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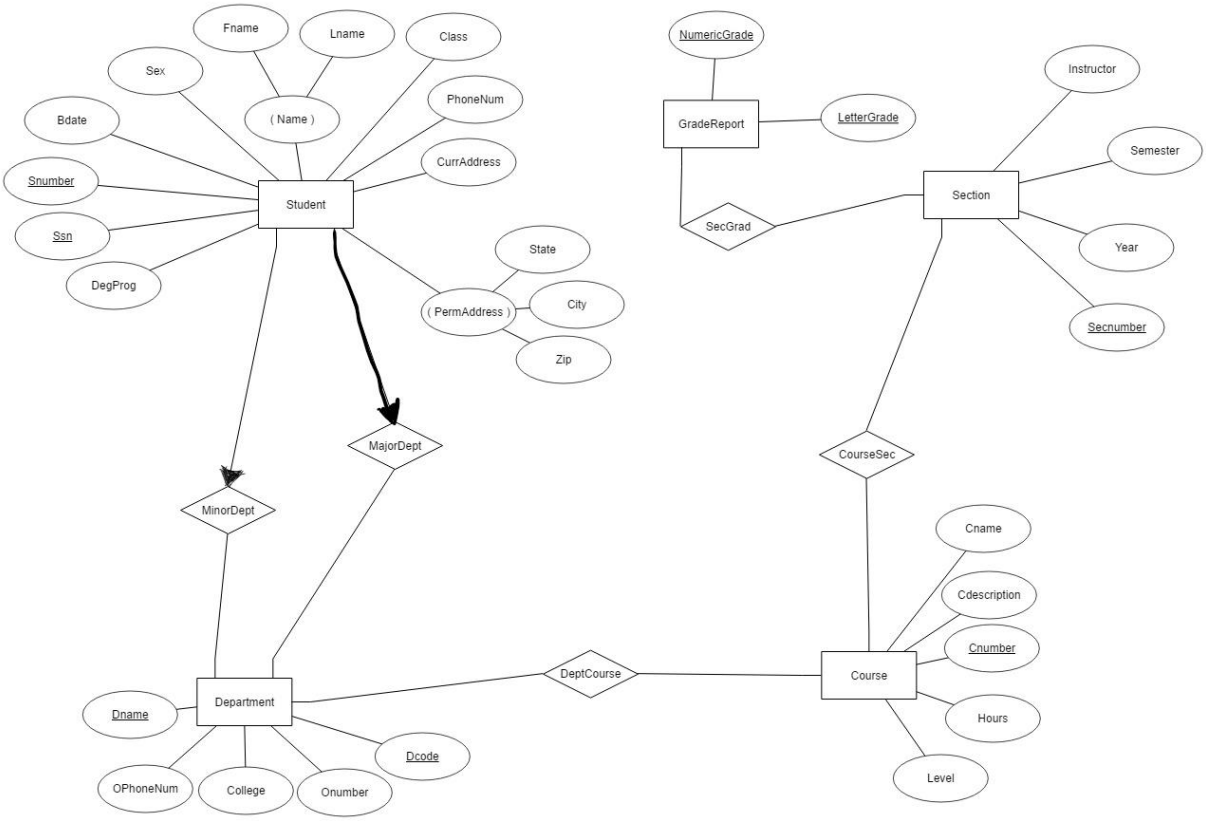
7.16



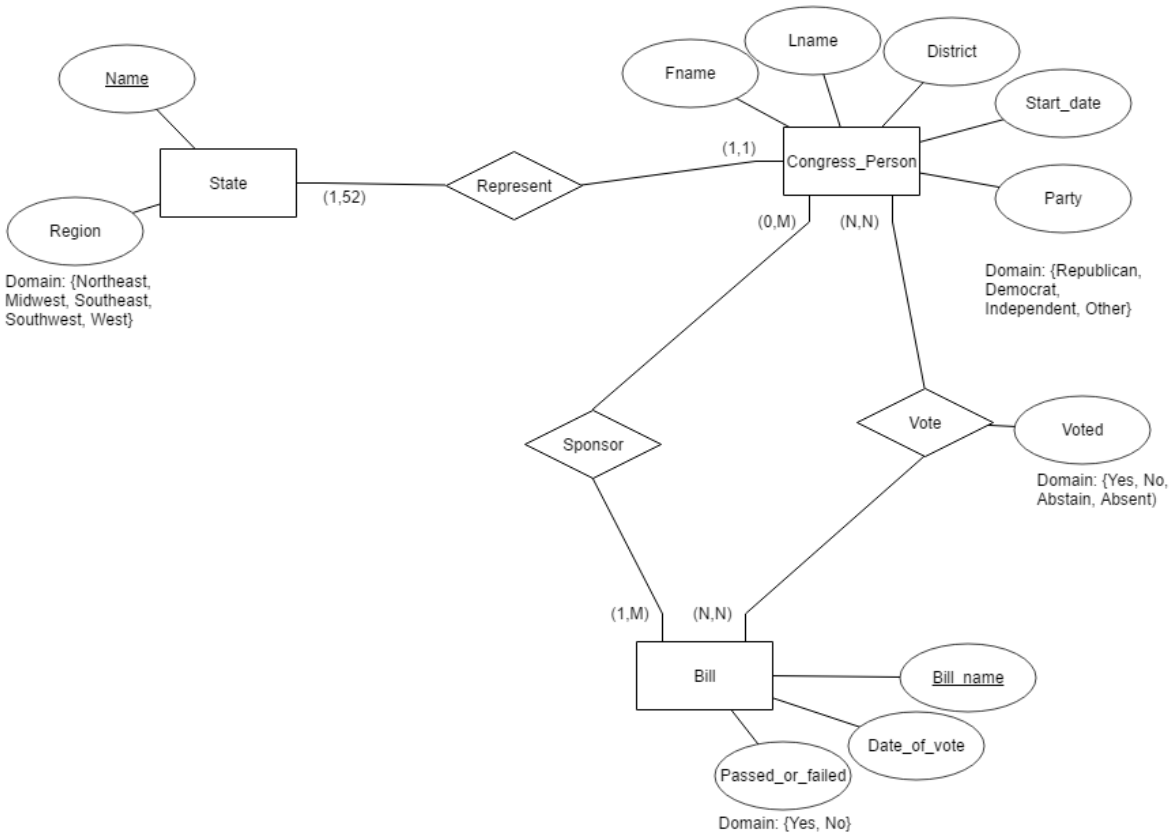
7.19

Consider the following requirements for an AIRPORT database:

- The airport keeps track of the airport code, name, and the city and state where the airport is located. The airport code is unique for each airport.
- Each flight has a flight number, airline, days of the week it operates. The flight number is unique for each flight. Each flight has one or more flight legs.
- Each flight leg has a departure airport, departure time, arrival airport, and arrival time.

- Each leg instance contains information on each flight leg, such as, a date, times the flight departed and arrived, number of seats available, and the airplane assigned to the flight.
- A customer may make a reservation on a leg instance that uses the customer name, phone number, and the seat number on the airplane.
- Each airplane has an airplane ID, type, total number of seats. The airplane ID is unique for each airplane.
- Each airplane type has a company, type name, max number of seats, and whether that plan can land at the airport. The type name is unique for each airplane type.

7.21



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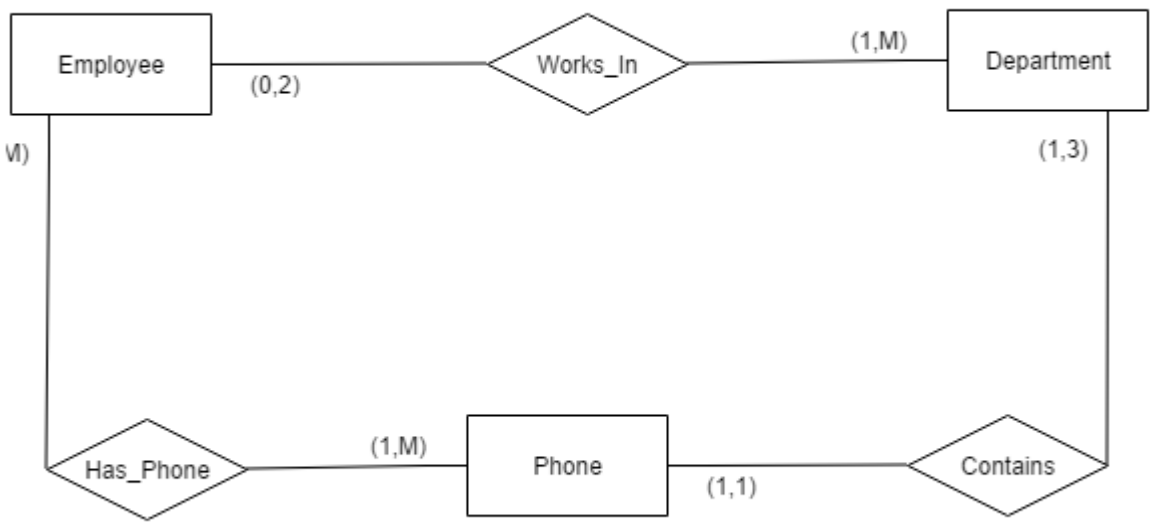
7.24



7.27

1. STUDENT 1:N SOCIAL_SECURITY_CARD

   A student can have multiple social security cards.

2. STUDENT M:1 TEACHER

   Many students can be taught by a teacher; assume one class.

3. CLASSROOM M:N WALL

   Many classrooms can have many walls.

4. COUNTRY 1:1 CURRENT_PRESIDENT

   One country can only have one president; assume democracy.

5. COURSE M:N TEXTBOOK

   Multiple courses can have multiple textbooks.

6. ITEM (that can be found in an order) N:M ORDER

   Many items can be found in many orders.

7. STUDENT M:N CLASS

   Many students can have many classes.

8. CLASS M:1 INSTRUCTOR

   Many classes can have one instructor.

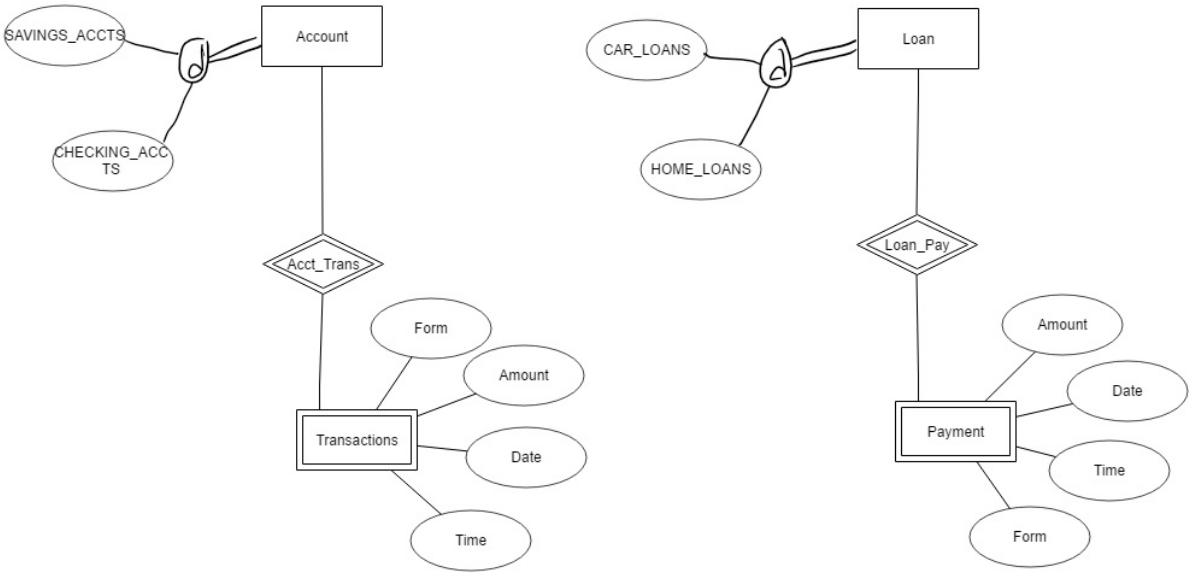
9. INSTRUCTOR 1:1 OFFICE

   A instructor has one office.

10. EBAY_AUCTION_ITEM 1:M EBAY_BID

    One item on EBAY can have many bids.

8.17



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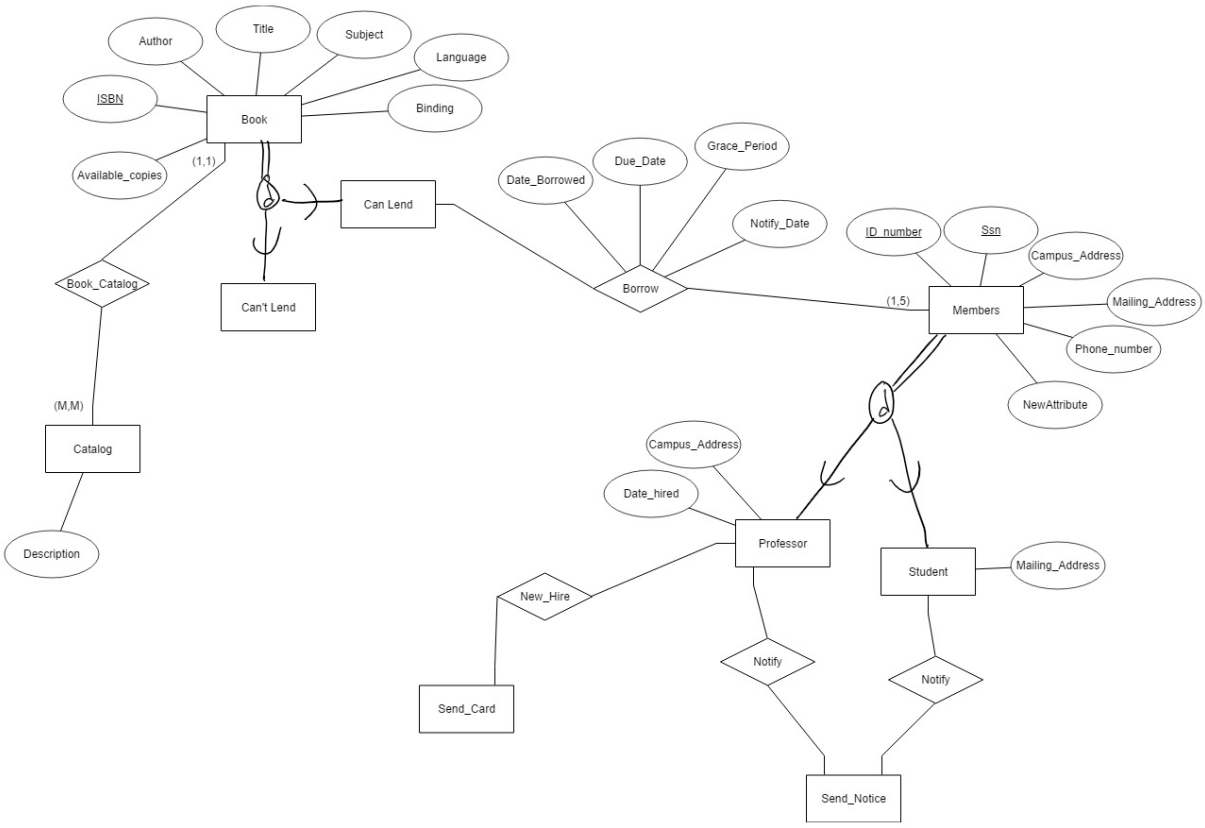
8.19



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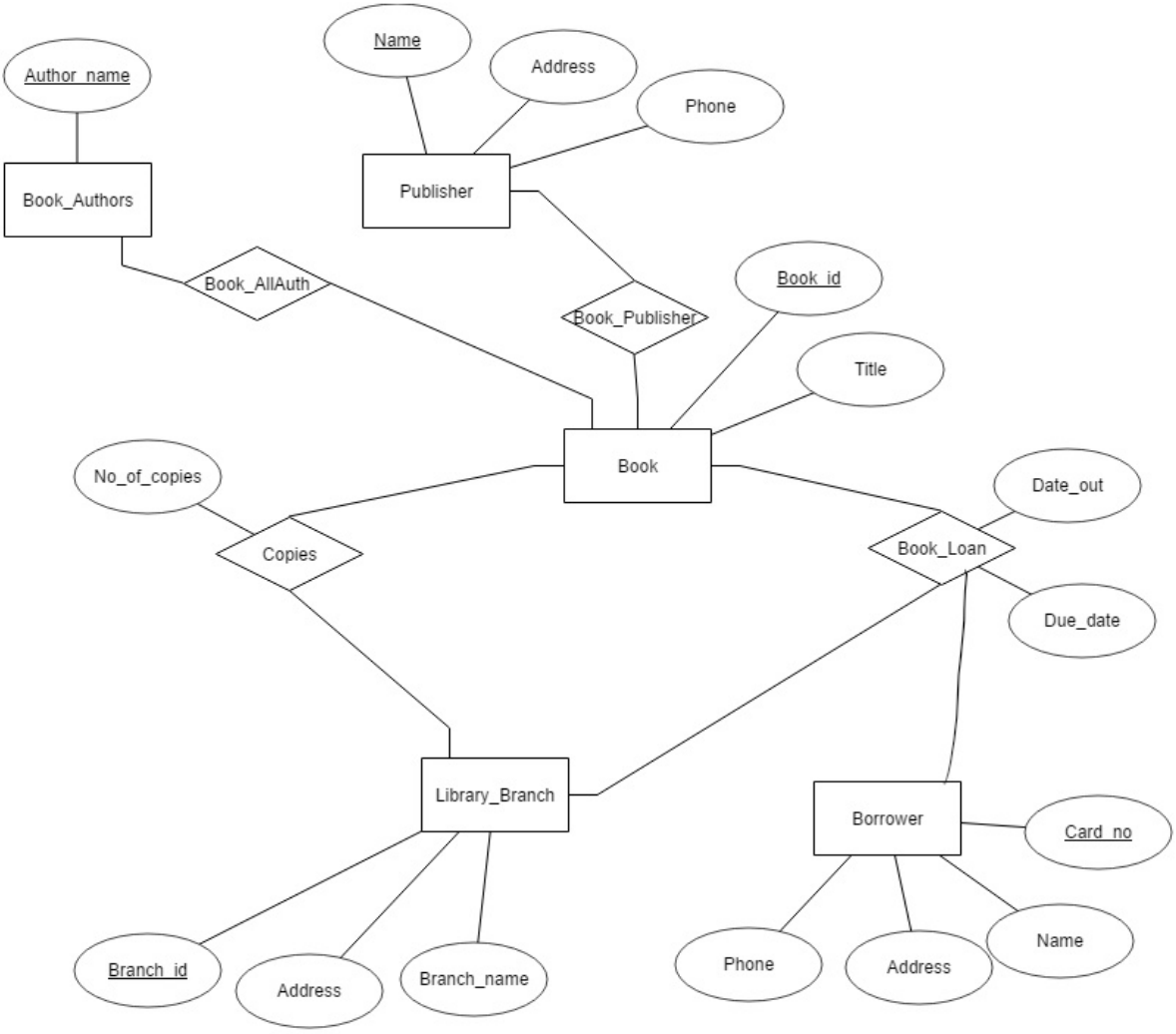
9.3



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9.4