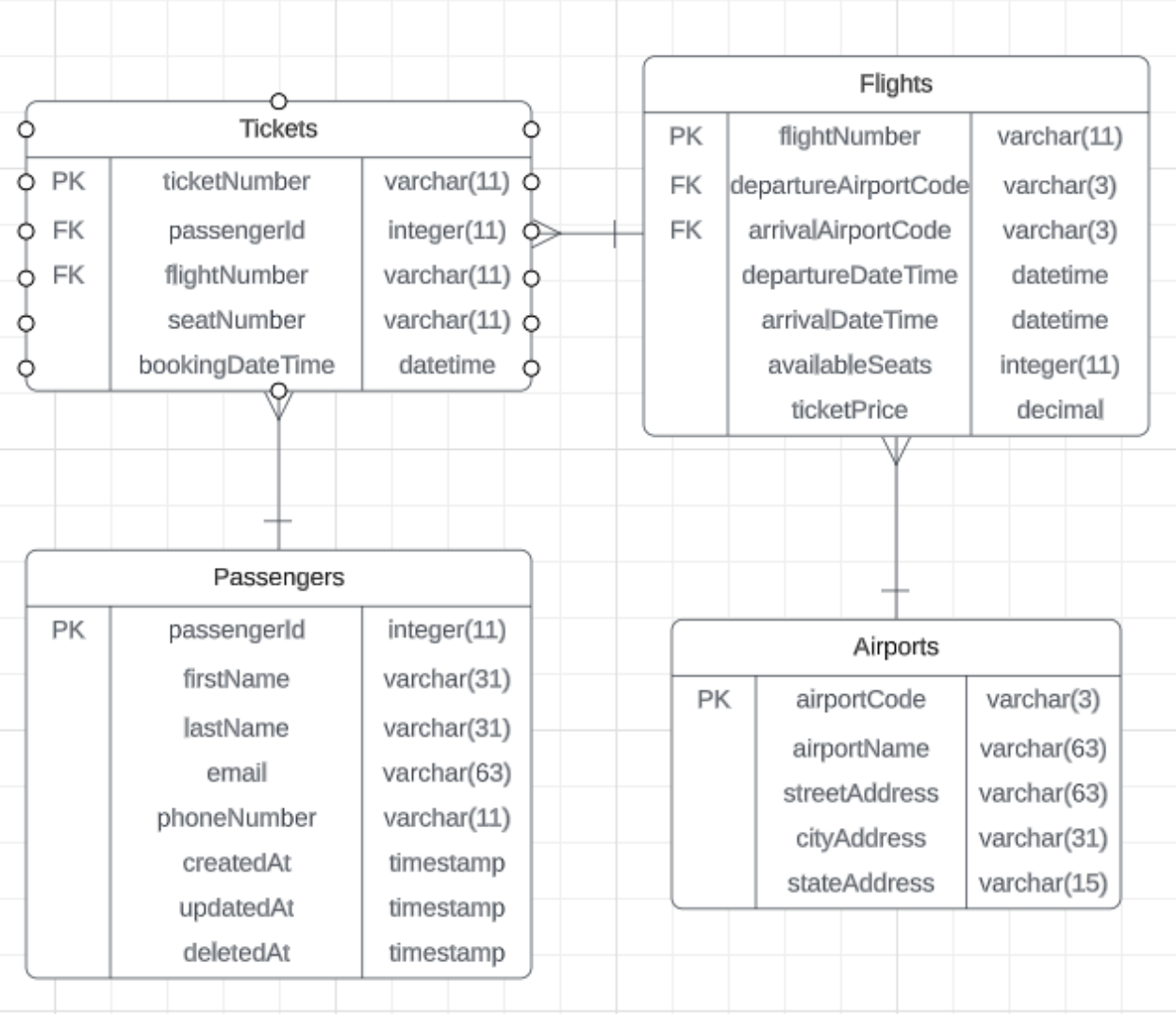
1. Design an ERD for an airline reservation system. The system should include entities like passengers, flights, tickets, and airports. Passengers can book multiple tickets, and each ticket is associated with one passenger. Flights depart from and arrive at specific airports.



Airports Table:

	#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
☐	1	**airportCode** 🔑	varchar(3)	utf8mb4_general_ci		No	*None*			Change Drop More
☐	2	**airportName**	varchar(63)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More
☐	3	**streetAddress**	varchar(63)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More
☐	4	**cityAddress**	varchar(31)	utf8mb4_general_ci		No	*None*			Change Drop More
☐	5	**stateAddress**	varchar(15)	utf8mb4_general_ci		No	*None*			Change Drop More

Flights Table:

	#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
☐	1	**flightNumber**	varchar(11)	utf8mb4_general_ci		No	*None*			Change Drop More
☐	2	**departureAirportCode**	varchar(3)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More
☐	3	**arrivalAirportCode**	varchar(3)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More
☐	4	**departureDateTime**	datetime			Yes	*NULL*			Change Drop More
☐	5	**arrivalDateTime**	datetime			Yes	*NULL*			Change Drop More
☐	6	**availableSeats**	int(11)			Yes	*NULL*			Change Drop More
☐	7	**ticketPrice**	decimal(10,2)			Yes	*NULL*			Change Drop More

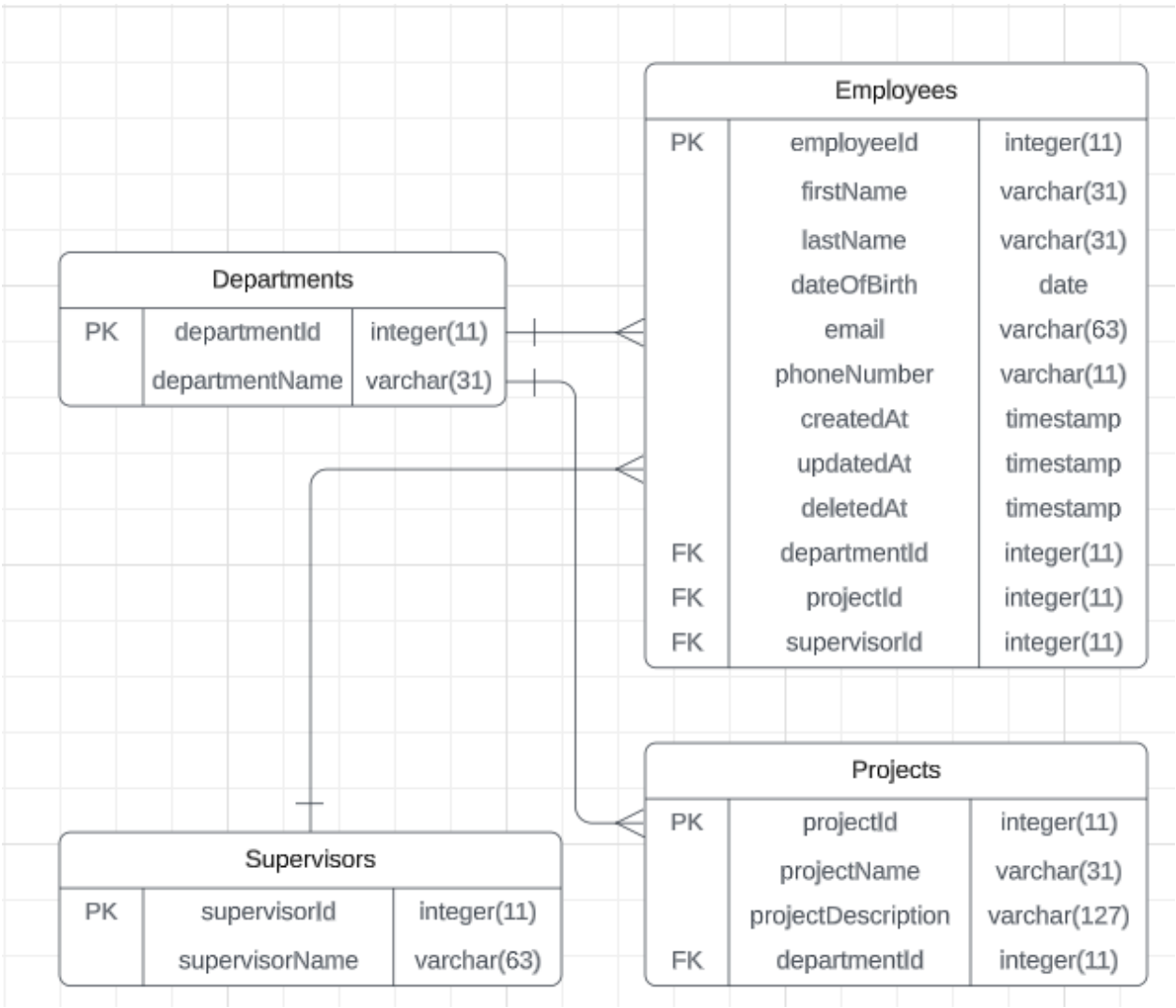
Passengers Table:

	#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
☐	1	**passengerId**	int(11)			No	*None*		AUTO_INCREMENT	Change Drop More
☐	2	**firstName**	varchar(31)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More
☐	3	**lastName**	varchar(31)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More
☐	4	**email**	varchar(63)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More
☐	5	**phoneNumber**	varchar(11)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More
☐	6	**createdAt**	timestamp			No	current_timestamp()			Change Drop More
☐	7	**updatedAt**	timestamp			No	current_timestamp()			Change Drop More
☐	8	**deletedAt**	timestamp			Yes	*NULL*			Change Drop More

Tickets Table:

	#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
☐	1	**ticketNumber**	varchar(20)	utf8mb4_general_ci		No	*None*			Change Drop More
☐	2	**passengerID**	int(11)			Yes	*NULL*			Change Drop More
☐	3	**flightNumber**	varchar(11)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More
☐	4	**seatNumber**	varchar(11)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More
☐	5	**bookingDateTime**	datetime			Yes	*NULL*			Change Drop More

2. Design an ERD for an employee management system for a company. Entities should include employees, departments, projects, and supervisors. Show how employees are assigned to departments and projects.



Departments Table:

	#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
☐	1	**departmentId** 🔑	int(11)			No	*None*		AUTO_INCREMENT	Change Drop More
☐	2	**departmentName**	varchar(31)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More

Employees Table:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	employeeId	int(11)			No	*None*		AUTO_INCREMENT	Change Drop More
2	firstName	varchar(31)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More
3	lastName	varchar(31)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More
4	dateOfBirth	date			Yes	*NULL*			Change Drop More
5	email	varchar(63)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More
6	phoneNumber	varchar(11)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More
7	createdAt	timestamp			No	current_timestamp()			Change Drop More
8	updatedAt	timestamp			No	current_timestamp()			Change Drop More
9	deletedAt	timestamp			Yes	*NULL*			Change Drop More
10	departmentId	int(11)			Yes	*NULL*			Change Drop More
11	projectId	int(11)			Yes	*NULL*			Change Drop More
12	supervisorId	int(11)			Yes	*NULL*			Change Drop More

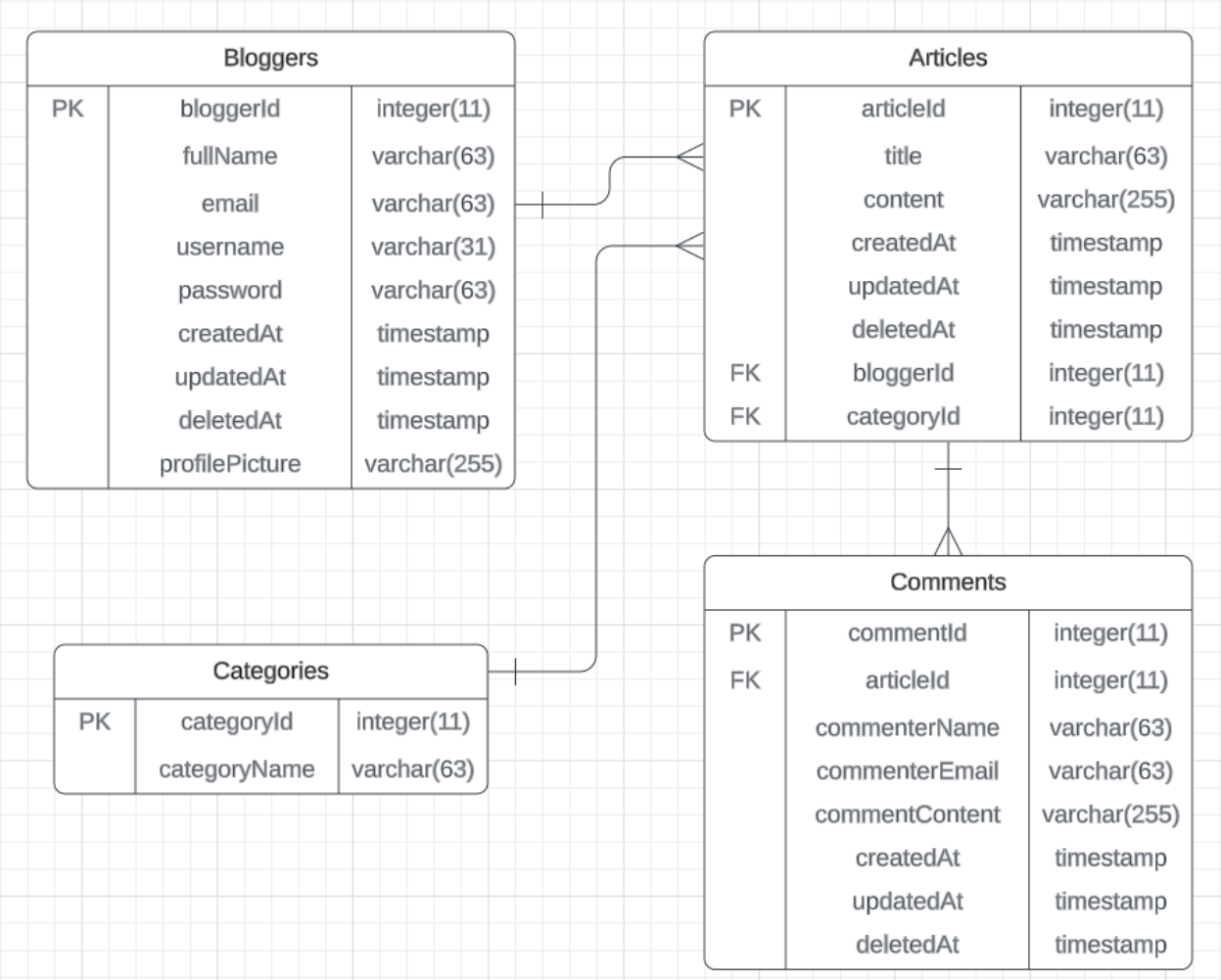
Projects Table:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	projectId	int(11)			No	*None*		AUTO_INCREMENT	Change Drop More
2	projectName	varchar(31)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More
3	projectDescription	varchar(127)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More
4	departmentID	int(11)			Yes	*NULL*			Change Drop More

Supervisors Table:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	supervisorId	int(11)			No	*None*		AUTO_INCREMENT	Change Drop More
2	supervisorName	varchar(63)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More

3. Create an ERD for an online blogging platform. Entities should include bloggers, articles, comments, and categories. Show how bloggers can write articles, readers can comment on articles, and articles can be categorized.



Articles Table:

	#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
☐	1	articleId	int(11)			No	None		AUTO_INCREMENT	Change Drop More
☐	2	title	varchar(31)	utf8mb4_general_ci		Yes	NULL			Change Drop More
☐	3	content	varchar(255)	utf8mb4_general_ci		Yes	NULL			Change Drop More
☐	4	createdAt	timestamp			Yes	current_timestamp()			Change Drop More
☐	5	updatedAt	timestamp			No	current_timestamp()			Change Drop More
☐	6	deleteAt	timestamp			Yes	NULL			Change Drop More
☐	7	bloggerID	int(11)			Yes	NULL			Change Drop More
☐	8	categoryID	int(11)			Yes	NULL			Change Drop More

Bloggers Table:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	bloggerId	int(11)			No	*None*		AUTO_INCREMENT	Change Drop More
2	fullName	varchar(63)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More
3	email	varchar(63)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More
4	username	varchar(31)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More
5	password	varchar(63)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More
6	createdAt	timestamp			No	current_timestamp()			Change Drop More
7	updatedAt	timestamp			Nc	current_timestamp()			Change Drop More
8	deleteAt	timestamp			Yes	*NULL*			Change Drop More
9	profilePicture	varchar(255)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More

Categories Table:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	categoryId	int(11)			No	*None*		AUTO_INCREMENT	Change Drop More
2	categoryName	varchar(63)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More

Comments Table:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	commentId	int(11)			No	*None*		AUTO_INCREMENT	Change Drop More
2	articleId	int(11)			Yes	*NULL*			Change Drop More
3	commenterName	varchar(63)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More
4	commenterEmail	varchar(63)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More
5	commentContent	varchar(255)	utf8mb4_general_ci		Yes	*NULL*			Change Drop More
6	createdAt	timestamp			Yes	current_timestamp()			Change Drop More
7	updatedAt	timestamp			No	current_timestamp()			Change Drop More
8	deleteAt	timestamp			Yes	*NULL*			Change Drop More