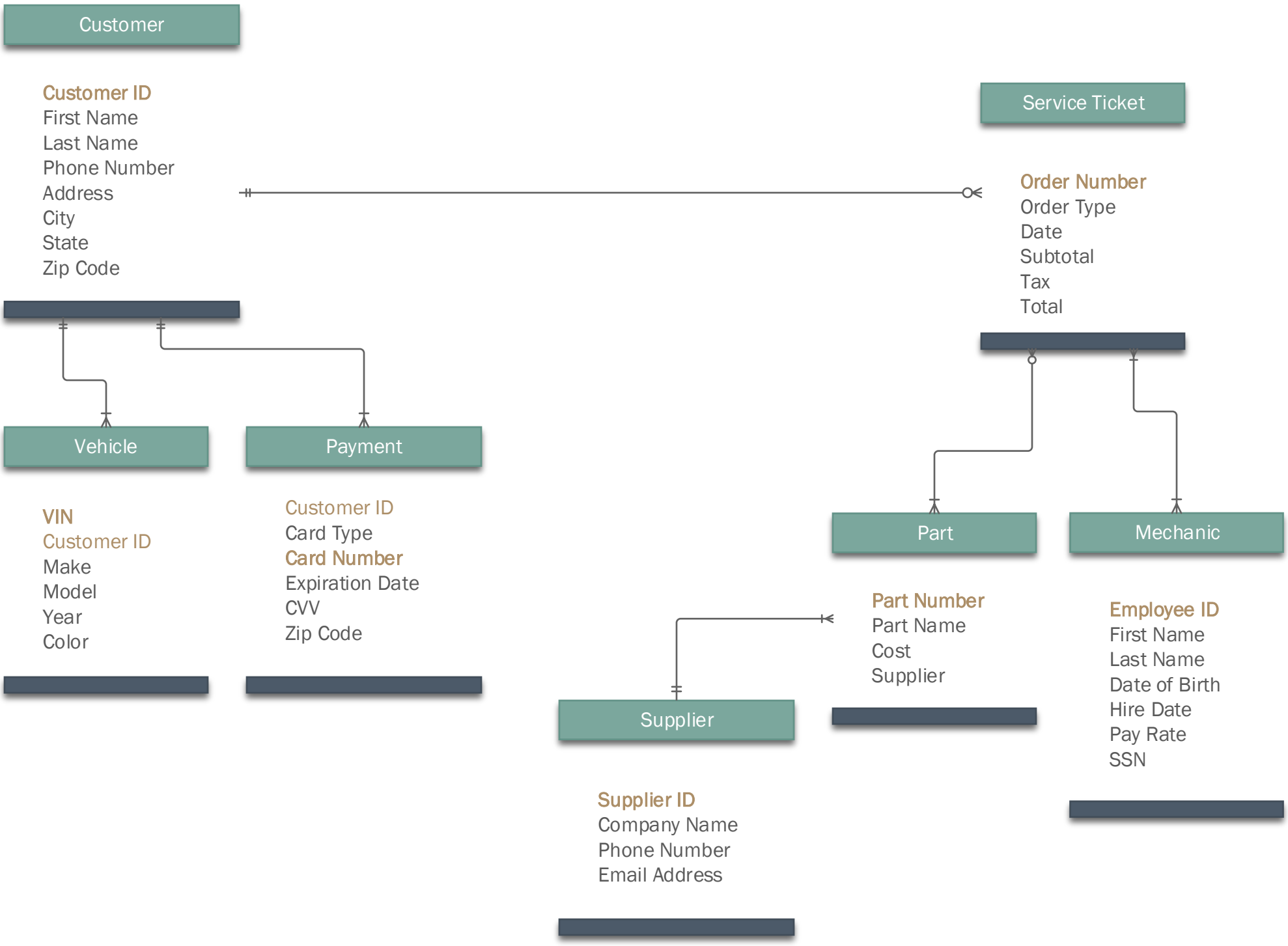

ERD Diagram – Car Mechanic

CIS310 – Database Design
Dr. Dey, Fall 2018
ERD Diagram
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This ERD is a mockup of a hypothetical Auto Shop or mechanic's records, containing information on customers, their vehicles and payment information, service tickets, the employees, service parts, and suppliers. We have included several instances of different data types, foreign and primary keys, and relationships. As each relationship is visually represented in diagram form above, we will not review every instance of a relationship.

As you can see, there is a one (& only one) to many relationship between the Customers table and the Service Ticket table, the Vehicle table, and the Payment table. This can be explained through the simple logic that a single customer will be able to have more than just one vehicle or payment method. Assume that a customer owns several cards, or that a customer has a credit card and a debit card, or that their spouse has separate credit and debit cards. In the case of the Service Ticket table, the relationship is one and only one to zero or many. This is because a customer does not have to submit a service ticket, so a customer's records could show no relationship to a service ticket instance. On the other hand, one customer could be loyal to this specific mechanic, and could have their car serviced here once every six months. This would create many records for the one customer, hence the relationship we have specified.

There are other examples that are self-explanatory, such as one or many mechanics to one or many service orders. These tables and relationships of primary keys and foreign keys eliminate the possibility of data redundancy, and ensures that all records are correct. Customers are only charged for their specific service tickets, mechanics are paid their specific wages, and parts are only ordered when needed. These consistencies ensure the data is kept updated and correct, and this feat is only possible through these specified relationships.