

# CS313, Lab - 2

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## 1

classroom: building, room\_number  
department: dept\_name  
course: course\_id, dept\_name  
instructor: ID, name, dept\_name  
section: course\_id, sec\_id, semester, year, building, room\_number  
teaches: ID, course\_id, sec\_id, semester, year  
student: ID, dept\_name, name  
takes: ID, course\_id, sec\_id, semester, year  
advisor: s\_ID, i\_ID  
time\_slot: time\_slot\_id, day, start\_hr, start\_min  
prereq: course\_id, prereq\_id

## 2

Student Name: Zhang  
Student ID: 00128  
Department Name: Comp. Sci.  
Courses Taken: CS101, CS347  
Course Names: CS101 → Intro. to Computer Science , CS347 → Database System Concepts  
Grades: CS101 → A, CS347 → A-  
Credits: CS101 → 4, CS347 → 3  
Instructors Names: CS101 → Srinivasan, Katz, Brandt & CS347 → Srinivasan, Katz, Brandt  
Year: 2017  
Semester: Fall  
Section ID: 1  
Total Credits: 102

Advisor: Katz  
Building: Taylor  
Budget: 100000

The following queries were executed to get above information:

```
select * from student natural join takes
select * from student natural join department
select * from student natural join classroom
select * from student natural join course
select * from department natural join instructor
select * from course natural join instructor
```

Alternatively, the query can be optimized as follows:

```
select * from student,department,takes,advisor,instructor where
student.name = 'Zhang' and advisor.s_ID = student.ID and student.ID = takes.ID and d
instructor.ID = advisor.i_ID
```

**3**

**4**

- (a) 

```
select distinct ID as Student_ID, name as Student_Name from (select
distinct * from student natural join classroom, department where
student.dept_name == department.dept_name and department.building ==
classroom.building) where building == 'Taylor' and dept_name == 'Comp.
Sci.'
```
- (b) 

```
select name as Student_Name from (select distinct * from student
natural join takes where student.ID==takes.ID) where grade=='A'
intersect select name from (select distinct * from student natural
join takes where student.ID==takes.ID) where grade=='C'
```
- (c) 

```
select distinct building,room_number from (select distinct * from classroom
natural join section,time_slot where
time_slot.time_slot_id==section.time_slot_id) where day=='W'
```