**What is CORS (in simple terms)?**

**CORS** stands for **Cross-Origin Resource Sharing**.

It is a **security feature** built into web browsers to **prevent unauthorized access to resources** on one domain from a web page running on another domain.

**Simple Explanation with Real-Life Analogy:**

Imagine:

* You (user) are inside your house (website A – e.g., http://myfrontend.com)
* You want to ask your neighbor (website B – e.g., http://myapi.com) for sugar (data)
* Normally, security guards (browser policies) **don’t allow cross-neighbor communication** unless your neighbor says, “It’s okay, I trust this person.”

So, your neighbor puts a signboard (CORS headers) saying:

"Visitors from http://myfrontend.com are allowed to access my kitchen (API)".

Now the guard allows you to fetch sugar (data) from the neighbor.

**Technical Example:**

Suppose your **frontend HTML/JS is hosted at**:  
http://localhost:5500

And your **backend Flask API is running at**:  
<http://localhost:5000>

By default, the browser will **block** this request due to CORS, unless your Flask API says:

Access-Control-Allow-Origin: \*

Or specifically:

Access-Control-Allow-Origin: http://localhost:5500

**How to Enable CORS in Flask + MySQL (cursor-based) CRUD Example**

You just need to install and use **Flask-CORS** package.

**Step 1: Install Flask-CORS**

pip install flask-cors

**Step 2: Modify your Flask app**

Here's how you add CORS to your Flask app:

from flask import Flask, request, jsonify

from flask\_cors import CORS

import mysql.connector

app = Flask(\_\_name\_\_)

CORS(app) # This enables CORS for all routes

# Database connection

def get\_db\_connection():

return mysql.connector.connect(

host="localhost",

user="root",

password="your\_password",

database="your\_database"

)

@app.route('/api/students', methods=['GET'])

def get\_students():

db = get\_db\_connection()

cursor = db.cursor(dictionary=True)

cursor.execute("SELECT \* FROM students")

result = cursor.fetchall()

cursor.close()

db.close()

return jsonify(result)

# Add other CRUD routes...

if \_\_name\_\_ == '\_\_main\_\_':

app.run(debug=True)

**Optional (Allow specific origin only):**

CORS(app, origins=["http://localhost:5500"])

**Summary:**

* CORS prevents your browser from calling other websites’ APIs unless they **explicitly allow** it.
* It is a **security wall** to protect users from malicious cross-site requests.
* In web development, when frontend and backend are hosted on different domains or ports, you must configure CORS properly in your backend.