

SQL MODULE

LAB - 10

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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.CourseId,
-> 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	96	1	101	2021-01-15	NULL
1	Aarav Sharma	2000-01-15	aarav.sharma@example.com	131	1	101	2021-01-15	Mathematics
2	Vivaan Singh	2001-03-22	vivaan.singh@example.com	97	2	102	2021-02-22	NULL
2	Vivaan Singh	2001-03-22	vivaan.singh@example.com	132	2	102	2021-02-22	Physics
3	Aditya Gupta	2002-07-10	aditya.gupta@example.com	98	3	103	2021-03-10	NULL
3	Aditya Gupta	2002-07-10	aditya.gupta@example.com	133	3	103	2021-03-10	Chemistry
4	Vihaan Kumar	2000-11-05	vihaan.kumar@example.com	99	4	104	2021-04-05	NULL
4	Vihaan Kumar	2000-11-05	vihaan.kumar@example.com	134	4	104	2021-04-05	Biology
5	Arjun Patel	2003-02-18	arjun.patel@example.com	100	5	105	2021-05-18	NULL
5	Arjun Patel	2003-02-18	arjun.patel@example.com	135	5	105	2021-05-18	Computer Science
6	Sai Reddy	2001-06-30	sai.reddy@example.com	101	6	106	2021-06-30	NULL
6	Sai Reddy	2001-06-30	sai.reddy@example.com	136	6	106	2021-06-30	History
7	Reyansh Nair	2002-09-12	reyansh.nair@example.com	102	7	107	2021-07-12	NULL
7	Reyansh Nair	2002-09-12	reyansh.nair@example.com	137	7	107	2021-07-12	Geography
8	Ayaan Iyer	2000-12-25	ayaan.iyer@example.com	103	8	108	2021-08-25	NULL
8	Ayaan Iyer	2000-12-25	ayaan.iyer@example.com	138	8	108	2021-08-25	Political Science
9	Krishna Rao	2001-04-19	krishna.rao@example.com	104	9	109	2021-09-19	NULL
9	Krishna Rao	2001-04-19	krishna.rao@example.com	139	9	109	2021-09-19	Economics
10	Ishaan Mehta	2002-08-03	ishaan.mehta@example.com	105	10	110	2021-10-03	NULL
10	Ishaan Mehta	2002-08-03	ishaan.mehta@example.com	140	10	110	2021-10-03	English Literature
11	Kabir Joshi	2000-10-14	kabir.joshi@example.com	106	11	111	2021-11-14	NULL
11	Kabir Joshi	2000-10-14	kabir.joshi@example.com	141	11	111	2021-11-14	Philosophy
12	Arnav Das	2001-01-29	arnav.das@example.com	107	12	112	2021-12-29	NULL
12	Arnav Das	2001-01-29	arnav.das@example.com	142	12	112	2021-12-29	Sociology
13	Atharv Chatterjee	2002-05-07	atharv.chatterjee@example.com	108	13	113	2022-01-07	NULL
13	Atharv Chatterjee	2002-05-07	atharv.chatterjee@example.com	143	13	113	2022-01-07	Psychology
14	Dhyye Mukherjee	2003-09-22	dhyye.mukherjee@example.com	109	14	114	2022-02-22	NULL
14	Dhyye Mukherjee	2003-09-22	dhyye.mukherjee@example.com	144	14	114	2022-02-22	Statistics
15	Aarush Roy	2000-02-10	aarush.roy@example.com	110	15	115	2022-03-10	NULL
15	Aarush Roy	2000-02-10	aarush.roy@example.com	145	15	115	2022-03-10	Business Administration
16	Rudra Bhattacharya	2001-03-18	rudra.bhattacharya@example.com	111	16	116	2022-04-18	NULL
16	Rudra Bhattacharya	2001-03-18	rudra.bhattacharya@example.com	146	16	116	2022-04-18	Marketing
17	Advait Banerjee	2002-06-25	advait.banerjee@example.com	112	17	117	2022-05-25	NULL
17	Advait Banerjee	2002-06-25	advait.banerjee@example.com	147	17	117	2022-05-25	Finance
18	Yug Verma	2003-08-17	yug.verma@example.com	113	18	118	2022-06-17	NULL
18	Yug Verma	2003-08-17	yug.verma@example.com	148	18	118	2022-06-17	Accounting
19	Shiv Kapoor	2000-11-28	shiv.kapoor@example.com	114	19	119	2022-07-28	NULL
19	Shiv Kapoor	2000-11-28	shiv.kapoor@example.com	149	19	119	2022-07-28	Management
20	Aarav Jain	2001-02-15	aarav.jain@example.com	115	20	120	2022-08-28	NULL
20	Aarav Jain	2001-02-15	aarav.jain@example.com	150	20	120	2022-08-28	Engineering
21	Vivaan Singh	2002-04-22	vivaan.singh@example.com	116	21	121	2022-09-15	NULL
21	Vivaan Singh	2002-04-22	vivaan.singh@example.com	151	21	121	2022-09-15	Medicine
22	Aditya Gupta	2003-07-10	aditya.gupta@example.com	117	22	122	2022-10-22	NULL
22	Aditya Gupta	2003-07-10	aditya.gupta@example.com	152	22	122	2022-10-22	Law
23	Vihaan Kumar	2000-09-05	vihaan.kumar@example.com	118	23	123	2022-11-10	NULL
23	Vihaan Kumar	2000-09-05	vihaan.kumar@example.com	153	23	123	2022-11-10	Architecture
24	Arjun Patel	2001-12-18	arjun.patel@example.com	119	24	124	2022-12-05	NULL
24	Arjun Patel	2001-12-18	arjun.patel@example.com	154	24	124	2022-12-05	Environmental Science
25	Sai Reddy	2002-03-30	sai.reddy@example.com	120	25	125	2023-01-18	NULL
25	Sai Reddy	2002-03-30	sai.reddy@example.com	155	25	125	2023-01-18	Journalism
26	Reyansh Nair	2003-06-12	reyansh.nair@example.com	121	26	126	2023-02-27	NULL
26	Reyansh Nair	2003-06-12	reyansh.nair@example.com	156	26	126	2023-02-27	Mass Communication
27	Ayaan Iyer	2000-07-25	ayaan.iyer@example.com	122	27	127	2023-03-30	NULL
27	Ayaan Iyer	2000-07-25	ayaan.iyer@example.com	157	27	127	2023-03-30	Fine Arts
28	Krishna Rao	2001-10-19	krishna.rao@example.com	123	28	128	2023-04-12	NULL
28	Krishna Rao	2001-10-19	krishna.rao@example.com	158	28	128	2023-04-12	Performing Arts
29	Ishaan Mehta	2002-01-03	ishaan.mehta@example.com	124	29	129	2023-05-19	NULL
29	Ishaan Mehta	2002-01-03	ishaan.mehta@example.com	159	29	129	2023-05-19	Graphic Design
30	Kabir Joshi	2003-04-14	kabir.joshi@example.com	125	30	130	2023-06-25	NULL
30	Kabir Joshi	2003-04-14	kabir.joshi@example.com	160	30	130	2023-06-25	Animation
31	Arnav Das	2000-08-29	arnav.das@example.com	126	31	131	2023-07-10	NULL
31	Arnav Das	2000-08-29	arnav.das@example.com	161	31	131	2023-07-10	Fashion Design
32	Atharv Chatterjee	2001-05-07	atharv.chatterjee@example.com	127	32	132	2023-08-05	NULL
32	Atharv Chatterjee	2001-05-07	atharv.chatterjee@example.com	162	32	132	2023-08-05	Interior Design
33	Dhyye Mukherjee	2002-09-22	dhyye.mukherjee@example.com	128	33	133	2023-09-22	NULL
33	Dhyye Mukherjee	2002-09-22	dhyye.mukherjee@example.com	163	33	133	2023-09-22	Hotel Management
34	Aarush Roy	2003-02-10	aarush.roy@example.com	129	34	134	2023-10-17	NULL
34	Aarush Roy	2003-02-10	aarush.roy@example.com	164	34	134	2023-10-17	Tourism
35	Rudra Bhattacharya	2000-06-18	rudra.bhattacharya@example.com	130	35	135	2023-11-14	NULL
35	Rudra Bhattacharya	2000-06-18	rudra.bhattacharya@example.com	165	35	135	2023-11-14	Culinary Arts
36	Advait Banerjee	2001-11-25	advait.banerjee@example.com	NULL	NULL	NULL	NULL	NULL

71 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	96	1	101	2021-01-15	NULL
2	Vivaan Singh	2001-03-22	vivaan.singh@example.com	97	2	102	2021-02-22	NULL
3	Aditya Gupta	2002-07-10	aditya.gupta@example.com	98	3	103	2021-03-10	NULL
4	Vihaan Kumar	2000-11-05	vihaan.kumar@example.com	99	4	104	2021-04-05	NULL
5	Arjun Patel	2003-02-18	arjun.patel@example.com	100	5	105	2021-05-18	NULL
6	Sai Reddy	2001-06-30	sai.reddy@example.com	101	6	106	2021-06-30	NULL
7	Reyansh Nair	2002-09-12	reyansh.nair@example.com	102	7	107	2021-07-12	NULL
8	Ayaan Iyer	2000-12-25	ayaan.iyer@example.com	103	8	108	2021-08-25	NULL
9	Krishna Rao	2001-04-19	krishna.rao@example.com	104	9	109	2021-09-19	NULL
10	Ishaan Mehta	2002-08-03	ishaan.mehta@example.com	105	10	110	2021-10-03	NULL
11	Kabir Joshi	2000-10-14	kabir.joshi@example.com	106	11	111	2021-11-14	NULL
12	Arnav Das	2001-01-29	arnav.das@example.com	107	12	112	2021-12-29	NULL
13	Atharv Chatterjee	2002-05-07	atharv.chatterjee@example.com	108	13	113	2022-01-07	NULL
14	Dhrey Mukherjee	2003-09-22	dhrey.mukherjee@example.com	109	14	114	2022-02-22	NULL
15	Aarush Roy	2000-02-10	aarush.roy@example.com	110	15	115	2022-03-10	NULL
16	Rudra Bhattacharya	2001-03-18	rudra.bhattacharya@example.com	111	16	116	2022-04-10	NULL
17	Advait Banerjee	2002-06-25	advait.banerjee@example.com	112	17	117	2022-05-17	NULL
18	Yug Verma	2003-08-17	yug.verma@example.com	113	18	118	2022-06-12	NULL
19	Shiv Kapoor	2000-11-28	shiv.kapoor@example.com	114	19	119	2022-07-14	NULL
20	Aarav Jain	2001-02-15	aarav.jain@example.com	115	20	120	2022-08-28	NULL
21	Vivaan Singh	2002-04-22	vivaan.singh@example.com	116	21	121	2022-09-15	NULL
22	Aditya Gupta	2003-07-10	aditya.gupta@example.com	117	22	122	2022-10-22	NULL
23	Vihaan Kumar	2000-09-05	vihaan.kumar@example.com	118	23	123	2022-11-10	NULL
24	Arjun Patel	2001-12-18	arjun.patel@example.com	119	24	124	2022-12-05	NULL
25	Sai Reddy	2002-03-30	sai.reddy@example.com	120	25	125	2023-01-18	NULL
26	Reyansh Nair	2003-06-12	reyansh.nair@example.com	121	26	126	2023-02-27	NULL
27	Ayaan Iyer	2000-07-25	ayaan.iyer@example.com	122	27	127	2023-03-30	NULL
28	Krishna Rao	2001-10-19	krishna.rao@example.com	123	28	128	2023-04-12	NULL
29	Ishaan Mehta	2002-01-03	ishaan.mehta@example.com	124	29	129	2023-05-19	NULL
30	Kabir Joshi	2003-04-14	kabir.joshi@example.com	125	30	130	2023-06-25	NULL
31	Arnav Das	2000-08-29	arnav.das@example.com	126	31	131	2023-07-10	NULL
32	Atharv Chatterjee	2001-05-07	atharv.chatterjee@example.com	127	32	132	2023-08-05	NULL
33	Dhrey Mukherjee	2002-09-22	dhrey.mukherjee@example.com	128	33	133	2023-09-22	NULL
34	Aarush Roy	2003-02-10	aarush.roy@example.com	129	34	134	2023-10-17	NULL
35	Rudra Bhattacharya	2000-06-18	rudra.bhattacharya@example.com	130	35	135	2023-11-14	NULL
1	Aarav Sharma	2000-01-15	aarav.sharma@example.com	131	1	101	2021-01-15	Mathematics
2	Vivaan Singh	2001-03-22	vivaan.singh@example.com	132	2	102	2021-02-22	Physics
3	Aditya Gupta	2002-07-10	aditya.gupta@example.com	133	3	103	2021-03-10	Chemistry

4	Vihaan Kumar	2000-11-05	vihaan.kumar@example.com	134	4	104	2021-04-05	Biology
5	Arjun Patel	2003-02-18	arjun.patel@example.com	135	5	105	2021-05-18	Computer Science
6	Sai Reddy	2001-06-30	sai.reddy@example.com	136	6	106	2021-06-30	History
7	Reyansh Nair	2002-09-12	reyansh.nair@example.com	137	7	107	2021-07-12	Geography
8	Ayaan Iyer	2000-12-25	ayaan.iyer@example.com	138	8	108	2021-08-25	Political Science
9	Krishna Rao	2001-04-19	krishna.rao@example.com	139	9	109	2021-09-19	Economics
10	Ishaan Mehta	2002-08-03	ishaan.mehta@example.com	140	10	110	2021-10-03	English Literature
11	Kabir Joshi	2000-10-14	kabir.joshi@example.com	141	11	111	2021-11-14	Philosophy
12	Arnav Das	2001-01-29	arnav.das@example.com	142	12	112	2021-12-29	Sociology
13	Atharv Chatterjee	2002-05-07	atharv.chatterjee@example.com	143	13	113	2022-01-07	Psychology
14	Dhyey Mukherjee	2003-09-22	dhyey.mukherjee@example.com	144	14	114	2022-02-22	Statistics
15	Aarush Roy	2000-02-10	aarush.roy@example.com	145	15	115	2022-03-10	Business Administration
16	Rudra Bhattacharya	2001-03-18	rudra.bhattacharya@example.com	146	16	116	2022-04-10	Marketing
17	Advait Banerjee	2002-06-25	advait.banerjee@example.com	147	17	117	2022-05-17	Finance
18	Yug Verma	2003-08-17	yug.verma@example.com	148	18	118	2022-06-12	Accounting
19	Shiv Kapoor	2000-11-28	shiv.kapoor@example.com	149	19	119	2022-07-14	Management
20	Aarav Jain	2001-02-15	aarav.jain@example.com	150	20	120	2022-08-28	Engineering
21	Vivaan Singh	2002-04-22	vivaan.singh@example.com	151	21	121	2022-09-15	Medicine
22	Aditya Gupta	2003-07-10	aditya.gupta@example.com	152	22	122	2022-10-22	Law
23	Vihaan Kumar	2000-09-05	vihaan.kumar@example.com	153	23	123	2022-11-10	Architecture
24	Arjun Patel	2001-12-18	arjun.patel@example.com	154	24	124	2022-12-05	Environmental Science
25	Sai Reddy	2002-03-30	sai.reddy@example.com	155	25	125	2023-01-18	Journalism
26	Reyansh Nair	2003-06-12	reyansh.nair@example.com	156	26	126	2023-02-27	Mass Communication
27	Ayaan Iyer	2000-07-25	ayaan.iyer@example.com	157	27	127	2023-03-30	Fine Arts
28	Krishna Rao	2001-10-19	krishna.rao@example.com	158	28	128	2023-04-12	Performing Arts
29	Ishaan Mehta	2002-01-03	ishaan.mehta@example.com	159	29	129	2023-05-19	Graphic Design
30	Kabir Joshi	2003-04-14	kabir.joshi@example.com	160	30	130	2023-06-25	Animation
31	Arnav Das	2000-08-29	arnav.das@example.com	161	31	131	2023-07-10	Fashion Design
32	Atharv Chatterjee	2001-05-07	atharv.chatterjee@example.com	162	32	132	2023-08-05	Interior Design
33	Dhyey Mukherjee	2002-09-22	dhyey.mukherjee@example.com	163	33	133	2023-09-22	Hotel Management
34	Aarush Roy	2003-02-10	aarush.roy@example.com	164	34	134	2023-10-17	Tourism
35	Rudra Bhattacharya	2000-06-18	rudra.bhattacharya@example.com	165	35	135	2023-11-14	Culinary Arts

70 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	96	101	2021-01-15	NULL
1	Aarav Sharma	2000-01-15	aarav.sharma@example.com	131	101	2021-01-15	Mathematics
2	Vivaan Singh	2001-03-22	vivaan.singh@example.com	97	102	2021-02-22	NULL
2	Vivaan Singh	2001-03-22	vivaan.singh@example.com	132	102	2021-02-22	Physics
3	Aditya Gupta	2002-07-10	aditya.gupta@example.com	98	103	2021-03-10	NULL
3	Aditya Gupta	2002-07-10	aditya.gupta@example.com	133	103	2021-03-10	Chemistry
4	Vihaan Kumar	2000-11-05	vihaan.kumar@example.com	99	104	2021-04-05	NULL
4	Vihaan Kumar	2000-11-05	vihaan.kumar@example.com	134	104	2021-04-05	Biology
5	Arjun Patel	2003-02-18	arjun.patel@example.com	100	105	2021-05-18	NULL
5	Arjun Patel	2003-02-18	arjun.patel@example.com	135	105	2021-05-18	Computer Science
6	Sai Reddy	2001-06-30	sai.reddy@example.com	101	106	2021-06-30	NULL
6	Sai Reddy	2001-06-30	sai.reddy@example.com	136	106	2021-06-30	History
7	Reyansh Nair	2002-09-12	reyansh.nair@example.com	102	107	2021-07-12	NULL
7	Reyansh Nair	2002-09-12	reyansh.nair@example.com	137	107	2021-07-12	Geography
8	Ayaan Iyer	2000-12-25	ayaan.iyer@example.com	103	108	2021-08-25	NULL
8	Ayaan Iyer	2000-12-25	ayaan.iyer@example.com	138	108	2021-08-25	Political Science
9	Krishna Rao	2001-04-19	krishna.rao@example.com	104	109	2021-09-19	NULL
9	Krishna Rao	2001-04-19	krishna.rao@example.com	139	109	2021-09-19	Economics
10	Ishaan Mehta	2002-08-03	ishaan.mehta@example.com	105	110	2021-10-03	NULL
10	Ishaan Mehta	2002-08-03	ishaan.mehta@example.com	140	110	2021-10-03	English Literature
11	Kabir Joshi	2000-10-14	kabir.joshi@example.com	106	111	2021-11-14	NULL
11	Kabir Joshi	2000-10-14	kabir.joshi@example.com	141	111	2021-11-14	Philosophy
12	Arnav Das	2001-01-29	arnav.das@example.com	107	112	2021-12-29	NULL
12	Arnav Das	2001-01-29	arnav.das@example.com	142	112	2021-12-29	Sociology
13	Atharv Chatterjee	2002-05-07	atharv.chatterjee@example.com	108	113	2022-01-07	NULL
13	Atharv Chatterjee	2002-05-07	atharv.chatterjee@example.com	143	113	2022-01-07	Psychology
14	Dhyey Mukherjee	2003-09-22	dhyey.mukherjee@example.com	109	114	2022-02-22	NULL
14	Dhyey Mukherjee	2003-09-22	dhyey.mukherjee@example.com	144	114	2022-02-22	Statistics
15	Aarush Roy	2000-02-10	aarush.roy@example.com	110	115	2022-03-10	NULL
15	Aarush Roy	2000-02-10	aarush.roy@example.com	145	115	2022-03-10	Business Administration
16	Rudra Bhattacharya	2001-03-18	rudra.bhattacharya@example.com	111	116	2022-04-10	NULL
16	Rudra Bhattacharya	2001-03-18	rudra.bhattacharya@example.com	146	116	2022-04-10	Marketing
17	Advait Banerjee	2002-06-25	advait.banerjee@example.com	112	117	2022-05-17	NULL
17	Advait Banerjee	2002-06-25	advait.banerjee@example.com	147	117	2022-05-17	Finance
18	Yug Verma	2003-08-17	yug.verma@example.com	113	118	2022-06-12	NULL
18	Yug Verma	2003-08-17	yug.verma@example.com	148	118	2022-06-12	Accounting
19	Shiv Kapoor	2000-11-28	shiv.kapoor@example.com	114	119	2022-07-14	NULL
19	Shiv Kapoor	2000-11-28	shiv.kapoor@example.com	149	119	2022-07-14	Management
20	Aarav Jain	2001-02-15	aarav.jain@example.com	115	120	2022-08-28	NULL
20	Aarav Jain	2001-02-15	aarav.jain@example.com	150	120	2022-08-28	Engineering
21	Vivaan Singh	2002-04-22	vivaan.singh@example.com	116	121	2022-09-15	NULL
21	Vivaan Singh	2002-04-22	vivaan.singh@example.com	151	121	2022-09-15	Medicine
22	Aditya Gupta	2003-07-10	aditya.gupta@example.com	117	122	2022-10-22	NULL
22	Aditya Gupta	2003-07-10	aditya.gupta@example.com	152	122	2022-10-22	Law
19	Shiv Kapoor	2000-11-28	shiv.kapoor@example.com	114	119	2022-07-14	NULL
19	Shiv Kapoor	2000-11-28	shiv.kapoor@example.com	149	119	2022-07-14	Management
20	Aarav Jain	2001-02-15	aarav.jain@example.com	115	120	2022-08-28	NULL
20	Aarav Jain	2001-02-15	aarav.jain@example.com	150	120	2022-08-28	Engineering
21	Vivaan Singh	2002-04-22	vivaan.singh@example.com	116	121	2022-09-15	NULL
21	Vivaan Singh	2002-04-22	vivaan.singh@example.com	151	121	2022-09-15	Medicine
22	Aditya Gupta	2003-07-10	aditya.gupta@example.com	117	122	2022-10-22	NULL
22	Aditya Gupta	2003-07-10	aditya.gupta@example.com	152	122	2022-10-22	Law
23	Vihaan Kumar	2000-09-05	vihaan.kumar@example.com	118	123	2022-11-10	NULL
23	Vihaan Kumar	2000-09-05	vihaan.kumar@example.com	153	123	2022-11-10	Architecture
24	Arjun Patel	2001-12-18	arjun.patel@example.com	119	124	2022-12-05	NULL
24	Arjun Patel	2001-12-18	arjun.patel@example.com	154	124	2022-12-05	Environmental Science
25	Sai Reddy	2002-03-30	sai.reddy@example.com	120	125	2023-01-18	NULL
25	Sai Reddy	2002-03-30	sai.reddy@example.com	155	125	2023-01-18	Journalism
26	Reyansh Nair	2003-06-12	reyansh.nair@example.com	121	126	2023-02-27	NULL
26	Reyansh Nair	2003-06-12	reyansh.nair@example.com	156	126	2023-02-27	Mass Communication
27	Ayaan Iyer	2000-07-25	ayaan.iyer@example.com	122	127	2023-03-30	NULL
27	Ayaan Iyer	2000-07-25	ayaan.iyer@example.com	157	127	2023-03-30	Fine Arts
28	Krishna Rao	2001-10-19	krishna.rao@example.com	123	128	2023-04-12	NULL
28	Krishna Rao	2001-10-19	krishna.rao@example.com	158	128	2023-04-12	Performing Arts
29	Ishaan Mehta	2002-01-03	ishaan.mehta@example.com	124	129	2023-05-19	NULL
29	Ishaan Mehta	2002-01-03	ishaan.mehta@example.com	159	129	2023-05-19	Graphic Design
30	Kabir Joshi	2003-04-14	kabir.joshi@example.com	125	130	2023-06-25	NULL
30	Kabir Joshi	2003-04-14	kabir.joshi@example.com	160	130	2023-06-25	Animation
31	Arnav Das	2000-08-29	arnav.das@example.com	126	131	2023-07-10	NULL
31	Arnav Das	2000-08-29	arnav.das@example.com	161	131	2023-07-10	Fashion Design
32	Atharv Chatterjee	2001-05-07	atharv.chatterjee@example.com	127	132	2023-08-05	NULL
32	Atharv Chatterjee	2001-05-07	atharv.chatterjee@example.com	162	132	2023-08-05	Interior Design
33	Dhyey Mukherjee	2002-09-22	dhyey.mukherjee@example.com	128	133	2023-09-22	NULL
33	Dhyey Mukherjee	2002-09-22	dhyey.mukherjee@example.com	163	133	2023-09-22	Hotel Management
34	Aarush Roy	2003-02-10	aarush.roy@example.com	129	134	2023-10-17	NULL
34	Aarush Roy	2003-02-10	aarush.roy@example.com	164	134	2023-10-17	Tourism
35	Rudra Bhattacharya	2000-06-18	rudra.bhattacharya@example.com	130	135	2023-11-14	NULL
35	Rudra Bhattacharya	2000-06-18	rudra.bhattacharya@example.com	165	135	2023-11-14	Culinary Arts

70 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 (0.05 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 (0.01 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 (0.06 sec)
```

```
INSERT INTO sales (SaleID, ProductID, SaleQuantity, SaleDate) VALUES
(1, ' at line 1
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 (0.01 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;

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)

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)