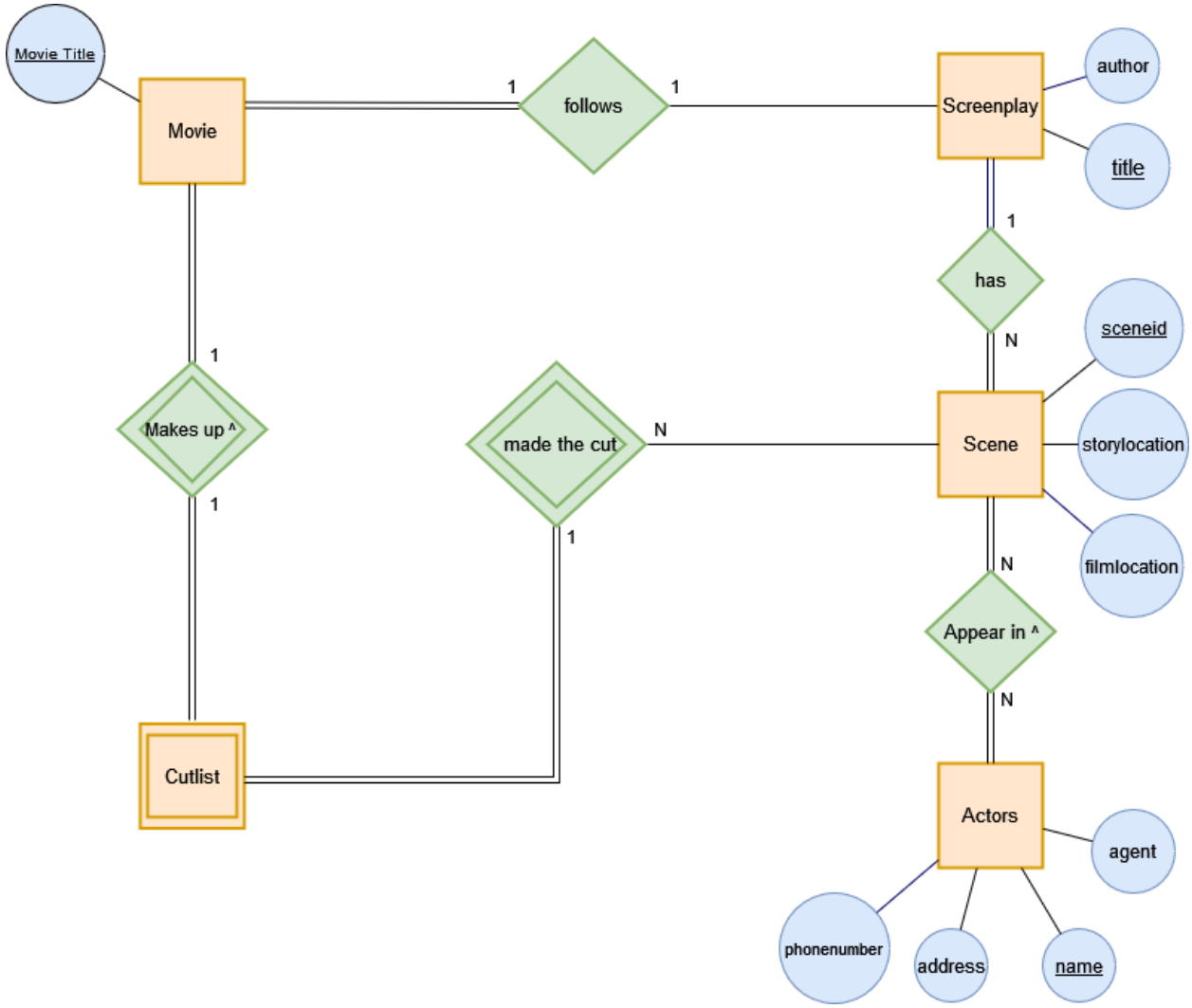
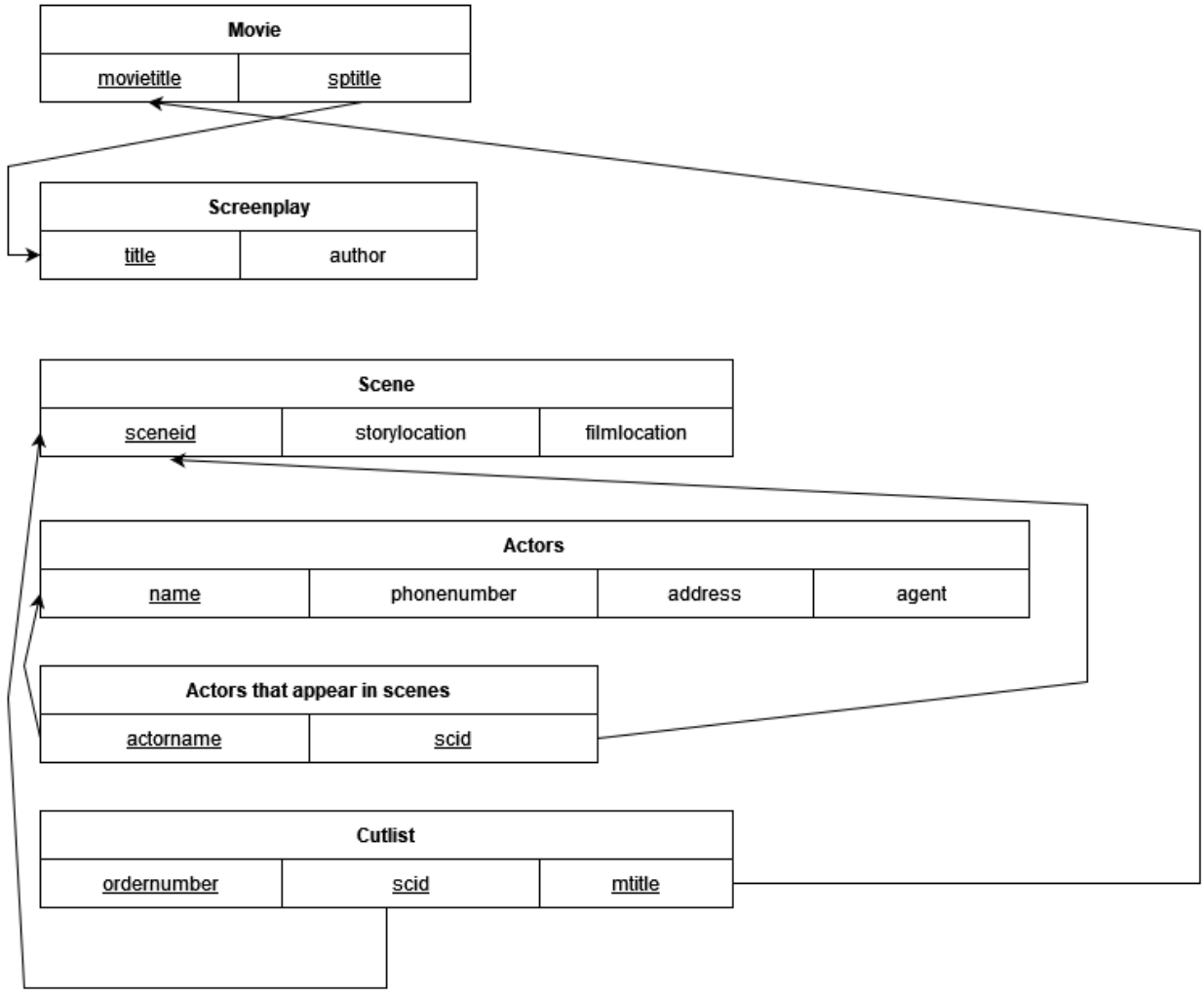
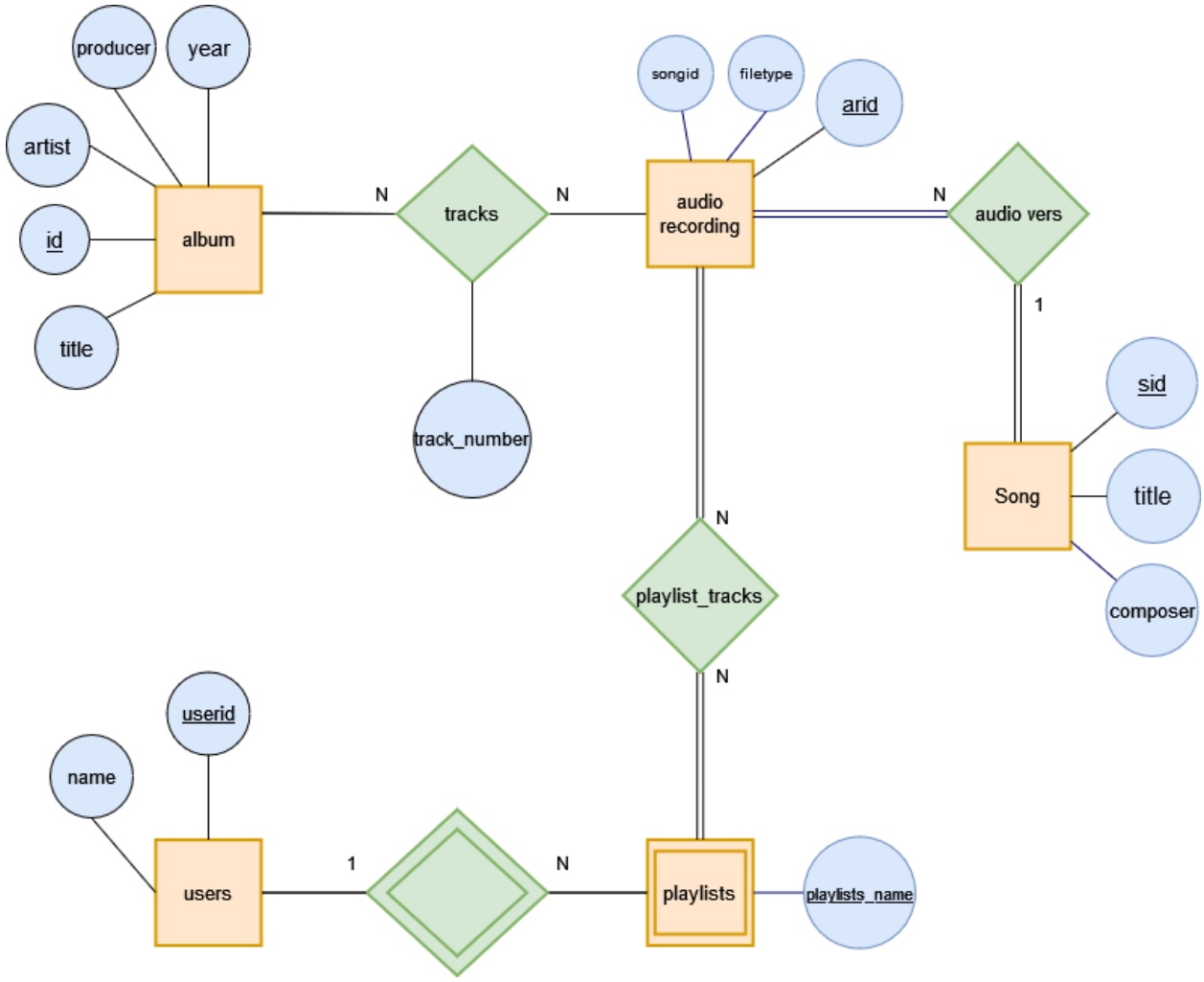
Problem 1 ER diagram



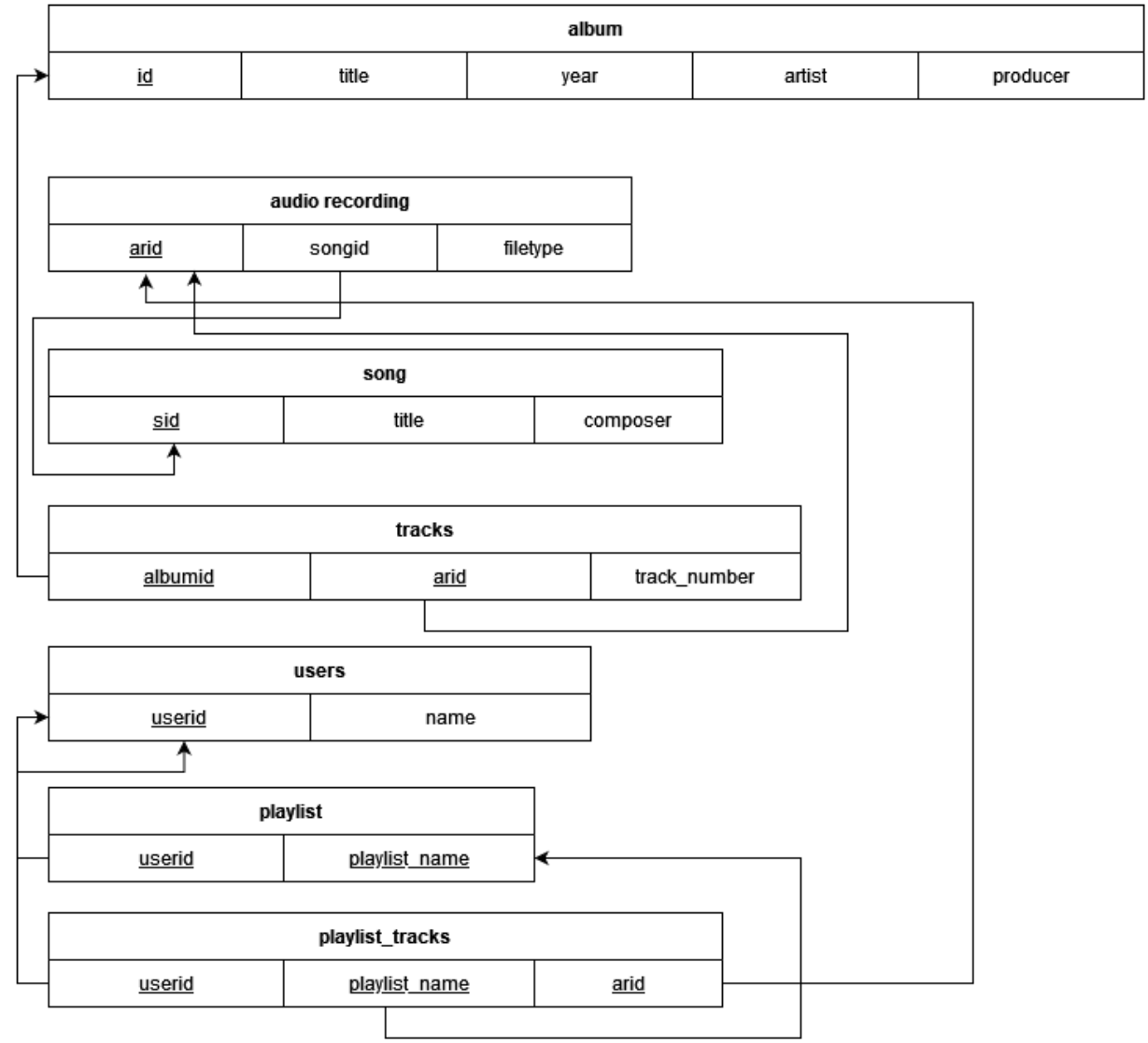
Problem 1 Schema



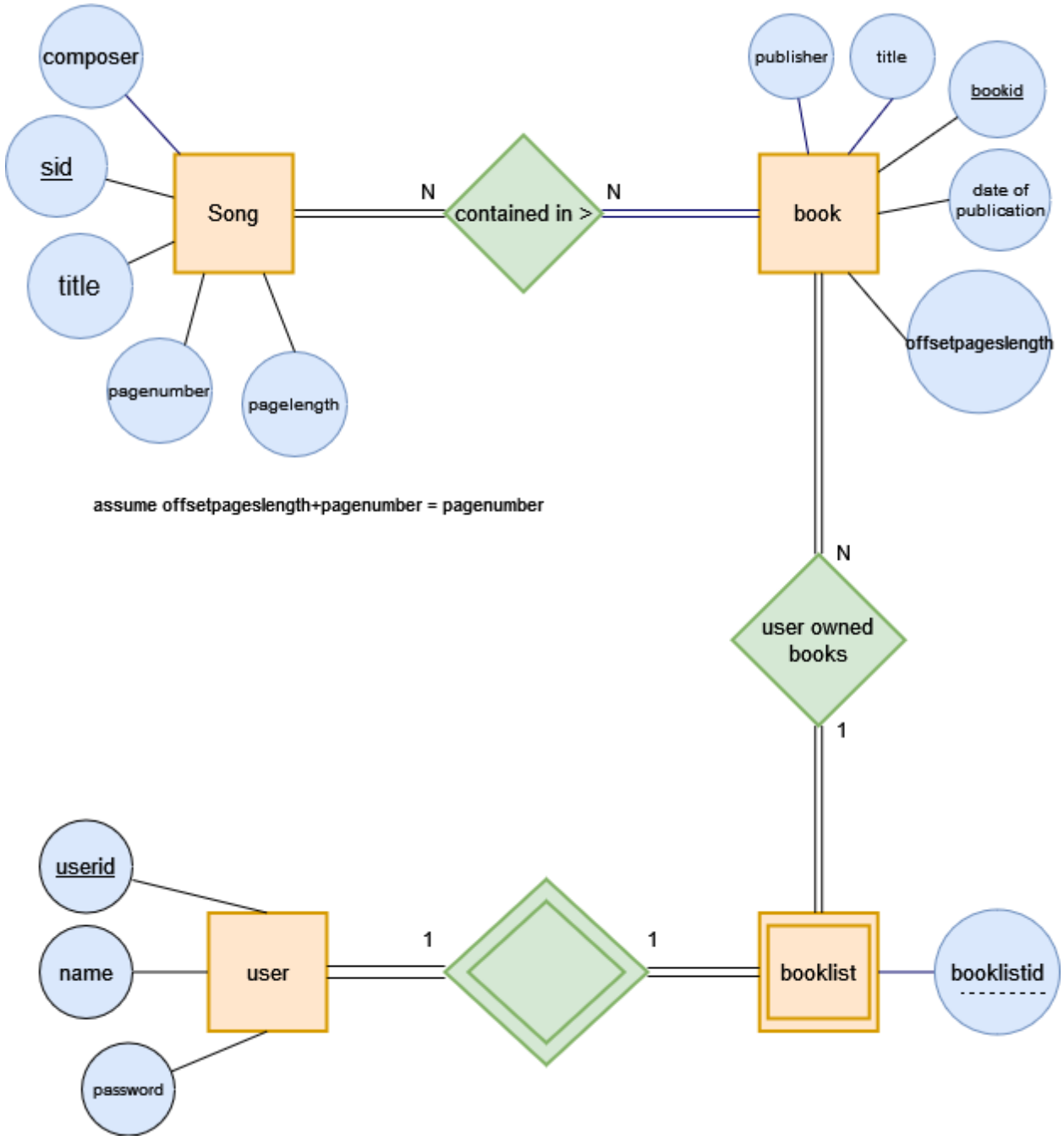
Problem 2 ER diagram



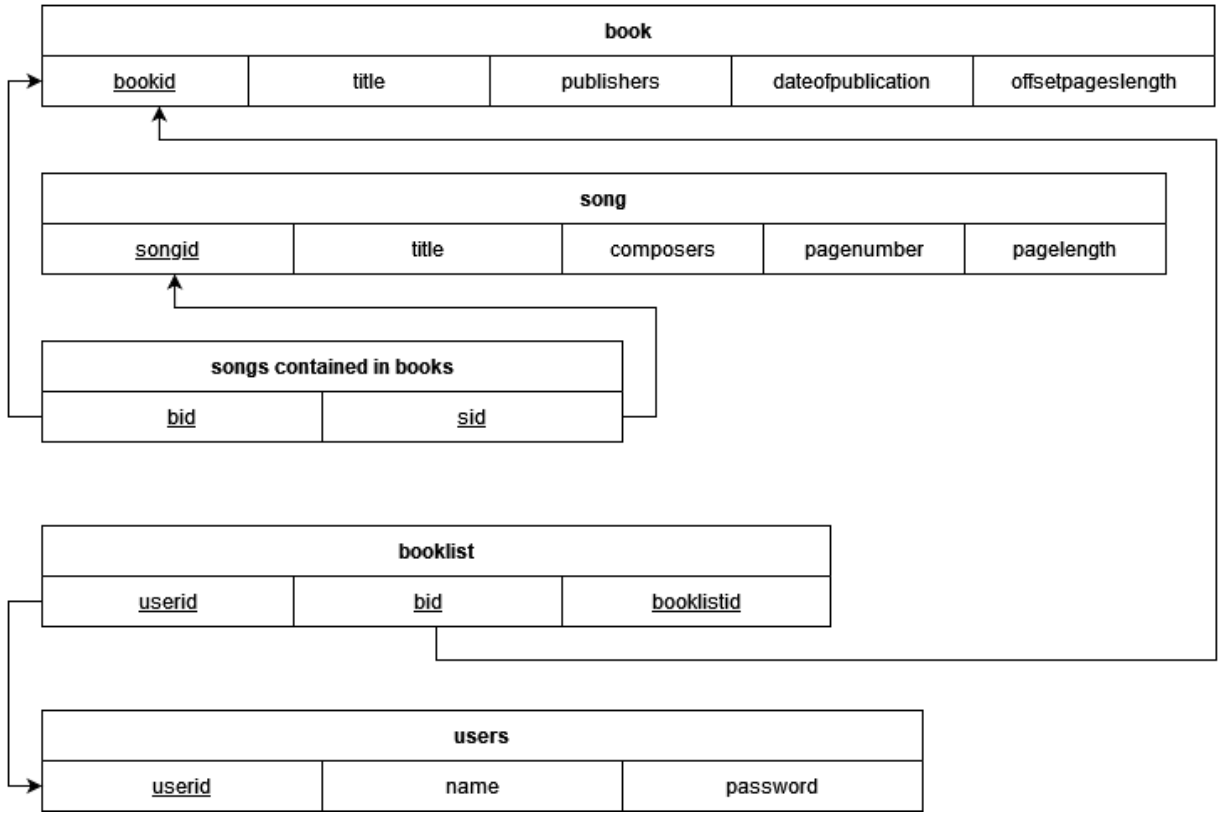
Problem 2 Schema



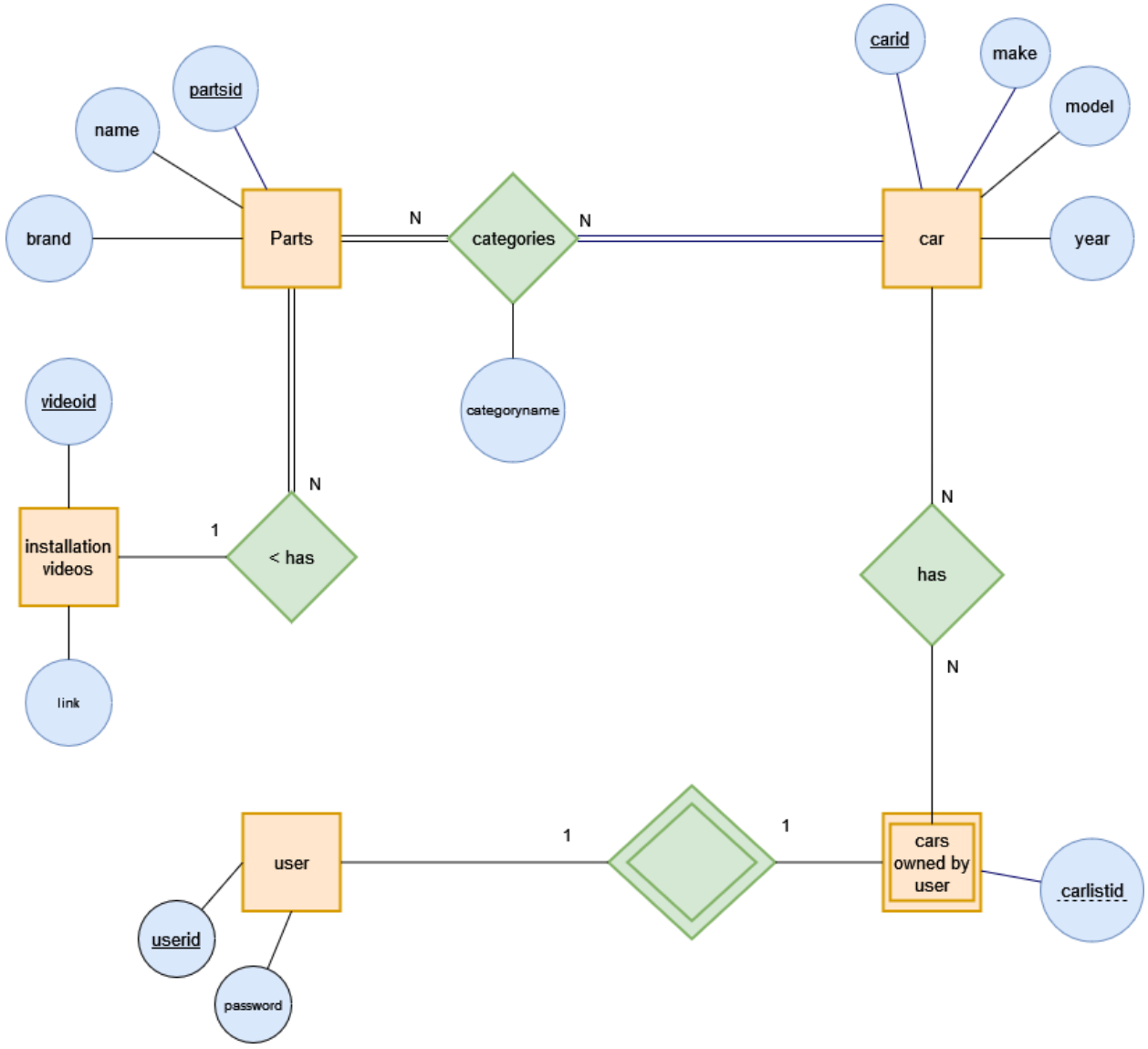
Problem 3 ER diagram



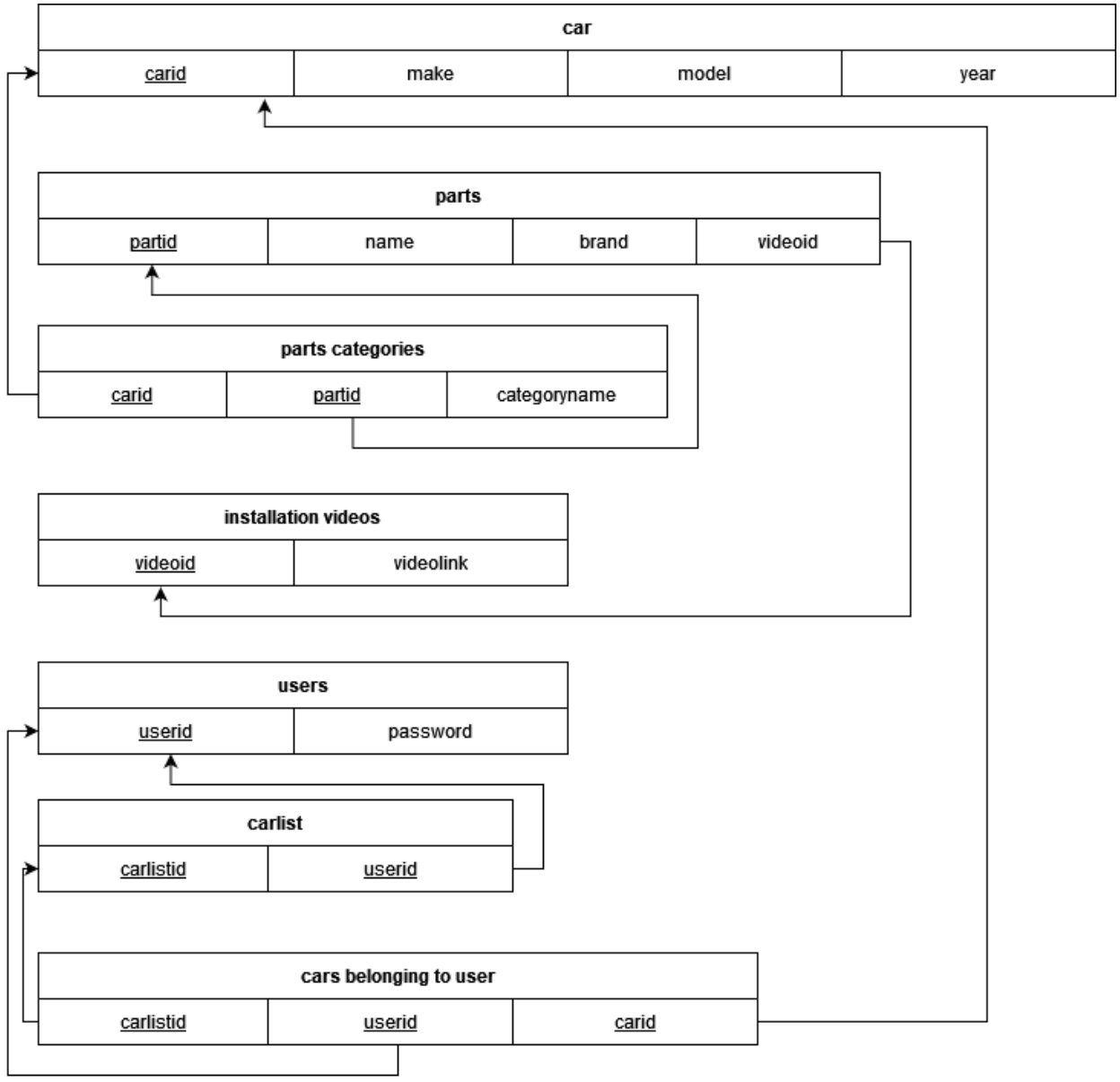
Problem 3 Table



Problem 4 ER diagram



Problem 4 Schema



Problem 4 Scenario description

An application for informational aftermarket automotive service. This requires creating a catalog of aftermarket car parts for various makes and models of cars in the aftermarket and tuning industry. That with those parts include instructional videos of installations for that specific car part on that generation of make and model for that car

Reason for this idea is because I, myself, am a car enthusiast that does his own repairs and modifications to my own cars. Finding the information can be hard to find at times especially videos for the more visual learning aspect of having to do a DIY job. This application would be eliminating the need to dig and research forums or any video sharing service.

Here are the details and requirements:

The application is going to be modeled after most aftermarket part retail websites that's available today, however it will not be selling those parts just providing information on how to install said parts. This allows the common car enthusiast to enter their information on a familiarity already to those websites.

A user will be able to log in and provide their username(user id) and their password with appropriate verification and is checked with save account information in the database. Each user can also have cars that they input saved into their account for the next time they log in. however guests can still be able to access the database, there just won't be any information saved to their account.

The database wants to keep track of different makes and models of cars but mainly Japanese tuner cars at the moment and can expand in the future. Most use a "Please enter year make model of the vehicle" so it is needed to keep track of Make, models, and years of different cars.

There should store information about parts coming in from different brands, however we will let the part contain a unique id, part name, and brand name. These parts can also be categorized into different systems that they belong to(ex. Suspension system).As much of the main information will be supplied and this will be a forever growing database as there are always new vehicles and aftermarket parts coming into the industry.

The database also needs to contain installation videos that's linked to its corresponding parts. We should save the videolink information as well as a single video can belong to many parts.

The target size of the database would have to be around 10 major car manufacturers that deal with Japanese tuner cars. The size of the list of those car models with corresponding years would be estimated around 50 cars and can grow on a supply and demand basis.