CS 405G: Introduction to database systems Assignment 3

Assigned: Sep. 26th, 2007 Due: Oct . 3rd, 2007

Submission instructions: Please try to prepare the assignment in word document (handwritten homework is also acceptable). Print and bring them to class on the due date. Put the course number and your name at the top left corner of the first page of your homework. Please follow the rules in the course syllabus regarding late homework and plagiarism.

Problem 1 (70 points) The following schemas describe Presidents, Judges and the appointment relationships between them.

Presidents(*PName* : string, *PDateOfBirth* : int, *Party* : string, *HomeState* : string) Judges(*JName* : string, *JDateOfBirth* : int, *LawSchool* : string) Appoints(*PName* : string, *JName* : string, *Date* : integer)

Formulate the following queries on these schemas in (a) the relational algebra and (b) SQL.

- 1. Retrieve the names of all the presidents.
- 2. Retrieve the names of all the judges graduated from Yale or Harvard.
- 3. Retrieve the names of the presidents who appointed judges from both Yale and Harvard?
- 4. List the number of judges graduated from each law school.
- 5. Retrieve the pairs of names of judges attended the same law school
- 6. What are the political parties whose presidents only appointed judges from Yale
- 7. What are the names of the presidents who appointed exactly two judges?
- 8. What are the names of the presidents who never appointed a judge?
- 9. Retrieve the names of judges that were appointed by more than 2 presidents.
- 10. List the oldest of judges graduated from each law school appointed by presidents in the Republican Party.

Problem 2 (30 points) Book: 8.21 (page 291). Please also write relational algebra for each query.