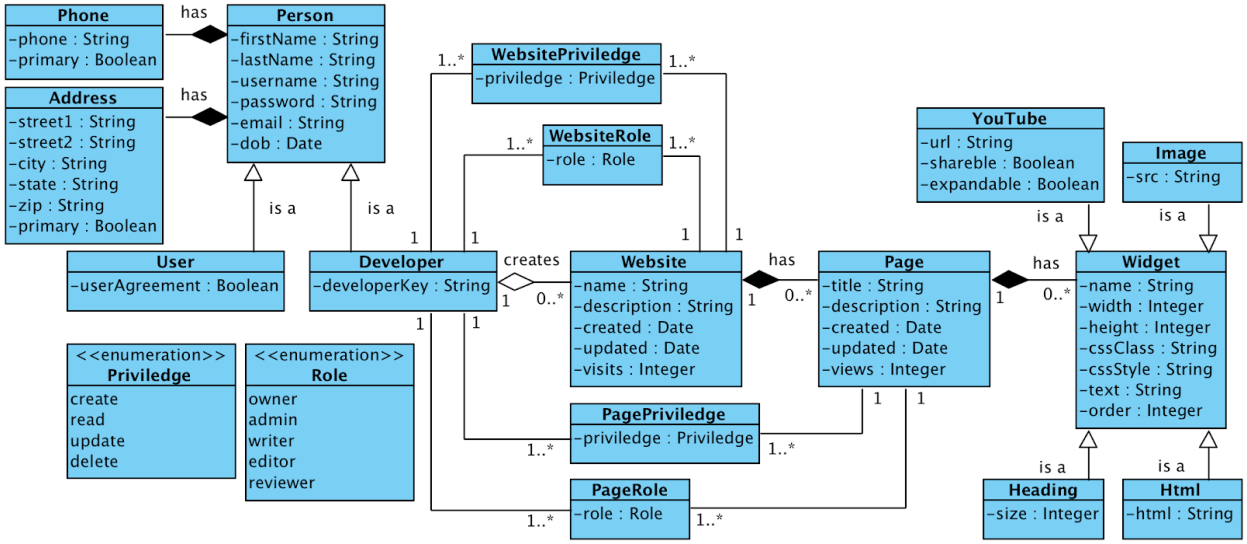
JDBC Assignment

Consider the UML class diagram shown below. Create the corresponding Java Data Model that implements the equivalent relational model, fulfills the use cases, implements the relations, and enforces the constraints. Implement Data Access Objects (DAOs) that encapsulate access to the database applying best practices discussed in class. A link to this assignment can be found here.

UML Class Diagram

Consider the class diagrams below



The UML diagram defines several associations between various classes using lines and symbols. These are implemented in SQL using primary and foreign key fields. In Java you'll also capture the primary key fields id, but instead of the foreign key fields, you'll capture some collection of instances of the child class. As an example, consider the relation between entities Website and Page illustrated below. The UML class diagram captures the association using a line and the cardinality of how many of each participate in relation. The diagram says that each Website instance has zero or more Page instance.

SQL implements the relation using primary and foreign keys. In the example, the **Page** table declares foreign key **websiteId** which references to the **id** field in the **Website** table. If we consider the relation between websites and pages as a whole/parts relation, where pages are the various parts that make a whole Website, then the relation implementation states that each part (page) know who the whole is (website). The Java implementation captures the relation between websites and pages by declaring a collection of pages in the **Website** class. That is, each **Website** instance has a complete list of references to its **Page** instance. Notice the difference in the direction of the relation between the SQL and the Java relation implementation. Whereas in the SQL implementation the relation is from the part to the whole, e.g., page records have foreign key references to websites, in the Java implementation, the relation goes from the whole to the parts, e.g., the websites have a collection of references to page instances. Additionally, the Java implementation also can declare a reference from the page to the website which matches the SQL implementation, but this is less common in object oriented solutions.

UML	SQL	Java