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The main topic for this exercise is *Datalog*, as described in the textbook and its Web supplement.

- 1. List the members of your group below. Underline your name.
- 2. Given schema R(A, B, C), S(D, E), provide a Datalog equivalent of the algebra query $\pi_{AC}(R \underset{C = D}{\bowtie} S)$.

3. Outline an algorithm for converting an algebra query to an equivalent Datalog one.

4. Consider the following Datalog program and database instance:

 $rpath(x,y) \leftarrow Edge(x, y, red).$ $rpath(x,y) \leftarrow rpath(x,z), rpath(z,y).$

- (a) Exhibit a minimal fixedpoint and a nonminimal fixedpoint for *rpath*.
- (b) Treating the Datalog rules as logical sentences (\leftarrow being the logical if), exhibit a nonminimal model and a minimal model that satisfies these sentences.

Edge		
S	D	color
1	2	red
1	5	green
2	3	green
2	4	red
3	1	red
3	2	blue
3	4	green
4	1	red
5	3	red