In-class Exercises: Entity/Relationship Model

1. Translate this Entity-Relationship diagram into a relational schema. For each relation, provide its name, attributes and keys. To indicate a key, underline all attributes that are part of the key using a single line. Also include all referential integrity constraints. To answer this question, use relational notation, not SQL notation.

- **Dealership**
  - Attributes: dID, dName
  - Keys: dID

- **Car**
  - Attributes: VIN, model, year
  - Keys: VIN

- **Customer**
  - Attributes: name, email, phone
  - Keys: name

- **Salesperson**
  - Attributes: sID, sName
  - Keys: sID

- **Sale**
  - Attributes: date, amount
  - Keys: sale ID

- **Works at**
  - Attributes: dID, sID, salary
  - Keys: (dID, sID)

- Referential Integrity Constraints:
  - A car sale cannot involve more than one salesperson. **True**
  - There can be two cars with the same VIN as long as the model and year are different. **True**
  - A salesperson can work at any number of dealerships. **True**
  - There can’t be more salespeople than dealerships. **False**
  - There can be multiple sales on the same date. **True**
  - Two salespeople can have the same sID as long as they work at different dealerships. **False**
  - This model contains a weak entity set. **True**
  - The works at relationship is a one-to-many relationship. **True**
2. What would happen if we the customer’s phone attribute had (1,N) cardinality? What would the relational schema look like?