

Colorado Education Association



Organization Background

The Colorado Education Association is the voice of 39,000 educators, working together in a strong union to ensure all students get the exceptional public schools they deserve in every neighborhood across the state. As the professionals in schools with students every day, CEA members are the true experts in public education policy. As Colorado's largest labor union, CEA works collectively with all education stakeholders to ensure that our students, educators and schools have the resources they need to learn and thrive.

Problem Description

The CEA Workload Calculator Task Force launched a workload calculator pilot in 2020. We are a group of educators with the Colorado Education Association who have developed a tool using Google Sheets and Google Forms to support educators with demonstrating how their time is spent in an average month. Our work so far has attracted the attention of educators across the nation, and we are leading a movement that we believe will save the future of public education. Educators are leaving schools because of unsustainable workloads. Our goal is to use data from this tool within our unions to influence decision-making at the district level across the state to change how resources are allocated and ensure we can meet the needs of our students.

We have some degree of knowledge in programming spreadsheets using query language and formulas, but our dreams for this tool are to be much more robust for widespread use across the state and beyond. We are looking for a group of students who would be able to take what we have created on Google Sheets and convert it to a web based application that is more stable, robust, and secure. We anticipate we will need to store and access data in the cloud. The ideal candidates would have strong communication skills to be able to manage this project and have regular (twice monthly) meetings with our team and a consultant.

Project Goals Requirements

The goal of this project is to build a web-based application that is more secure, stable, and user-friendly than the current Google-based pilot. In addition, we would like to expand the current tool to allow three levels of user security (login). Basic users would be able to track their own personal data over time. Local administrators would be able to track de-personalized aggregate data, and Central Administrators would essentially be the members of our team who developed this tool. We would need the ability to update operational data while minimizing engineer intervention.

The primary elements of this application will be:

- Full Stack:
 - Front-end website with varying user security levels (user, local administrator, central administrator)
 - Back-end database with reporting features that can be managed by Central Administrators
- Clean data & ensure survey questions target consistent responses
- Creating tools to automate reporting
 - Compare districts to selection of other districts
 - Compare specific data points with averages, max, min
 - Compare workload across different providers
 - Compare workload across grade levels
- Any other problems that students see as we show them our current process that they think a script can solve

Student Requirements

Specifics

- Team Size: 3 - 4 students
- Work will be done remotely
- Two virtual meetings each month, more upon request
- Students will develop a timeline for the project to track and review progress at regular meetings
- Potential contract work after the project is over
- Students will sign a non-disclosure agreement related to intellectual property and CEA protected data.

Skills

- Advanced knowledge of the following:
 - SQL
 - Spreadsheets (Google Sheets)
 - Website Development
- Interest in developing skills in the following:
 - Python
 - Data Analytics
 - Data Visualization
 - Tableau or comparable visualization tools

Contact Information

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