2003-08-17	yug.verma@example.com	68	118	2022-06-12	Accounting	
19	Shiv Kapoor	2000-11-28	shiv.kapoor@example.com	69	119	2022-07-14	Management	
20	Aarav Jain	2001-02-15	aarav.jain@example.com	70	120	2022-08-28	Engineering	
21	Vivaan Singh	2002-04-22	vivaan.singh@example.com	71	121	2022-09-15	Medicine	
22	Aditya Gupta	2003-07-10	aditya.gupta@example.com	72	122	2022-10-22	Law	
23	Vihaan Kumar	2000-09-05	vihaan.kumar@example.com	73	123	2022-11-10	Architecture	
24	Arjun Patel	2001-12-18	arjun.patel@example.com	74	124	2022-12-05	Environmental Science	
25	Sai Reddy	2002-03-30	sai.reddy@example.com	75	125	2023-01-18	Journalism	
26	Reyansh Nair	2003-06-12	reyansh.nair@example.com	76	126	2023-02-27	Mass Communication	
27	Ayaan Iyer	2000-07-25	ayaan.iyer@example.com	77	127	2023-03-30	Fine Arts	
28	Krishna Rao	2001-10-19	krishna.rao@example.com	78	128	2023-04-12	Performing Arts	
29	Ishaan Mehta	2002-01-03	ishaan.mehta@example.com	79	129	2023-05-19	Graphic Design	
30	Kabir Joshi	2003-04-14	kabir.joshi@example.com	80	130	2023-06-25	Animation	
31	Arnab Das	2000-08-29	arnav.das@example.com	81	131	2023-07-10	Fashion Design	
32	Atharv Chatterjee	2001-05-07	atharv.chatterjee@example.com	82	132	2023-08-05	Interior Design	
33	Dhwey Mukherjee	2002-09-22	dhwey.mukherjee@example.com	83	133	2023-09-22	Hotel Management	
34	Aarush Roy	2003-02-10	aarush.roy@example.com	84	134	2023-10-17	Tourism	
35	Rudra Bhattacharya	2000-06-18	rudra.bhattacharya@example.com	85	135	2023-11-14	Culinary Arts	
36	Advait Banerjee	2001-11-25	advait.banerjee@example.com	86	136	2023-12-29	Agriculture	
37	Yug Verma	2002-08-17	yug.verma@example.com	87	137	2024-01-07	Horticulture	
38	Shiv Kapoor	2003-11-28	shiv.kapoor@example.com	88	138	2024-02-22	Forestry	
39	Aarav Jain	2000-02-15	aarav.jain@example.com	89	139	2024-03-10	Veterinary Science	
40	Vivaan Singh	2001-04-22	vivaan.singh@example.com	90	140	2024-04-10	Zoology	
41	Aditya Gupta	2002-07-10	aditya.gupta@example.com	91	141	2024-05-17	Botany	
42	Vihaan Kumar	2003-09-05	vihaan.kumar@example.com	92	142	2024-06-12	Microbiology	

41	Aditya Gupta	2002-07-10	aditya.gupta@example.com	91	41	141	2024-05-17	Botany
42	Vihaan Kumar	2003-09-05	vihaan.kumar@example.com	92	42	142	2024-06-12	Microbiology
43	Arjun Patel	2000-12-18	arjun.patel@example.com	93	43	143	2024-07-14	Biotechnology
44	Sai Reddy	2001-03-30	sai.reddy@example.com	94	44	144	2024-08-28	Genetics
45	Reyansh Nair	2002-06-12	reyansh.nair@example.com	95	45	145	2024-09-15	Marine Biology
46	Ayaan Iyer	2003-07-25	ayaan.iyer@example.com	96	46	146	2024-10-22	Astronomy
47	Krishna Rao	2000-10-19	krishna.rao@example.com	97	47	147	2024-11-10	Astrophysics
48	Ishaan Mehta	2001-01-03	ishaan.mehta@example.com	98	48	148	2024-12-05	Geology
49	Kabir Joshi	2002-04-14	kabir.joshi@example.com	99	49	149	2025-01-18	Meteorology
50	Arnav Das	2003-08-29	arnav.das@example.com	100	50	150	2025-02-27	Electrical

100 rows in set (0.00 sec)

2. Assume a university where students can enroll in various courses. Now, write down a Natural JOIN query to retrieve the details.

Code:

SELECT

Student.StudentId,

Student.StudentName,

Student.BirthDate,

Student.Email,

Enrollment.EnrollmentId,

Enrollment.CourseId,

Enrollment.EnrollmentDate,

Enrollment.CourseName

FROM

Student

NATURAL JOIN

Enrollment;

Output:

```
mysql> SELECT
-> Student.StudentId,
-> Student.StudentName,
-> Student.BirthDate,
-> Student.Email,
-> Enrollment.EnrollmentId,
-> Enrollment.CourseId,
-> Enrollment.EnrollmentDate,
-> Enrollment.CourseName
-> FROM
-> Student
-> NATURAL JOIN
-> Enrollment;
```

StudentId	StudentName	BirthDate	Email	EnrollmentId	CourseId	EnrollmentDate	CourseName
1	Aarav Sharma	2000-01-15	aarav.sharma@example.com	1	101	2021-01-15	NULL
1	Aarav Sharma	2000-01-15	aarav.sharma@example.com	51	101	2021-01-15	Mathematics
2	Vivaan Singh	2001-03-22	vivaan.singh@example.com	2	102	2021-02-22	NULL
2	Vivaan Singh	2001-03-22	vivaan.singh@example.com	52	102	2021-02-22	Physics
3	Aditya Gupta	2002-07-10	aditya.gupta@example.com	3	103	2021-03-10	NULL
3	Aditya Gupta	2002-07-10	aditya.gupta@example.com	53	103	2021-03-10	Chemistry
4	Vihaan Kumar	2000-11-05	vihaan.kumar@example.com	4	104	2021-04-05	NULL
4	Vihaan Kumar	2000-11-05	vihaan.kumar@example.com	54	104	2021-04-05	Biology
5	Arjun Patel	2003-02-18	arjun.patel@example.com	5	105	2021-05-18	NULL
5	Arjun Patel	2003-02-18	arjun.patel@example.com	55	105	2021-05-18	Computer Science
6	Sai Reddy	2001-06-30	sai.reddy@example.com	6	106	2021-06-30	NULL
6	Sai Reddy	2001-06-30	sai.reddy@example.com	56	106	2021-06-30	History
7	Reyansh Nair	2002-09-12	reyansh.nair@example.com	7	107	2021-07-12	NULL
7	Reyansh Nair	2002-09-12	reyansh.nair@example.com	57	107	2021-07-12	Geography
8	Ayaan Iyer	2000-12-25	ayaan.iyer@example.com	8	108	2021-08-25	NULL
8	Ayaan Iyer	2000-12-25	ayaan.iyer@example.com	58	108	2021-08-25	Political Science
9	Krishna Rao	2001-04-19	krishna.rao@example.com	9	109	2021-09-19	NULL
9	Krishna Rao	2001-04-19	krishna.rao@example.com	59	109	2021-09-19	Economics
10	Ishaan Mehta	2002-08-03	ishaan.mehta@example.com	10	110	2021-10-03	NULL
10	Ishaan Mehta	2002-08-03	ishaan.mehta@example.com	60	110	2021-10-03	English Literature
11	Kabir Joshi	2000-10-14	kabir.joshi@example.com	11	111	2021-11-14	NULL
11	Kabir Joshi	2000-10-14	kabir.joshi@example.com	61	111	2021-11-14	Philosophy
12	Arnav Das	2001-01-29	arnav.das@example.com	12	112	2021-12-29	NULL
12	Arnav Das	2001-01-29	arnav.das@example.com	62	112	2021-12-29	Sociology
13	Atharv Chatterjee	2002-05-07	atharv.chatterjee@example.com	13	113	2022-01-07	NULL
13	Atharv Chatterjee	2002-05-07	atharv.chatterjee@example.com	63	113	2022-01-07	Psychology
14	Dhyey Mukherjee	2003-09-22	dhyey.mukherjee@example.com	14	114	2022-02-22	NULL
14	Dhyey Mukherjee	2003-09-22	dhyey.mukherjee@example.com	64	114	2022-02-22	Statistics
15	Aarush Roy	2000-02-10	aarush.roy@example.com	15	115	2022-03-10	NULL
15	Aarush Roy	2000-02-10	aarush.roy@example.com	65	115	2022-03-10	Business Administration
16	Rudra Bhattacharya	2001-03-18	rudra.bhattacharya@example.com	16	116	2022-04-18	NULL
16	Rudra Bhattacharya	2001-03-18	rudra.bhattacharya@example.com	66	116	2022-04-18	Marketing
17	Advait Banerjee	2002-06-25	advait.banerjee@example.com	17	117	2022-05-17	NULL
17	Advait Banerjee	2002-06-25	advait.banerjee@example.com	67	117	2022-05-17	Finance
18	Yug Verma	2003-08-17	yug.verma@example.com	18	118	2022-06-12	NULL
18	Yug Verma	2003-08-17	yug.verma@example.com	68	118	2022-06-12	Accounting
19	Shiv Kapoor	2000-11-28	shiv.kapoor@example.com	19	119	2022-07-14	NULL
19	Shiv Kapoor	2000-11-28	shiv.kapoor@example.com	69	119	2022-07-14	Management

21	Vivaan Singh	2002-04-22	vivaan.singh@example.com	21	121	2022-09-15	NULL
21	Vivaan Singh	2002-04-22	vivaan.singh@example.com	71	121	2022-09-15	Medicine
22	Aditya Gupta	2003-07-10	aditya.gupta@example.com	22	122	2022-10-22	NULL
22	Aditya Gupta	2003-07-10	aditya.gupta@example.com	72	122	2022-10-22	Law
23	Vihaan Kumar	2000-09-05	vihaan.kumar@example.com	23	123	2022-11-10	NULL
23	Vihaan Kumar	2000-09-05	vihaan.kumar@example.com	73	123	2022-11-10	Architecture
24	Arjun Patel	2001-12-18	arjun.patel@example.com	24	124	2022-12-05	NULL
24	Arjun Patel	2001-12-18	arjun.patel@example.com	74	124	2022-12-05	Environmental Science
25	Sai Reddy	2002-03-30	sai.reddy@example.com	25	125	2023-01-18	NULL
25	Sai Reddy	2002-03-30	sai.reddy@example.com	75	125	2023-01-18	Journalism
26	Reyansh Nair	2003-06-12	reyansh.nair@example.com	26	126	2023-02-27	NULL
26	Reyansh Nair	2003-06-12	reyansh.nair@example.com	76	126	2023-02-27	Mass Communication
27	Ayaan Iyer	2000-07-25	ayaan.iyer@example.com	27	127	2023-03-30	NULL
27	Ayaan Iyer	2000-07-25	ayaan.iyer@example.com	77	127	2023-03-30	Fine Arts
28	Krishna Rao	2001-10-19	krishna.rao@example.com	28	128	2023-04-12	NULL
28	Krishna Rao	2001-10-19	krishna.rao@example.com	78	128	2023-04-12	Performing Arts
29	Ishaan Mehta	2002-01-03	ishaan.mehta@example.com	29	129	2023-05-19	NULL
29	Ishaan Mehta	2002-01-03	ishaan.mehta@example.com	79	129	2023-05-19	Graphic Design
30	Kabir Joshi	2003-04-14	kabir.joshi@example.com	30	130	2023-06-25	NULL
30	Kabir Joshi	2003-04-14	kabir.joshi@example.com	80	130	2023-06-25	Animation
31	Arnav Das	2000-08-29	arnav.das@example.com	31	131	2023-07-10	NULL
31	Arnav Das	2000-08-29	arnav.das@example.com	81	131	2023-07-10	Fashion Design
32	Atharv Chatterjee	2001-05-07	atharv.chatterjee@example.com	32	132	2023-08-05	NULL
32	Atharv Chatterjee	2001-05-07	atharv.chatterjee@example.com	82	132	2023-08-05	Interior Design
33	Dhyey Mukherjee	2002-09-22	dhyey.mukherjee@example.com	33	133	2023-09-22	NULL
33	Dhyey Mukherjee	2002-09-22	dhyey.mukherjee@example.com	83	133	2023-09-22	Hotel Management
34	Aarush Roy	2003-02-10	aarush.roy@example.com	34	134	2023-10-17	NULL
34	Aarush Roy	2003-02-10	aarush.roy@example.com	84	134	2023-10-17	Tourism
35	Rudra Bhattacharya	2000-06-18	rudra.bhattacharya@example.com	35	135	2023-11-14	NULL
35	Rudra Bhattacharya	2000-06-18	rudra.bhattacharya@example.com	85	135	2023-11-14	Culinary Arts
36	Advait Banerjee	2001-11-25	advait.banerjee@example.com	36	136	2023-12-29	NULL
36	Advait Banerjee	2001-11-25	advait.banerjee@example.com	86	136	2023-12-29	Agriculture
37	Yug Verma	2002-08-17	yug.verma@example.com	37	137	2024-01-07	NULL
37	Yug Verma	2002-08-17	yug.verma@example.com	87	137	2024-01-07	Horticulture
38	Shiv Kapoor	2003-11-28	shiv.kapoor@example.com	38	138	2024-02-22	NULL
38	Shiv Kapoor	2003-11-28	shiv.kapoor@example.com	88	138	2024-02-22	Forestry
39	Aarav Jain	2000-02-15	aarav.jain@example.com	39	139	2024-03-10	NULL
39	Aarav Jain	2000-02-15	aarav.jain@example.com	89	139	2024-03-10	Veterinary Science
40	Vivaan Singh	2001-04-22	vivaan.singh@example.com	40	140	2024-04-10	NULL
40	Vivaan Singh	2001-04-22	vivaan.singh@example.com	90	140	2024-04-10	Zoology
41	Aditya Gupta	2002-07-10	aditya.gupta@example.com	41	141	2024-05-17	NULL
41	Aditya Gupta	2002-07-10	aditya.gupta@example.com	91	141	2024-05-17	Botany
42	Vihaan Kumar	2003-09-05	vihaan.kumar@example.com	42	142	2024-06-12	NULL
42	Vihaan Kumar	2003-09-05	vihaan.kumar@example.com	92	142	2024-06-12	Microbiology
43	Arjun Patel	2000-12-18	arjun.patel@example.com	43	143	2024-07-14	NULL
43	Arjun Patel	2000-12-18	arjun.patel@example.com	93	143	2024-07-14	Biotechnology
44	Sai Reddy	2001-03-30	sai.reddy@example.com	44	144	2024-08-28	NULL
44	Sai Reddy	2001-03-30	sai.reddy@example.com	94	144	2024-08-28	Genetics
45	Reyansh Nair	2002-06-12	reyansh.nair@example.com	45	145	2024-09-15	NULL
45	Reyansh Nair	2002-06-12	reyansh.nair@example.com	95	145	2024-09-15	Marine Biology
46	Ayaan Iyer	2003-07-25	ayaan.iyer@example.com	46	146	2024-10-22	NULL
46	Ayaan Iyer	2003-07-25	ayaan.iyer@example.com	96	146	2024-10-22	Astronomy
47	Krishna Rao	2000-10-19	krishna.rao@example.com	47	147	2024-11-10	NULL
47	Krishna Rao	2000-10-19	krishna.rao@example.com	97	147	2024-11-10	Astrophysics
48	Ishaan Mehta	2001-01-03	ishaan.mehta@example.com	48	148	2024-12-05	NULL
48	Ishaan Mehta	2001-01-03	ishaan.mehta@example.com	98	148	2024-12-05	Geology
49	Kabir Joshi	2002-04-14	kabir.joshi@example.com	49	149	2025-01-18	NULL
49	Kabir Joshi	2002-04-14	kabir.joshi@example.com	99	149	2025-01-18	Meteorology
50	Arnav Das	2003-08-29	arnav.das@example.com	50	150	2025-02-27	NULL
50	Arnav Das	2003-08-29	arnav.das@example.com	100	150	2025-02-27	Electrical

100 rows in set (0.00 sec)

ChatGPT Exercise

Using ChatGPT generates SQL queries of the below problem.

Scenario 1: We have an "inventory" Table with the following

columns: ProductID, ProductName, StockQuantity, and "sales" Table with following columns: SaleID, ProductID(foreign key), SaleQuantity, SaleDate. Now you need to use full outer join to generate a report that includes all products in the inventory and their sales, displaying NULL values for products that haven't been sold. Generate the chatGPT

prompt for the above scenario.

Code:

-- Create inventory table

```
CREATE TABLE inventory (  
ProductID INT PRIMARY KEY,  
ProductName VARCHAR(100),  
StockQuantity INT  
);
```

Code:

-- Insert sample values into inventory table

```
INSERT INTO inventory (ProductID, ProductName, StockQuantity) VALUES  
(1, 'Product A', 100),  
(2, 'Product B', 150),  
(3, 'Product C', 200),  
(4, 'Product D', 250),  
(5, 'Product E', 300),
```


(6, 'Product F', 350),
(7, 'Product G', 400),
(8, 'Product H', 450),
(9, 'Product I', 500),
(10, 'Product J', 550);

Output:

```
mysql> -- Create inventory table
mysql> CREATE TABLE inventory (
  ->     ProductID INT PRIMARY KEY,
  ->     ProductName VARCHAR(100),
  ->     StockQuantity INT
  -> );
Query OK, 0 rows affected (0.29 sec)

mysql> -- Insert sample values into inventory table
mysql> INSERT INTO inventory (ProductID, ProductName, StockQuantity) VALUES
  -> (1, 'Product A', 100),
  -> (2, 'Product B', 150),
  -> (3, 'Product C', 200),
  -> (4, 'Product D', 250),
  -> (5, 'Product E', 300),
  -> (6, 'Product F', 350),
  -> (7, 'Product G', 400),
  -> (8, 'Product H', 450),
  -> (9, 'Product I', 500),
  -> (10, 'Product J', 550);
Query OK, 10 rows affected (0.10 sec)
Records: 10  Duplicates: 0  Warnings: 0
```

Code:

-- Create sales table

CREATE TABLE sales (

SaleID INT PRIMARY KEY,

ProductID INT,

SaleQuantity INT,

SaleDate DATE,

FOREIGN KEY (ProductID) REFERENCES inventory(ProductID)

);

Code:

-- Insert sample values into sales table

INSERT INTO sales (SaleID, ProductID, SaleQuantity, SaleDate) VALUES

(1, 1, 10, '2023-01-01'),

(2, 2, 20, '2023-01-02'),

(3, 3, 30, '2023-01-03'),

(4, 4, 40, '2023-01-04'),

(5, 5, 50, '2023-01-05'),

(6, 6, 60, '2023-01-06'),

(7, 7, 70, '2023-01-07'),

(8, 8, 80, '2023-01-08'),

(9, 9, 90, '2023-01-09'),

(10, 10, 100, '2023-01-10');

Output:

```
mysql> -- Create sales table
mysql> CREATE TABLE sales (
  ->     SaleID INT PRIMARY KEY,
  ->     ProductID INT,
  ->     SaleQuantity INT,
  ->     SaleDate DATE,
  ->     FOREIGN KEY (ProductID) REFERENCES inventory(ProductID)
  -> );
Query OK, 0 rows affected (0.07 sec)

mysql> -- Insert sample values into sales table
mysql> INSERT INTO sales (SaleID, ProductID, SaleQuantity, SaleDate) VALUES
  -> (1, 1, 10, '2023-01-01'),
  -> (2, 2, 20, '2023-01-02'),
  -> (3, 3, 30, '2023-01-03'),
  -> (4, 4, 40, '2023-01-04'),
  -> (5, 5, 50, '2023-01-05'),
  -> (6, 6, 60, '2023-01-06'),
  -> (7, 7, 70, '2023-01-07'),
  -> (8, 8, 80, '2023-01-08'),
  -> (9, 9, 90, '2023-01-09'),
  -> (10, 10, 100, '2023-01-10');
Query OK, 10 rows affected (0.21 sec)
Records: 10  Duplicates: 0  Warnings: 0
```

Code:

-- Query to generate report with FULL OUTER JOIN

SELECT

inventory.ProductID,
inventory.ProductName,
inventory.StockQuantity,
sales.SaleID,
sales.SaleQuantity,
sales.SaleDate

FROM

inventory

LEFT JOIN

sales

ON

inventory.ProductID = sales.ProductID

```
mysql> -- Query to generate report with FULL OUTER JOIN
mysql> SELECT
->     inventory.ProductID,
->     inventory.ProductName,
->     inventory.StockQuantity,
->     sales.SaleID,
->     sales.SaleQuantity,
->     sales.SaleDate
-> FROM
->     inventory
-> LEFT JOIN
->     sales
-> ON
->     inventory.ProductID = sales.ProductID;
```

ProductID	ProductName	StockQuantity	SaleID	SaleQuantity	SaleDate
1	Product A	100	1	10	2023-01-01
2	Product B	150	2	20	2023-01-02
3	Product C	200	3	30	2023-01-03
4	Product D	250	4	40	2023-01-04
5	Product E	300	5	50	2023-01-05
6	Product F	350	6	60	2023-01-06
7	Product G	400	7	70	2023-01-07
8	Product H	450	8	80	2023-01-08
9	Product I	500	9	90	2023-01-09
10	Product J	550	10	100	2023-01-10

10 rows in set (0.00 sec)

Code:

```
SELECT
inventory.ProductID,
inventory.ProductName,
inventory.StockQuantity,
sales.SaleID,
sales.SaleQuantity,
sales.SaleDate
FROM
inventory
RIGHT JOIN
sales
ON
inventory.ProductID = sales.ProductID;
```

Output:

```
mysql> SELECT
->     inventory.ProductID,
->     inventory.ProductName,
->     inventory.StockQuantity,
->     sales.SaleID,
->     sales.SaleQuantity,
->     sales.SaleDate
-> FROM
->     inventory
-> RIGHT JOIN
->     sales
-> ON
->     inventory.ProductID = sales.ProductID;
```

ProductID	ProductName	StockQuantity	SaleID	SaleQuantity	SaleDate
1	Product A	100	1	10	2023-01-01
2	Product B	150	2	20	2023-01-02
3	Product C	200	3	30	2023-01-03
4	Product D	250	4	40	2023-01-04
5	Product E	300	5	50	2023-01-05
6	Product F	350	6	60	2023-01-06
7	Product G	400	7	70	2023-01-07
8	Product H	450	8	80	2023-01-08
9	Product I	500	9	90	2023-01-09
10	Product J	550	10	100	2023-01-10

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

THANK YOU, SIR