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Problem Statement

PRJobs is a job searching platform focused on user-experience, aiming to provide a single page where users can search & apply for jobs near them, and companies can make known their available positions.

While there are many job searching applications available out there, they are suboptimal when it comes to

Technical Approach

The *PRJobs* project stands out from existing job searching applications due to its focus on accessibility to those who reside specifically in Puerto Rico, encouraging the local population to search & apply to jobs. Our project also puts a great importance in ease of use for both employers and users, creating a

space where all parties find exactly

For development, the team used

Python's Flask framework to connect

with the Database and NodeJS.

Also, React, JavaScript and Html

were used to make a beautiful and

easy-to-use webpage. The overall

To calculate the distance between a

what they are looking for.

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Results

The testing framework "Locust" was used to load test the application³. The results of which showed no errors, despite simulating up to 1,000 concurrent users accessing most of the routes simultaneously. These results showed how despite the continued increase in users, the response time gradually lowers. Since PRJobs is being hosted on Heroku, these results are to be expected as Heroku allows up to 10,000 requests per second⁴.

finding jobs for the average Puerto Rico citizen.

Problem Background

An initial survey was used to collect and compile information about what needs users have in terms of job searching applications. The survey received 74 responses and it was found that approximately 86.5% of all respondents agreed that there was a need for a job searching application for jobs in Puerto Rico. This number is derived from combining the answers from "Yes / Si" and "Yes / Sí".



ons. The survey project was hosted in Heroku.

job and a user, the Haversine formula is used. This is a formula specifically made for calculating the distance between two points on a sphere, such as the globe. This formula, as implemented in PRJobs, takes the latitude and longitude of each point as inputs, and returns the distance in kilometers. The latitude and longitude is in turn obtained from utilizing the Google Maps API's Geolocation feature.

 $d = 2R \times \sin^{-1}(\sqrt{[\sin^2((\theta_2 - \theta_1)/2) + \cos\theta_1 \times \cos\theta_2 \times \sin^2((\phi_2 - \phi_1)/2)]})$

where:



Graph representing different types of requests to the frontend and backend measured in Locust. These measurements are: response time, requests per second, and current simulated users.

TABLE 1:	TABLE 1: Summary of Tests conducted in Locust				
Test	Number of Users	Response Time (ms)	Total Requests per Second		
Test A	200	2,304.5	18.6		
Test B	500	3,110.25	48.4		
Test C	1,000	17,449.88	66.9		



Conclusion

Objectives

The main goals of PRJobs are as follows:

- 1. Implement a platform where companies can create job postings that other users (job searchers) can find and apply to.
- 2. Facilitate job finding by implementing Google Maps & GPS features to recommend nearby jobs to users.
- 3. Increase user satisfaction based on feedback from survey results.

- θ₁, φ₁ First point latitude and longitude coordinates;
- θ_2 , ϕ_2 Second point latitude and longitude coordinates;
- R Earth's radius (R = 6371 km); and
- d Distance between them along Earth's surface.

Image representing the Haversine formula used. Formula obtained from Omni Calculator sp².

Lisers			Companies	Companies	
user_id(PK) user_type user_birthday user_fname user_name user_phone user_email user_email user_address user_municipality	serial varchar(6) date varchar(15) varchar(15) char(12) varchar(25) char(50) char(25)		cm_id(PK) cm_name cm_phone cm_email	serial varchar(25) char(10) varchar(15)	
user_availability char(15) user_password varchar(25)			Postings post_id(PK) user_id(FK)	serial serial	
	Messages msg_id(PK) user_id1(FK) user_id2(FK) msg_content msg_time	serial serial serial varchar(32) date	cm_id(FK) post_title post_address post_municipality post_uploaded post_expires post_edit	serial varchar(25) char(50) char(25) date date boolean	

Table Diagram for the PRJobs App.

The PRJobs application has proven that it can fulfill many users' involving finding jobs. Features such as Geolocation, help users as well as many companies with recruitment. Additionally, PRJobs simplified communications between users and companies for a better experience for both sides.



References

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