

Student table info :

```
MySQL localhost:33060+ ssl student SQL > desc student;
```

Field	Type	Null	Key	Default	Extra
student_id	int	NO	PRI	NULL	
first_name	varchar(25)	YES		NULL	
last_name	varchar(25)	YES		NULL	
email	varchar(25)	YES		NULL	
birthdate	date	YES		NULL	
enrollment_date	date	YES		NULL	

Courses table info :

```
MySQL localhost:33060+ ssl student SQL > desc courses;
```

Field	Type	Null	Key	Default	Extra
course_id	int	NO	PRI	NULL	auto_increment
course_name	varchar(100)	YES		NULL	
course_description	text	YES		NULL	
start_date	date	YES		NULL	
end_date	date	YES		NULL	

enrollments table info :

```
MySQL localhost:33060+ ssl student SQL > desc enrollments;
```

Field	Type	Null	Key	Default	Extra
enrollment_id	int	NO	PRI	NULL	auto_increment
student_id	int	YES	MUL	NULL	
course_id	int	YES	MUL	NULL	

Inserting info in student :

```
MySQL localhost:33060+ ssl student SQL > select * from student;
```

student_id	first_name	last_name	email	birthdate	enrollment_date
1	Amit	Sharma	amit.sharma@example.com	2000-01-15	2023-06-01
2	Raj	Verma	raj.verma@example.com	1999-05-20	2023-06-01
3	Sneha	Patel	sneha.patel@example.com	2001-08-30	2023-06-01
4	Priya	Mehta	priya.mehta@example.com	2002-11-12	2023-06-01
5	Vikas	Singh	vikas.singh@example.com	1998-07-25	2023-06-01
6	Anjali	Gupta	anjali.gupta@example.com	2000-02-10	2023-06-01
7	Rohan	Yadav	rohan.yadav@example.com	1997-12-05	2023-06-01
8	Nisha	Kumar	nisha.kumar@example.com	2001-09-15	2023-06-01
9	Arjun	Chauhan	arjun.chauhan@example.com	1999-10-23	2023-06-01

Inserting info in courses :

```
MySQL localhost:33060+ ssl student SQL > select * from courses;
```

course_id	course_name	course_description	start_date	end_date
1	Introduction to Programming	Learn the basics of programming languages.	2024-07-01	2024-08-15
2	Data Analysis and Visualization	Explore techniques for analyzing and visualizing data.	2024-06-15	2024-09-01
3	Machine Learning Fundamentals	Discover the core concepts of machine learning.	2024-07-10	2024-10-15
4	Web Development Bootcamp	Intensive training on modern web development.	2024-06-20	2024-08-30
5	Business Strategy and Innovation	Strategies for enhancing business growth and innovation.	2024-07-05	2024-09-20

Inserting info in enrollments :

```
MySQL localhost:33060+ ssl student SQL > select * from enrollments;
```

enrollment_id	student_id	course_id
1	1	1
2	2	3
3	3	2
4	1	4
5	4	5

Retrieve a list of all students along with the courses they are enrolled in, including students who are not enrolled in any course.

```
MySQL localhost:33060+ ssl student SQL > SELECT s.student_id, s.first_name, s.last_name, c.course_id, c.course_name FROM student s LEFT JOIN enrollments e ON s.student_id = e.student_id LEFT JOIN courses c ON e.course_id = c.course_id ORDER BY s.student_id;
```

student_id	first_name	last_name	course_id	course_name
1	Amit	Sharma	4	Web Development Bootcamp
1	Amit	Sharma	1	Introduction to Programming
2	Raj	Verma	3	Machine Learning Fundamentals
3	Sneha	Patel	2	Data Analysis and Visualization
4	Priya	Shrivastava	5	Business Strategy and Innovation
5	Vikas	Singh	NULL	NULL
6	Anjali	Gupta	NULL	NULL
7	Rohan	Verma	NULL	NULL
8	Misha	Wadhwa	NULL	NULL
9	Aryan	Choudhary	NULL	NULL

Find the number of courses each student is enrolled in, and include students who are not enrolled in any course.

```
MySQL localhost:33060+ ssl student SQL > SELECT c.course_id, c.course_name, c.course_description, c.start_date, c.end_date, COUNT(e.student_id) AS num_students_enrolled FROM courses c LEFT JOIN enrollments e ON c.course_id = e.course_id GROUP BY c.course_id, c.course_name, c.course_description, c.start_date, c.end_date ORDER BY c.course_id;
```

course_id	course_name	course_description	start_date	end_date	num_students_enrolled
1	Introduction to Programming	Learn the basics of programming languages.	2024-07-01	2024-08-15	1
2	Data Analysis and Visualization	Explore techniques for analyzing and visualizing data.	2024-06-15	2024-09-01	1
3	Machine Learning Fundamentals	Discover the core concepts of machine learning.	2024-07-10	2024-10-15	1
4	Web Development Bootcamp	Intensive training on modern web development.	2024-06-20	2024-08-30	1
5	Business Strategy and Innovation	Strategies for enhancing business growth and innovation.	2024-07-05	2024-09-20	1

Find the names of students who are enrolled in both 'Introduction to programming' and 'Web Development bootcamp' courses.

```
MySQL localhost:33060+ ssl student SQL > SELECT s.first_name, s.last_name FROM student s JOIN enrollments e ON s.student_id = e.student_id JOIN courses c ON e.course_id = c.course_id WHERE c.course_name IN ('Introduction to Programming', 'Web Development Bootcamp') GROUP BY s.student_id, s.first_name, s.last_name HAVING COUNT(DISTINCT c.course_id) = 2;
```

first_name	last_name
Amit	Sharma

Retrieve the first name, last name, and email of students who are enrolled in exactly two courses.

```
MySQL localhost:33060+ ssl student SQL > SELECT s.first_name, s.last_name, s.email FROM student s JOIN (SELECT student_id FROM enrollments GROUP BY student_id HAVING COUNT(course_id) = 2) AS two_courses_students ON s.student_id = two_courses_students.student_id;
```

first_name	last_name	email
Amit	Sharma	amit.sharma@example.com