QuimicOS

Chemtrack

Proposal

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Background

The Office of Occupational Health, Safety, and Environmental Affairs (OSSOA) is responsible for developing and implementing occupational health and safety programs on the campus, ensuring employee safety and compliance with OSHA, EPA, and other state and federal regulations.

Problem Statement:

The University of Puerto Rico at Mayaguez laboratories faces significant challenges in managing *unwanted materials*. Current practices involve improper labeling of containers—often with missing or incorrect information—which violates EPA regulations. Additionally, the request system for waste pickups is inefficient, relying on email communication handled by a single individual, leading to delays and potential non-compliance. These issues pose safety risks, regulatory penalties, and increased costs for the university.

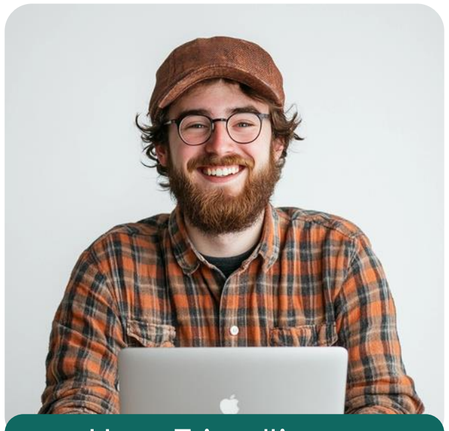
Project Deliverables

Proper Identification

Facilitate and ensure that all unwanted materials are properly identified and comply with EPA standards.

Push Notification

Efficiently send notifications to administrators as the pickup date approaches or when the container volume reaches its limit.



User-Friendliness

Design a user-friendly interface that the university community will be more likely to use consistently.

Report Generation

Generate summary reports on unwanted material production to serve as evidence for the inventory of unwanted materials.

Product Comparisons

Criteria	ChemTrack	Chematix	SciShield
Chemical Inventory Management	✓	✓	✓
Compliance Reporting	✓	✓	✓
Waste Disposal Requests	✓	✓	✓
Automated Label Generation	✓	✓	✗
Safety Management Tools	✗	✗	✓
Customizable Dashboards	✗	✗	✓
Regulatory Alerts	✓	✓	✓
Reporting and Analytics	✓	✓	✓
Role Specific Home Pages	✓	✗	✗
Import/Export Records	✓	✗	✗

Objectives, by Nov. 26th

Develop and deploy a web app
for tracking and requesting the collection of unwanted materials.

Develop a notification system
for unwanted materials collection, with automated alerts.

Implement a database
to store and save the number of unwanted materials, capable of summarizing reports.

Implement a streamlined web app
containing only essential user tools, with full deployment.

Create an EPA-compliant label
for unwanted materials, featuring a unique ID and all necessary handling information.

Develop and test a script
for installing ChemTrack on a server host, ensuring it is fully operational.

Our Solution

ChemTrack

ChemTrack is a WebApp capable of tracking, identifying, and notifying the retrieval of *unwanted materials* for the University of Puerto Rico in Mayagüez, which will be managed by the Environmental Health and Safety office.

Milestones

01

September 25th

Database Schema Design Completion

02

September 27th

Architecture Design Finalization

03

October 23rd

API Development Completion

04

October 24th

Front End UI/UX Development Completion

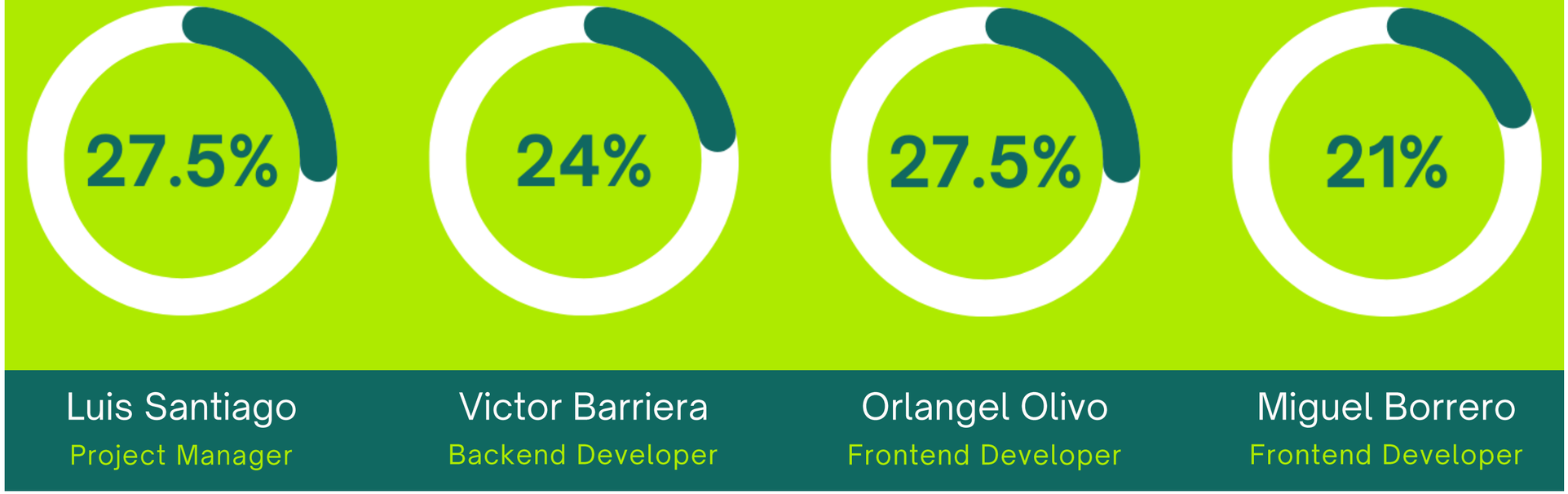
05

November 21st

Middleware Integration Completion

Resources

Percent = (Individual Tasks)/(Total Tasks) * 100



Budget & Financials

Labor Costs

1 Project Manager + 3 Developers =

$47,880.00

Consultation Fees

4 Consultants for 5 hours per week =

$22,710

Indirect Costs

Benefits (Insurance/SSN/401k/Vacations)

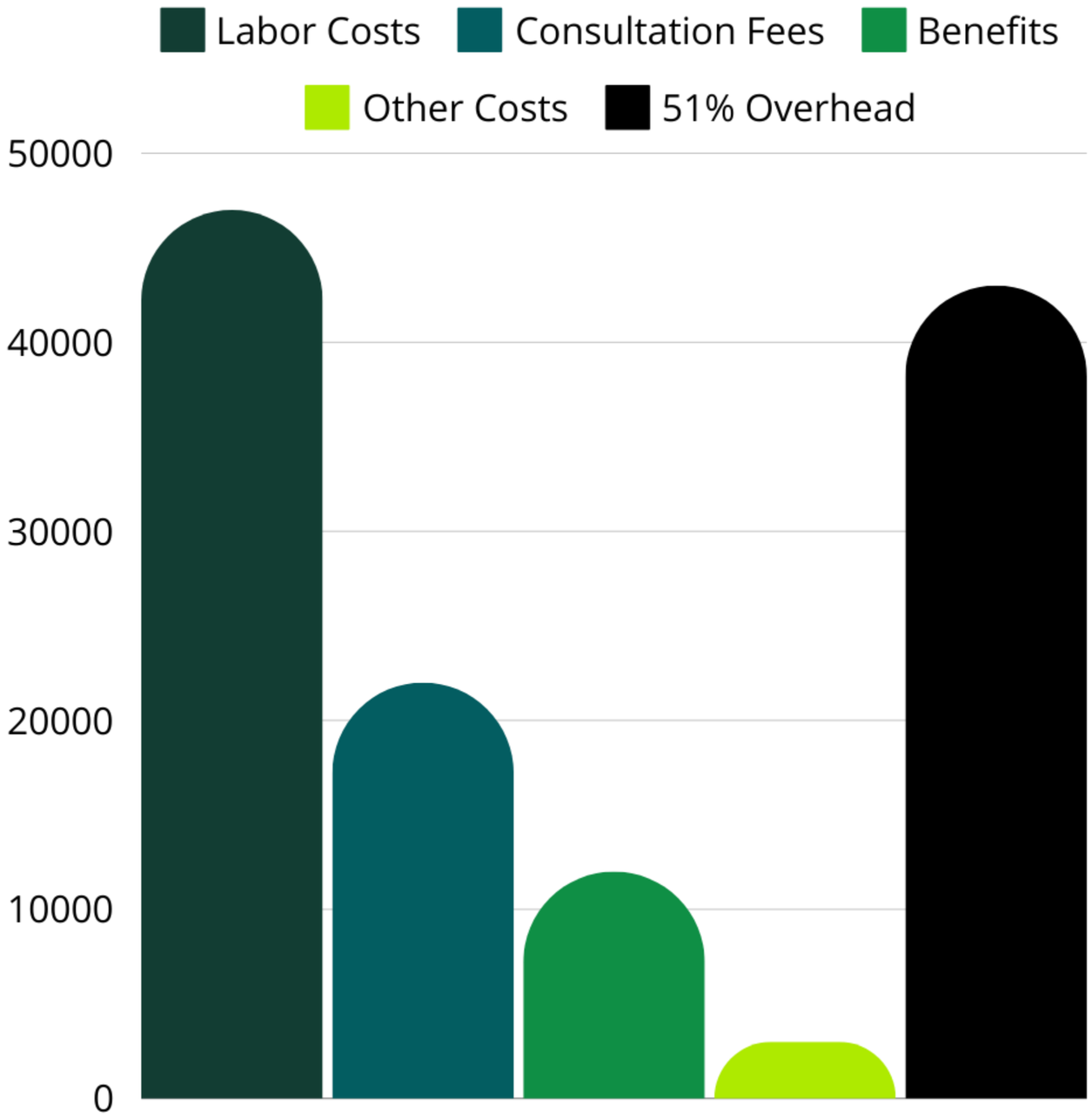
+ Work Computers =

$15,892.56

Overhead

51% of Total Cost =

$43,191.28



Conclusion

Comply with EPA Regulations

By properly identifying *Unwanted Materials* containers with beginning of disposal date, exact chemical name, container size, and date of removal.

Uniquely Identify *Unwanted Materials*

By keeping count of all reports of disposal and removal of *Unwanted Materials* for future reference.

Reduce Costs and Accidental Mismanagement

By sending notifications to upper management about pending and upcoming pickup dates.