###Group By

1. Contare quanti iscritti ci sono stati ogni anno

```sql
SELECT YEAR(enrolment_date), COUNT(*) FROM students
GROUP BY YEAR(enrolment_date);
```

2. Contare gli insegnanti che hanno l'ufficio nello stesso edificio

```sql
SELECT office_address, COUNT(*) from teachers
GROUP BY office_address;
```

3. Calcolare la media dei voti di ogni appello d'esame (dell'esame vogliamo solo l'`id`)

```sql
SELECT exam_id, FLOOR(AVG(vote)) FROM exam_student
GROUP BY exam_id;
```

4. Contare quanti corsi di laurea ci sono per ogni dipartimento

```sql
SELECT
  departments.id AS id_department,
  departments.name AS nome_department,
  COUNT(degrees.id) AS numero_corsi_laurea
FROM
  departments
LEFT JOIN degrees
       ON departments.id = degrees.department_id
GROUP BY
  departments.id, departments.name
ORDER BY
  departments.id;
```

Join

1. Selezionare tutti gli studenti iscritti al Corso di Laurea in Economia

```sql
SELECT DISTINCT students.*
FROM students
    JOIN exam_student
        ON students.id = exam_student.student_id
    JOIN degrees
        ON students.degree_id = degrees.id
WHERE
  degrees.name LIKE 'Corso di Laurea in Economia';
```

2. Selezionare tutti i Corsi di Laurea Magistrale del Dipartimento di Neuroscienze

```sql
SELECT degrees.*
FROM degrees
      JOIN departments
          ON departments.id = degrees.department_id
WHERE level = 'magistrale'
AND departments.name LIKE 'Dipartimento di Neuroscienze';
```

3. Selezionare tutti i corsi in cui insegna Fulvio Amato (id=44)

```sql
SELECT courses.*
FROM courses
	JOIN course_teacher
		ON courses.id = course_teacher.course_id
	JOIN teachers
		ON course_teacher.course_id = teachers.id
WHERE teachers.id = 44;
```

4. Selezionare tutti gli studenti con i dati relativi al corso di laurea a cui sono iscritti e il relativo dipartimento, in ordine alfabetico per cognome e nome

```sql
SELECT DISTINCT
  students.*,
  degrees.name AS corso_di_laurea,
  departments.name AS dipartimento
FROM
  students
	JOIN exam_student
		ON students.id = exam_student.student_id
	JOIN exams
		ON exam_student.exam_id = exams.id
	JOIN degrees
		ON exams.course_id = degrees.id
	JOIN departments
		ON degrees.department_id = departments.id
ORDER BY
  students.surname, students.name;
```

5. Selezionare tutti i corsi di laurea con i relativi corsi e insegnanti

```sql
SELECT
  degrees.name AS corso_di_laurea,
  courses.name AS corso,
  teachers.name AS insegnante, teachers.surname
FROM
  degrees
	JOIN courses
		ON degrees.id = courses.degree_id
	JOIN course_teacher
		ON courses.id = course_teacher.course_id
	JOIN teachers
		ON course_teacher.course_id = teachers.id;
```

6. Selezionare tutti i docenti che insegnano nel Dipartimento di Matematica (54)

```sql
SELECT
  teachers.*,
  departments.name AS dipartimento
FROM
  teachers
	JOIN course_teacher
		ON teachers.id = course_teacher.teacher_id
	JOIN courses
		ON course_teacher.course_id = courses.id
	JOIN degrees
```

```
            ON courses.degree_id = degrees.id
      JOIN departments
            ON degrees.department_id = departments.id
WHERE
  departments.name LIKE 'Dipartimento di Matematica';
```