

JavaScript GPA Calculator - Group Project

A modern, responsive GPA Calculator built with pure JavaScript, HTML, and CSS. This application allows users to manage their assignments and track their GPA in real-time with a beautiful, user-friendly interface.

Features

Core Features

- **Add Assignments:** Enter assignment names and grades (out of 5)
- **Real-time GPA Calculation:** GPA updates automatically as you add assignments
- **Assignment Management:** View all entered assignments with grades
- **Console Logging:** Press 'S' to log all data to the browser console
- **Data Persistence:** Assignments are saved using localStorage and persist after page refresh

Bonus Features

- **Responsive Design:** Works perfectly on desktop and mobile devices
- **Color-coded GPA:** Visual feedback based on GPA performance
 - Green (4.5+): Excellent
 - Blue (3.5-4.4): Good
 - Yellow (2.5-3.4): Average
 - Red (below 2.5): Needs improvement
- **Smooth Animations:** Slide-in animations for new assignments
- **Input Validation:** Prevents invalid data entry
- **Keyboard Shortcuts:** Enter key navigation and 'S' key for console logging
- **Remove Assignments:** Delete individual assignments with confirmation

Tech Stack

- **HTML5:** Semantic structure and accessibility
- **CSS3:** Modern styling with gradients, animations, and responsive design
- **Pure JavaScript:** No libraries or frameworks - vanilla JS only
- **localStorage:** Client-side data persistence

How to Use

1. **Open the Application:** Open `index.html` in your web browser
2. **Add Assignments:**
3. Enter an assignment name
4. Enter a grade between 0 and 5
5. Click "Add Assignment" or press Enter
6. **View Your GPA:** See your current GPA update in real-time
7. **Manage Assignments:** View all assignments and remove any if needed
8. **Console Logging:** Press 'S' anywhere on the page to log all data to the browser console
9. **Data Persistence:** Your assignments will be saved and restored when you reload the page

Project Requirements Fulfilled

Add assignments (name + grade out of 5) - Fully implemented with validation

Dynamically calculate and display GPA in real time - Updates instantly

View all entered assignments on the page - Beautiful list with grades

Press "S" to log all data to the console - Complete data logging

Save data using localStorage - Persistent storage implemented

Pure JavaScript (no libraries/frameworks) - 100% vanilla JavaScript

HTML/CSS with styling - Modern, responsive design

GitHub ready - All files organized for repository submission

File Structure

```
gpa-calculator/  
├── index.html      # Main HTML structure  
├── styles.css      # Complete CSS styling  
├── script.js       # Core JavaScript logic  
└── README.md       # Project documentation
```

GPA Calculation Logic

The GPA is calculated using the `reduce()` method to sum all grades and divide by the number of assignments:

```
const totalGrades = assignments.reduce((sum, assignment) => {  
  return sum + parseFloat(assignment.grade);  
}, 0);  
const gpa = totalGrades / assignments.length;
```

Group Task Division

This project demonstrates all the required group roles:

Repository Setup

- GitHub repository initialization
- File structure organization
- Collaboration setup

HTML/CSS Development

- Semantic HTML structure (`index.html`)
- Modern CSS styling (`styles.css`)
- Responsive design implementation
- Visual design and user experience

Core JavaScript Logic

- Assignment array management
- GPA calculation using `reduce()` method
- Data validation and error handling
- `localStorage` implementation

DOM & Events Management

- Event listeners for buttons and keyboard
- Dynamic DOM manipulation
- Real-time UI updates
- User interaction handling

Bonus Features

- localStorage data persistence
- Smooth animations and transitions
- Input validation and user feedback
- Enhanced user experience features

Getting Started

1. **Clone or Download:** Get all project files
2. **Open:** Open `index.html` in any modern web browser
3. **Use:** Start adding your assignments and tracking your GPA!

Browser Compatibility

- Chrome (recommended)
- Firefox
- Safari
- Edge
- Mobile browsers

Example Usage

1. Add "Math Homework" with grade 4.5
2. Add "Science Project" with grade 3.8
3. See GPA calculated as 4.15
4. Press 'S' to view detailed console output
5. Refresh page - data persists!

Built with using pure JavaScript, HTML, and CSS