1. Students

	Type	Key	Nullability	Default
StudentID	Int	Unique	Yes	Null
Name	Str	None	Yes	Null
Email	Str	None	Yes	Null
Years	Int	None	Yes	Null
Concentration	Str	None	Yes	Null

2. Faculties

	Type	Key	Nullable	Default
FacultyID	Int	Unique	Yes	Null
Name	Str	None	Yes	Null
Email	Str	None	Yes	Null
Title	Str	None	Yes	Null
Department	Str	None	Yes	Null

3. Courses

	Type	Key	Nullability	Default
CourseID	Int	Unique	No	Null
CourseName	Str	None	No	Null
Professor	Int	Faculties.FacultyID	Yes	Null
Semester	Str	None	No	Null

4. Enrollment

	Type	Key	Nullability	Default
CourseID	Int	Unique(StudentID), Courses.CourseID	No	Null
StudentID	Int	Unique(CourseID), Students.StudentID	No	Null

CONNECT TO DATABASE

POST /connect

```
{
  "host": "localhost",
  "port": 3306,
  "username": "root",
  "password": "password",
  "database": "name"
}
```

CREATE TABLE:

<u>Students</u>
POST /upload

```
{
  "name": "Students",
  "csv": "https://srv-file18.gofile.io/download/jfJlRj/student.csv"
}
```

POST /metadata/uniquekey

```
{
  "name": "Students",
  "keys": "StudentID",
  "key_names": "StudentID"
}
```

PUT /metadata

```
{
  "name": "Students",
  "columns": "StudentID",
  "types": "type",
  "values": "int"
}
```

Faculties

POST /upload
```
{
  "name": "Faculties",
  "csv": "https://srv-file12.gofile.io/download/Z16DiS/Faculties.csv"
}
```

POST /metadata/uniquekey
```
{
  "name": "Faculties",
  "keys": "FacultyID",
  "key_names": "FacultyID"
}
```

PUT /metadata
```
{
  "name": "Faculties",
  "columns": "FacultyID",
  "types": "type",
  "values": "int"
}
```

Courses

POST /table
```
{
  "name": "Courses",
  "columns": "CourseID,CourseName,Professor,Semester",
  "uniques": "CourseID"
}
```

PUT /metadata
```
{
  "name": "Courses",
  "columns": "CourseID,CourseID,CourseName,Professor,Semester",
  "types": "type,nullable,nullable,type,nullable",
  "values": "int,false,false,int,false"
}
```

POST /metadata/foreignkey
```
{
  "name": "Courses",
  "keys": "Professor",
  "targets": "Faculties.FacultyID",
  "key_names": "Faculty_ID"
}
```

Enrollment
POST /table
```
{
  "name": "Enrollment",
  "columns": "CourseID,StudentID",
  "uniques": ""
}
```

PUT /metadata
```
{
  "name": "Enrollment",
  "columns": "CourseID,CourseID,StudentID,StudentID",
  "types": "type,nullable,type,nullable",
  "values": "int,false,int,false"
}
```

POST /metadata/foreignkey
```
{
  "name": "Enrollment",
  "keys": "CourseID,StudentID",
  "targets": "Courses.CourseID,Students.StudentID",
  "key_names": "Course_ID,Student_ID"
}

//{
//  "name": "Enrollment",
//  "keys": "StudentID",
//  "targets": "Students.StudentID",
//  "key_names": "Student_ID"
//}
```

POST /metadata/uniquekey
```
{
  "name": "Enrollment",
  "keys": "(CourseID,StudentID)",
  "key_names": "Enrollment_ID"
}
```
PUT /metadata
```
{
  "name": "Courses",
  "columns": "CourseID,CourseID,CourseName,Professor,Semester,Semester",
  "types": "type,nullable,nullable,type,type,nullable",
  "values": "int,false,false,int,date,false"
}
```

GET /metadata/uniquekey/Enrollment

GET /metadata/Enrollment

ADD COLUMN
PUT /table

```
{
  "name": "Courses",
  "columns": "TAs",
  "operation": "insert"
}
```

ADD ROW
POST /table/data

```
{
  "name": "Courses",
  "columns": "CourseID,CourseName,Professor,Semester,TAs",
  "values": "4441,Advanced Database Technology,102,2020-03-03,John"
}
{
  "name": "Courses",
  "columns":
"CourseID,CourseName,Professor,Semester,TAs,Name,Email,Title,Department",
  "values": "6789,Martian Database Technology,666,2120-03-03,Nobody,Martian
Lord, iamlord@mars.edu,Lord,Marsian Empire"
}
{
  "name": "Courses",
  "columns":
"CourseID,CourseName,Professor,Semester,TAs,Name,Email,Title,Department,Stud
entID",
  "values": "9876,Venusian Database Technology,777,2130-03-03,Aeneas,President
of Venus,aphrodite@nevus.edu,President,United Provinces of Venus,107"
}
```

UPDATE ROW
PUT /table/data

```
{
```

```json
    "name": "Courses",
    "columns": "CourseID,CourseName,Professor,Semester",
    "values": "4567,'Advanced Database Technology',102,'2020-03-03'",
    "condition": "CourseID=4441"
}
```

DELETE ROW

DELETE /table/data

```json
{
    "name": "Courses",
    "condition": "Courses.CourseID=4567"
}
```

GET ROW

GET /table/data
```
{
  "name": "Students"
}
```

GET /table/data
```
{
  "name": "Students"
  "columns": "Email"
}
```

GET /table/data
```
{
  "name": "Students"
  "filter": " Email="john@gatech.edu" "
}
```

GET /table/data
```
{
  "name": "Students"
  "columns": "Name,Email"
  "sort_by": Name
}
```

CREATE JOIN

POST /Join
```
{
  "tables": "courses,Students",
  "columns": "courses.CourseID,Students.StudentID",
  "renames": "Course_id,Student_id",
  "joinType": "inner",
  "match": "courses.CourseID=Students.StudentID",
  "returned_view_name": "view_name"
}
```

CREATE UNION

GET /union   ← NOT save the result as a view, only return data
```
{
  "table_name_A": "Students",
  "columns_A": "Name",
  "table_name_B": "Faculties",
  "columns_B": "Name",
  "returned_view_name": ""
```

```
        }

GET /metadata/{VIEW}                                    ← saved the result as a view
GET /union
        {
          "table_name_A": "Students",
          "columns_A": "Name",
          "table_name_B": "Faculties",
          "columns_B": "Name",
          "returned_view_name": "Student_And_Faculty_Name"
        }
GET /metadata/{VIEW}
```

GROUBY

```
POST /groupby
        {
          "name": "Enrollment",
          "functions": "count(*)",
          "rename": "NumOfClass",
          "group_by": "StudentID",
          "view_name": "GroupBy1"
        }
GET /metadata/{VIEW}
GET /metadata/GroupBy1
POST /join
        {
          "tables": "students,GroupBy1",
          "columns":
        "Students.StudentID,Students.Name,Students.Years,Students.Concentration,Gr
        oupBy1.NumOfClass",
          "renames": "ID,Name,Years,Concentration,Credits",
          "joinType": "partial",
          "match": "GroupBy1.StudentID=Students.StudentID",
          "returned_view_name": "GroupBy2"
        }
GET /metadata/GroupBy2
```

FILTER

```
POST /filter
        {
```

```
            "name": "Groupby2",
            "columns": "Years,Credits",
            "operators": ">,<=",
            "conditions": "2020,4",
            "type": "AND",
            "view_name": "filter_view"
        }
GET metadata/{VIEW}
GET metadata/{filter_view}
```

GET Foreign Key
GET /metadata/foreignkey/Enrollment

DELETE Foreign Key
DELETE /metadata/foreignkey
```
        {
          "name": "Enrollment",
          "key_names": "Course_ID"
        }
```

GET Foreign Key
GET /metadata/foreignkey/Enrollment

GET Unique Key
GET /metadata/uniquekey/Enrollment

DELETE Unique Key
DELETE /metadata/uniquekey
```
        {
          "name": "Enrollment",
          "key_names": "Enrollment_ID"
        }
```

GET Unique Key
GET /metadata/uniquekey/Enrollment

DELETE TABLE
DELETE /table/Enrollment
DELETE /table/Students
DELETE /table/Courses

DELETE /table/Faculties