CMSC 424 Homework 3
Due: Tuesday, March 8 @ midnight

SQL query 1: Write a query that constructs a view that summarizes the following information about a country: Country name, Country code, GDP, inflation rate, name of capital city, population of capital city.

SQL query 2: Write a query that finds all countries that are exactly 3 countries away from Germany. In other words, if country A is included in the result, it must border country B which borders country C which borders Germany. Also, country A cannot border Germany itself, nor can it border another country which directly borders Germany. Finally, A cannot be Germany either.

Note: This query is a generalization of a query from Homework 2.
Note: This query is an example of a question might ask of data organized as a graph (rather than in a relational form). Clearly, the relational model limits our ability to ask such complex queries.

E-R diagrams: Please construct an ER diagram for a database that stores information about car trips. Specifically, for each trip you want to store the origin and destination, distance, the reason for the trip, person who drove, the date of the trip, car used, and gas mileage. Also, for each car you want to record the average gas mileage, number of trips, overall distance driven, and distance to the next service. Similarly, for each person you want to record the number of trips, total miles driven, and cars they drove. Please indicate the cardinality constraints (many-to-one, one-to-one) and participatory constraints (are any relationships partial).

Conversion to Relational Schema: Convert the E-R diagram you constructed to a relational schema.

Grading: This homework will not be fully graded. Any on-time submission that represents a good-effort attempt at answering the questions will receive full credit.

Late Policy: 1 day late - 10% off, 2 days late - 20% off, 3 days late - no credit
Submission:
You must submit your homework through http://submit.cs.umd.edu
Unlike other classes, the server won't be able to test your code (hard to do with SQL).
Return each query as a separate .sql file named, for example: query1.sql, query2.sql, ...

For the E-R diagram part of the homework - please submit a PDF, either created with a word processor (preferred), or a scanned hand-written figure.