1 Exploring the Course Management System (CMS)

1. There are 6 classes in the data model of CMS: Course, CourseMark, CourseMarkKey, Person, Professor, and Student.
2. Professor and Student are subclasses of Person.
3. There are 6 relations in the database: Course, Prerequisite, Professor, Student, Teaches, and Transcript.
4. Person is a mapped superclass, and since it's not a relation in the database, Professor and Student inherit its attributes. Professor is an entity and its attributes profId, lastName, firstName, email, and office are columns. Student is also an entity with attributes studentId, lastName, firstName, and email.
5. Professors and Students satisfy a disjoint condition. In the class Student, there is no inheritance or any stored instance from the Professor table, and Professor the class does not map to the Student table. There are no common keys. The covering condition is not satisfied because the superclass of Professor and Student, Person, only defines shared attributes but does not define that each Person is either a Professor or Student.
6. The database is stored in the Microsoft Access (.mdb) format.
7. This file is being used to connect Java objects to the Access database and its tables, as well as automate SQL generation. The mapping elements link the Java classes to their corresponding database tables.
8. @Getter, @NoArgsConstructor, @NonNull and @Setter. These functionalities are used to automatically create getter and setter methods for fields of a class, check for null values, and create no argument constructors for a class.