

AMERICAN INTERNATIONAL UNIVERSITY BANGLADESH (AIUB)
Faculty of Science and Technology (FST)
Department of Computer Science (CS)
Course: Web Technologies

Lab Task 01: Student Dashboard with JSON Data

Instruction:

- 1. Complete the task**
- 2. After completion, push the code in the GitHub repository.**

Scenario:

A university wants to create a student dashboard that displays academic information stored in JSON format. Build a system that reads JSON data and presents it in an interactive dashboard with charts and tables.

Steps:

Create a student dashboard:

- JSON Data File (students.json)**

```
{
  "students": [
    {
      "id": 1,
      "name": "John Doe",
      "email": "john@example.com",
      "courses": [
        {"code": "CSC101", "name": "Programming", "grade": 85, "credits": 3},
        {"code": "MAT201", "name": "Calculus", "grade": 78, "credits": 4}
      ],
      "gpa": 3.5,
      "semester": "Fall 2024"
    }
    // Add at least 5 students
  ]
}
```

- Frontend (dashboard.html):**

- Search bar to filter students by name
- Display student cards with: name, email, GPA, semester
- Click card to show detailed view
- Detailed view shows:

- All courses in table format
 - Calculate total credits
 - Display grade distribution (A, B, C count)
 - GPA calculation verification
- Use JSON.parse() to process data
- Calculate statistics: average GPA, highest GPA, lowest GPA
- **Features:**
 - Sort students by: Name, GPA (high to low)
 - Filter by semester dropdown
 - Display course count for each student
 - Highlight students with GPA > 3.5
- Use vanilla JavaScript (no jQuery)
- Style with modern CSS