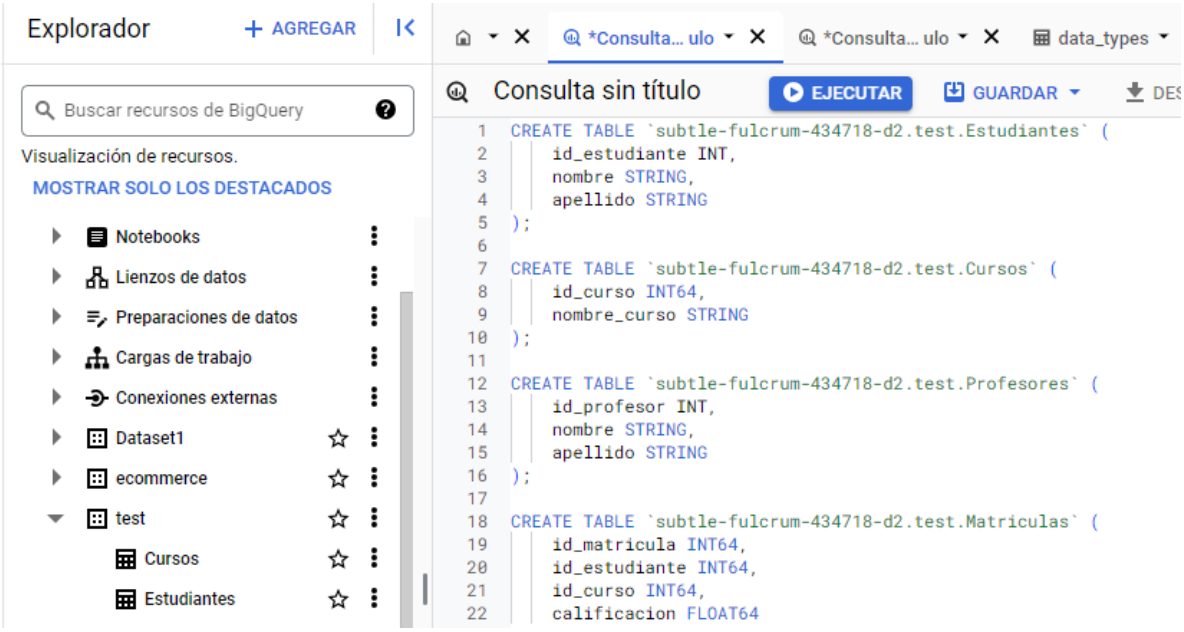
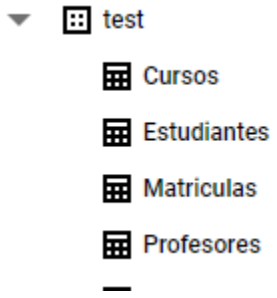
Project of an entity relationship diagram of a university with Big Query

Using **Big Query**, generate an entity relationship diagram of a university needing a system to manage academic information, including students, faculty, courses, enrollment, and grades. Allow to register the subjects that each student takes and the grades obtained, as well as manage the teachers in charge. An example describes an SQL query that returns the name of the course and the name of the student who obtained the best grade in the course.

Table creation





INSERT INTO `subtle-fulcrum-434718-d2.test.Estudiantes` (id_estudiante, nombre, apellido)

```
VALUES
  (1, 'Juan', 'Pérez'),
  (2, 'Ana', 'Gómez'),
  (3, 'Luis', 'Martínez'),
  (4, 'Sofía', 'López'),
  (5, 'Carlos', 'Navarro'),
  (6, 'María', 'Díaz'),
  (7, 'Jorge', 'Morales'),
  (8, 'Patricia', 'Castro'),
  (9, 'Roberto', 'Fernández'),
  (10, 'Lucía', 'Pérez');


INSERT INTO `subtle-fulcrum-434718-d2.test.Cursos` (id_curso, nombre_curso)
VALUES
  (202401, 'Matematicas'),
  (202402, 'Naturales'),
  (202403, 'Lenguajes');


  INSERT INTO `subtle-fulcrum-434718-d2.test.Profesores` (id_profesor,
nombre, apellido)
VALUES
  (1001, 'Alonso', 'Jimenez'),
  (1002, 'Alicia', 'Garcia'),
  (1003, 'Gris', 'Fernandez');
```

```
INSERT INTO `subtle-fulcrum-434718-d2.test.Matriculas` (id_matricula,
id_estudiante, id_curso, calificacion)
VALUES
  (20241001, 1, 202401, 8.0),
  (20241002, 1, 202402, 9.2),
  (20241003, 1, 202403, 10.0),
  (20241004, 2, 202401, 7.2),
  (20241005, 2, 202402, 6.8),
  (20241006, 2, 202403, 9.9),
  (20241007, 3, 202401, 7.5),
  (20241008, 3, 202402, 7.2),
  (20241009, 3, 202403, 7.8),
  (20241010, 4, 202401, 9.3),
  (20241011, 4, 202402, 9.1),
  (20241012, 4, 202403, 9.8),
  (20241013, 5, 202401, 8.2),
  (20241014, 5, 202402, 9.0),
  (20241015, 5, 202403, 10.0),
  (20241016, 6, 202401, 8.0),
  (20241017, 6, 202402, 8.5),
  (20241018, 6, 202403, 8.4),
  (20241019, 7, 202401, 6.2),
  (20241019, 7, 202402, 7.5),
  (20241019, 7, 202403, 8.6),
  (20241020, 8, 202401, 6.9),
```

(20241021, 8, 202402, 6.1),

(20241022, 8, 202403, 6.9),

(20241023, 9, 202401, 6.8),

(20241024, 9, 202402, 7.8),

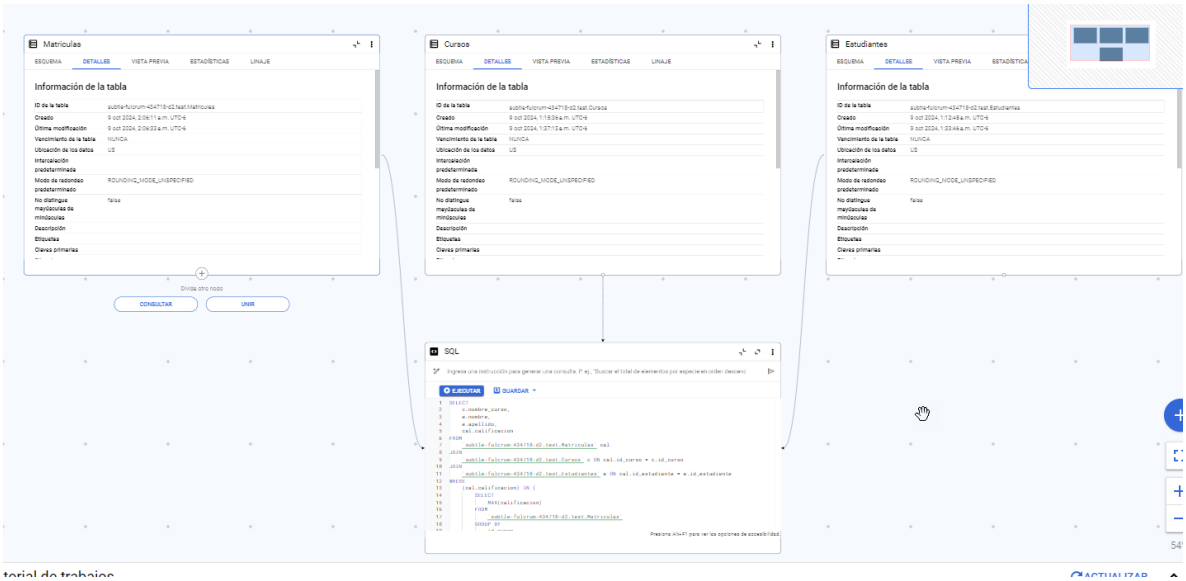
(20241025, 9, 202403, 7.7),

(20241026, 10, 202401, 6.8),

(20241027, 10, 202402, 6.6),

(20241028, 10, 202403, 7.9);

Project of an entity relationship diagram of a university with Big Query



MEJORES_CALIFICACION... EJECUTAR GUARDAR CONSULTA DESCARGAR COMPA

```sql
SELECT
    c.nombre_curso,
    e.nombre,
    e.apellido,
    cal.calificacion
FROM
    `subtle-fulcrum-434718-d2.test.Matriculas` cal
JOIN
    `subtle-fulcrum-434718-d2.test.Cursos` c ON cal.id_curso = c.id_curso
JOIN
    `subtle-fulcrum-434718-d2.test.Estudiantes` e ON cal.id_estudiante = e.id_estudiante
WHERE
    (cal.calificacion) IN (
        SELECT
            MAX(calificacion)
        FROM
            `subtle-fulcrum-434718-d2.test.Matriculas`
        GROUP BY
            id_curso
    );
```

Resultados de la consulta

INFORMACIÓN DEL TRABAJO | RESULTADOS | GRÁFICO | JSON | DETALLES DE LA EJECUCIÓN | GR

Fila	nombre_curso	nombre	apellido	calificacion
1	Matematicas	Sofía	López	9.3
2	Naturales	Juan	Pérez	9.2
3	Lenguajes	Juan	Pérez	10.0
4	Lenguajes	Carlos	Navarro	10.0