

Big Data Management: Homework 4

1. These are the requested SQL statements:
 - a.

```
SELECT Name
FROM Student
WHERE Class = 4 AND Major = 'CS'
```
 - b.

```
SELECT Course_name
FROM Course INNER JOIN Section ON Course.Course_number =
Section.Course_number
WHERE Instructor = 'King' AND (Year = '07' OR Year = '08')
```
 - c.

```
SELECT Course_number, Semester, Year,
COUNT(Grade_report.Student_number) AS NumberOfStudents
FROM Section INNER JOIN Grade_report ON Section.Section_identifier =
Grade_report.Section_identifier
WHERE Instructor = 'King'
GROUP BY Grade_report.Section_identifier
```
 - d. For this query I assume that a course is completed by a student if the grade is better than "F".

```
SELECT Name, Course_name, Course.Course_number, Credit_hours, Year,
Grade
FROM Student, Course, Section, Grade_report
WHERE Student.Student_number = Grade_report.Student_number AND
Grade_report.Section_identifier = Section.Section_identifier AND
Section.Course_number = Course.Course_number AND Class = 4 AND
GRADE != 'F'
ORDER BY Name
```
2.

```
CREATE VIEW myView AS
SELECT Project_Name, Department_Name, COUNT(Employee_SSN) AS
NumberOfEmployees, SUM(Hours) AS HoursPerWeek
FROM Employee, Department, Project, Works_on
WHERE Employee.SSN = Works_on.Employee_SSN AND Works_on.Project_NO =
Project.Project_NO AND Project.Department_NO = Department.Department_NO
GROUP BY Project.Project_NO
```
3. The requested queries are:
 - a.

```
SELECT pname
FROM Suppliers, Parts, Catalog
WHERE Suppliers.sid = Catalog.sid and Catalog.pid = Parts.pid
```
 - b.

```
SELECT P.pname
FROM Suppliers AS S, Parts AS P, Catalog AS C
WHERE S.sid = C.sid AND C.pid = P.pid AND S.sname = 'Acme Widget
Suppliers' AND NOT EXISTS (SELECT * FROM Catalog AS C1, Suppliers
AS S1 WHERE C1.sid = S1.sid AND P.pid = C1.pid AND S1.sname != 'Acme
Widget Suppliers')
```

c. `SELECT DISTINCT S.sname, COUNT(C.sid)
FROM Suppliers AS S JOIN Catalog AS C ON S.sid=C.sid
WHERE ((SELECT COUNT(*) FROM Catalog AS C1, Parts AS P WHERE
P.color='GREEN' AND P.pid=C1.pid AND C1.sid=C.sid)= (SELECT
COUNT(*) FROM Catalog C2 WHERE C2.sid=C.sid))
GROUP BY S.sname`

4. D