

# SQL



## EXERCISES

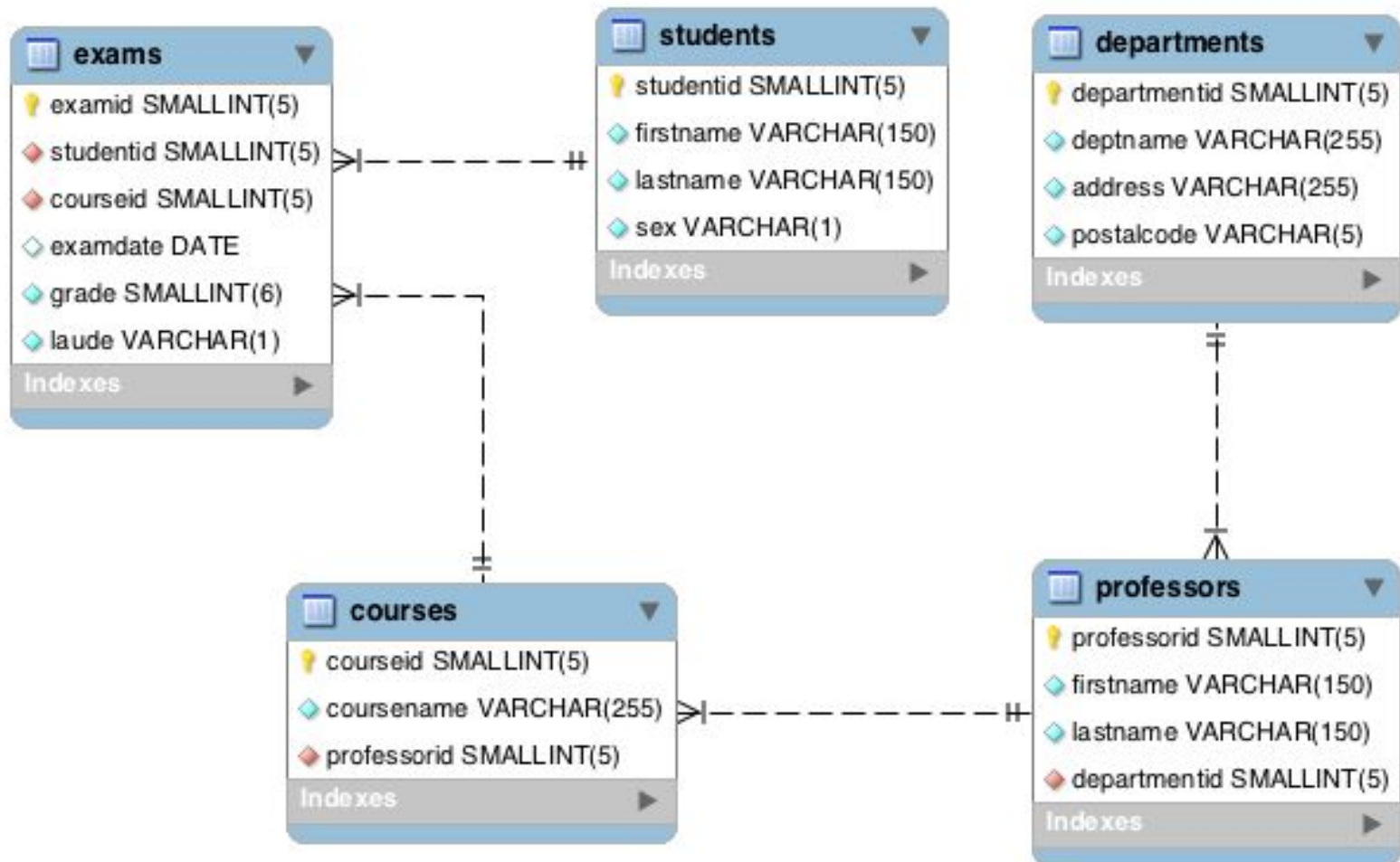
# SQL - Some tips



## Quick reference for MySQL SQL dialect:

1. Date format: '2014-05-03'
2. Mostly used grouping functions:
  - sum(<col\_name>)
  - avg(<col\_name>)
  - max(<col\_name>), min(<col\_name>)
  - count(\*)
3. Mostly used SQL functions (<arg> = <value> | <col\_name>):
  - concat(<arg1>, <arg2>, ...)
  - year(<arg>), month(<arg>), monthname(<arg>), day(<arg>)

# University DB: schema



# University DB: sample data



| Students  |              |     |
|-----------|--------------|-----|
| <u>ID</u> | Name         | Sex |
| 1         | John Doe     | M   |
| 2         | Jane Doe     | F   |
| 3         | Jack Frost   | M   |
| 4         | Jade Diamond | F   |
| 5         | Jim Carrey   | M   |

| Courses   |                |              |
|-----------|----------------|--------------|
| <u>ID</u> | Name           | ProfessorID* |
| 1         | Statistics     | 3            |
| 2         | Databases      | 1            |
| 3         | DW             | 1            |
| 4         | Math. Analysis | 2            |

| Professors |              |                |
|------------|--------------|----------------|
| <u>ID</u>  | Name         | DepartmentName |
| 1          | Smith A.     | Informatics    |
| 2          | Jones I.     | Mathematics    |
| 3          | McDonalds R. | Mathematics    |

| Exams     |            |           |              |       |       |
|-----------|------------|-----------|--------------|-------|-------|
| <u>ID</u> | StudentID* | CourseID* | Date         | Grade | Laude |
| 1         | 5          | 1         | Jan 15, 2013 | 30    | Y     |
| 2         | 4          | 1         | Jul 3, 2012  | 28    | N     |
| 3         | 5          | 2         | Feb 4, 2015  | 18    | N     |
| 4         | 2          | 1         | Jan 15, 2013 | 23    | N     |
| 5         | 1          | 3         | Sep 29, 2014 | 19    | N     |
| 6         | 1          | 4         | Dec 1, 2013  | 30    | N     |
| 7         | 2          | 2         | Mar 25, 2014 | 27    | N     |
| 8         | 2          | 3         | Sep 29, 2014 | 29    | N     |
| 9         | 2          | 4         | Dec 1, 2012  | 18    | N     |
| 10        | 5          | 3         | Sep 29, 2014 | 18    | N     |

# SQL exercises - Group A. (1/2)



Referring to the relations in the first slide, write SQL queries to find:

1. Students' names
2. Female students
3. Name of each male student
4. For each course, its names and the related professor's name
5. Names of students who took grades  $> 27$
6. Name and sex of students who passed statistic's exam
7. For each student, the name and the number of exams
8. For professor “Jones”, his name and the number of exams
9. For each student, the name and the average grade

# SQL exercises - Group A. (2/2)



10. For each male student, the names of the courses that he followed
11. Names of students who took exams on Sep 29, 2013 and the names of related courses
12. For each professor, the names of students who followed his courses

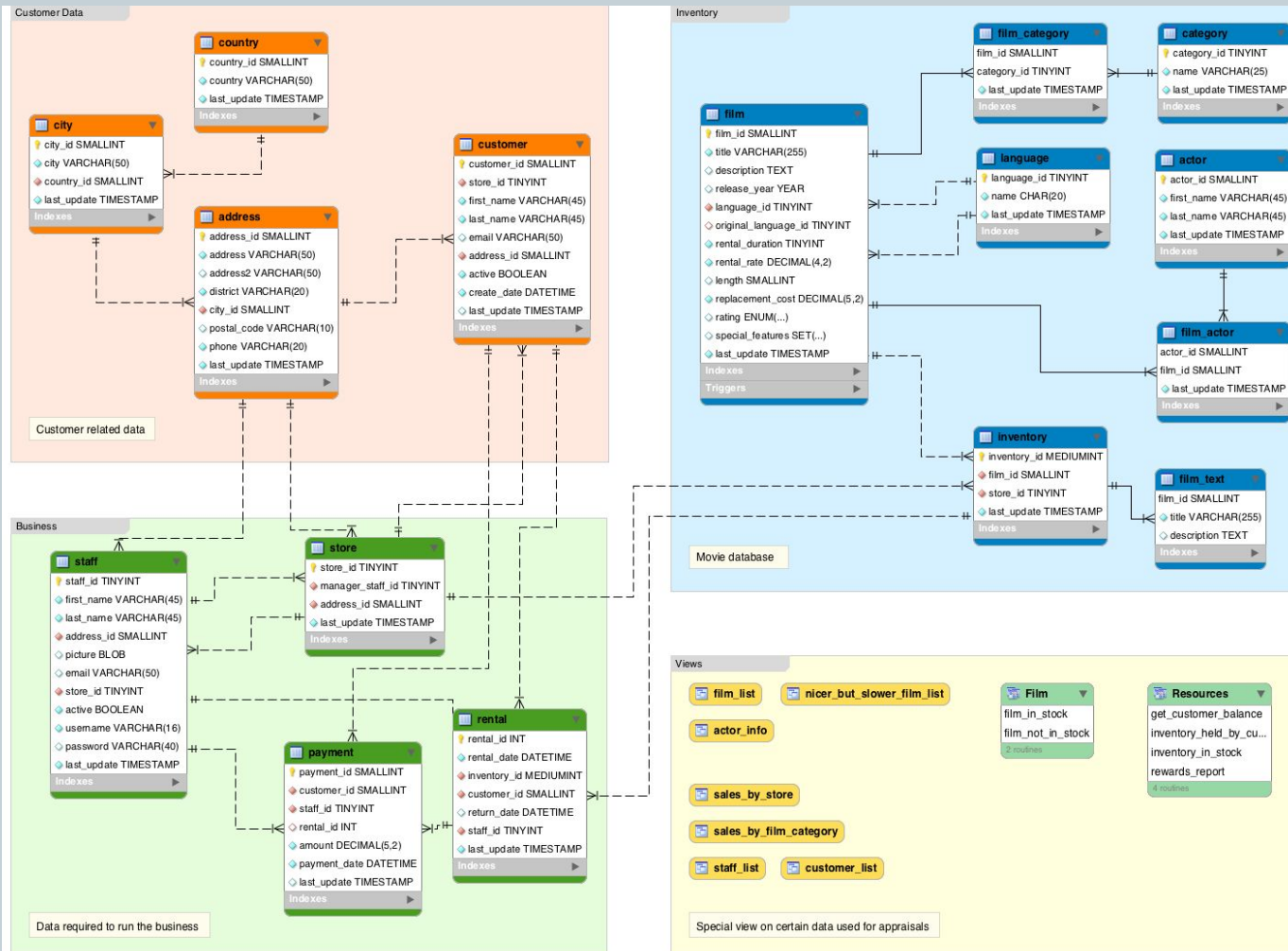
# SQL exercises - Group B.



Referring to the relations in the first slide, write the SQL queries to find:

1. For each professor, the number of male and female students who followed his courses
2. Names and surnames of students who followed courses held by professor “Smith”
3. Name, surname and sex of the students who took the highest grade (30 cum laude) and the name of the course

# Sakila DB: schema





# SQL exercises - Group C.



Referring to the Sakila DB schema, write the SQL queries to find:

1. Find the most rented film
2. The total income from rentals for each country
3. The city and the average rental price for each store
4. The highest number of rentals for a film for each category
5. For each actor, his full name and the name of the city with the highest income for his films