

**AMERICAN INTERNATIONAL UNIVERSITY–BANGLADESH (AIUB)**

**Faculty of Science and Technology (FST)**

**Department of Computer Science (CS)**

**Course: Web Technologies**

**Lab Task 03: AJAX and JSON Data Exchange Using PHP**

**Instructions:**

- 1. Complete the task using HTML, JavaScript (AJAX), PHP, and JSON.**
- 2. Do not use any database.**
- 3. Data must be exchanged in JSON format only.**
- 4. Push all files to your GitHub repository after completion.**

**Scenario:**

You are developing a dynamic student listing page where student data is fetched from the server without reloading the page. The server will send student data in JSON format, and the client will display it dynamically using JavaScript and AJAX.

**Task Requirements:**

Create the following files:

- index.html – frontend page
- get\_students.php – server-side JSON provider
- students.json – data source

**Part A: JSON Data Source (students.json)**

1. Create a JSON file containing an array of at least 3 student objects.
2. Each object must include:
  - id
  - name
  - email
  - department

**Part B: PHP JSON Provider (get\_students.php)**

1. Read data from students.json.
2. Decode the JSON file into a PHP array.

3. Encode the array back to JSON and send it as a response.
4. Set proper header:

- Content-Type: application/json

### **Part C: Frontend Page with AJAX (index.html)**

1. Create a page with:
  - A button: “Load Student Data”
  - An empty <table> or <div> for displaying student records
2. Use AJAX (XMLHttpRequest or Fetch API) to:
  - Send a request to get\_students.php
  - Receive the JSON response
  - Parse the JSON data
  - Display the student list dynamically in a table
3. Ensure the page does not reload during data fetching.

### **Part D: Error Handling**

1. Display a message if:
  - The JSON file is missing
  - The AJAX request fails
2. Handle empty data gracefully.