

Draw an ERD for each of the following situations. (If you believe that you need to make additional assumptions, clearly state them for each situation.)

1. An art museum owns a large volume of works of art. Each work of art is described by an item code (identifier), title, type, and size; size is further composed of height, width, and weight. A work of art is developed by an artist, but the artist for some works is unknown. An artist is described by an artist ID (identifier), name, date of birth, and date of death (which is null for still living artists). Only data about artists for works currently owned by the museum are kept in the database. At any point in time, a work of art is either on display at the museum, held in storage, away from the museum as part of a travelling show, or on loan to another gallery. If on display at the museum, a work of art is also described by its location within the museum. A travelling show is described by a show ID (identifier), the city in which the show is currently appearing, and the start and end dates of the show. Many of the museum works may be part of a given show, and only active shows with at least one museum work of art need be represented in the database. Finally, another gallery is described by a gallery ID (identifier), name, and city. The museum wants to retain a complete history of loaning a work of art to other galleries, and each time a work is loaned, the museum wants to know the date the work was loaned and the date it was returned.
2. Each publisher has a unique name; a mailing address and telephone number are also kept on each publisher. A publisher publishes one or more books; a book is published by exactly one publisher. A book is identified by its ISBN, and other attributes are title, price and number of pages. Each book is written by one or more authors; an author writes one or more books, potentially for different publishers. Each author is uniquely described by an author ID, and we know each author's name and address. Each author is paid a certain royalty rate on each book he or she authors, which potentially varies for each book he or she authors, which potentially varies for each book and for each author. An author receives a separate royalty check for each book he or she writes. Each check is identified by its check number, and we also keep track of the date and amount of each check. As you develop the ERD for this problem, follow good data naming guidelines.