# BSU Clean-Up Project

Course: Senior Capstone

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## Overview

The BSU Clean-Up Project was developed to promote student involvement in maintaining the cleanliness and beauty of the Bowie State University campus. Through a custom-built web application, students are encouraged to register for clean-up events and are rewarded with points for each event they attend. These points can be redeemed for campus rewards, motivating active community participation. The platform integrates modern web development technologies to create an engaging, secure, and functional experience for both students and administrators.

## Project Objective

The BSU Clean-Up Project was developed to encourage greater student involvement in maintaining campus cleanliness through a structured and rewarding volunteer system. The primary objective is to provide students with a secure and user-friendly platform that allows them to create accounts, log in, and view available clean-up events in real time. Once enrolled, students can earn points for each event they attend, which can later be redeemed for rewards, adding an incentive for participation. Additionally, the platform gives administrators full control to create, manage, and monitor events and rewards, ensuring a smooth and organized system that benefits both the student body and the university community as a whole

## Technologies Used

**Technology Purpose Of Technology**  
HTML5 Structure and layout  
CSS3 Styling and visual design  
JavaScript Interactivity and dynamic elements  
Node.js Enhanced frontend functionality  
Python (Flask) Backend logic and routing  
MySQL Data storage and relationships  
SQLAlchemy & Sequelize ORM for database operations  
Visual Studio Code Development environment  
GitHub Version control  
Google Docs Team planning and collaboration

## Application Structure

## The student portal is designed to provide a streamlined and engaging experience for users participating in the BSU Clean-Up Project. Through the portal, students can easily create an account, securely log in, and access a personalized dashboard that displays their available events, point totals, and reward options. The system allows students to browse and enroll in upcoming clean-up events, ensuring they can stay actively involved. As they participate in events, their points are automatically tracked and updated in the system. These points can then be redeemed within the portal for a selection of campus-related rewards, making the entire experience interactive, motivating, and easy to manage. Admin Portal: The admin portal is built to give managers full control over the operations of the BSU Clean-Up Project. After logging in through a secure access point, administrators are able to create, update, and manage all clean-up events displayed on the student side of the platform. They can monitor participation, edit event details as needed, and ensure that the platform stays up to date with current opportunities. Additionally, admins have the ability to add, remove, and modify student rewards, maintaining a structured system for recognizing and encouraging student involvement. This portal ensures that the backend operations run smoothly while supporting student engagement from behind the scenes.

## Implementation Highlights

- Password hashing and login lockout for account protection  
- Flash messages for real-time user feedback  
- Smooth front-end navigation and interactivity  
- Database relationships enforced using Sequelize ORM  
- Node.js and JavaScript for responsive behavior on the frontend

## Workload Distribution

- Miles: Responsible for designing the frontend using HTML, CSS, JavaScript,  
- Jawan: Designed and implemented the MySQL, and Nodejs, database, handling structure, queries, and Sequelize relationships.  
- Alldrick: Developed the backend using Python and Flask, covering authentication, routing, and session logic.

## Conclusion

This full-stack web application reflects our ability to merge service, community involvement, and real-world technology. With clean design, secure data handling, and interactive features, the BSU Clean-Up Project is ready to serve the student body. Looking forward, we aim to add mobile support, analytics dashboards, and public deployment for long-term impact.

## References

- W3Schools – https://www.w3schools.com/  
- GeeksforGeeks – https://www.geeksforgeeks.org/  
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