

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

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

**Department of Computer Science (CS)**

**Course: Web Technologies**

**Lab Task 01: Introduction to JSON in PHP**

**Instructions:**

- 1. Complete the task using PHP only.**
- 2. Create JSON data, encode, decode, and display it.**
- 3. Save files with .php extension.**
- 4. Push all files to your GitHub repository after completion.**

**Scenario:**

You are building a student information system. You need to represent student data in JSON format to simulate data exchange. This lab introduces JSON encoding and decoding in PHP.

**Part A: PHP Array to JSON**

1. Create an associative array with student information:

- Name
- ID
- Department
- Email

2. Convert the array to JSON string using `json_encode()`.

3. Display the JSON string on the page.

**Part B: JSON to PHP Array**

1. Take the JSON string from Part A.
2. Decode it back to a PHP array using `json_decode()`.
3. Display all values in a well-formatted HTML list.

**Part C: Nested JSON**

1. Create a multi-dimensional array representing 3 students with:

- Name
- ID
- Courses (array of course names)

2. Encode the array to JSON and display it.

3. Decode the JSON back to PHP array and display each student's courses in an HTML table.