Write the following query in relational algebra using the following university schema:

classroom(building, room\_number, capacity)

department(*dept\_name*, building, budget)

course(course\_id, title, dept\_name, credits)

instructor(ID, name, dept\_name, salary)

section(course\_id, sec\_id, semester, year, building, room\_number, time\_slot\_id)

teaches(ID, course\_id, sec\_id, semester, year)

student(ID, name, dept\_name, tot\_cred)

takes(ID, course\_id, sec\_id, semester, year, grade)

advisor(s\_ID, i\_ID)

time\_slot(time\_slot\_id, day, start\_time, end\_time)

prereq(course\_id, prereq\_id)

**Please submit your queries through Blackboard. It is due on Thursday, 2/1/18**

1. Find the title of courses in the Comp. Sci. department that have 3 credits.
2. Find the highest salary of among all instructors.
3. Find all instructors earning the highest salary.
4. Find the IDs of all students who were taught by an instructor named ‘Sullivan’. (join multiple tables)
5. Find the IDs and names of all students who have **not** taken any course offering before 2009.(using set difference)
6. For each department, find the maximum salary of instructors in that department. You may assume that every department has at least on instructor.
7. Find the lowest, across all departments, of the per-department maximum salary computed by the preceding query. (use assignment operation to get the maximum salary per department first)
8. Find the enrollment of each section that was offered in Fall 2009.
9. Find the maximum enrollment i.e. the number of students, across all sections, in Fall 2009.
10. Find the sections that had the maximum enrollment in Fall 2009.