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DSA Project  
Proposal*



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# INTRODUCTION

Climate change in Pakistan is expected to cause wide-ranging effects on the environment and people in Pakistan. As a result of ongoing climate change, the climate of Pakistan has become increasingly volatile over the past several decades; this trend is expected to continue. In addition to increased heat, drought, and extreme weather conditions in some parts of the country, the melting of glaciers in the Himalayas threatens many of the most important rivers of Pakistan. Between 1999 and 2018, Pakistan is among the 5 most affected country in extreme climate caused by climate change.

## OBJECTIVE

This project aims to provide in-depth detail about Climate Change and its effects in Pakistan by being able to let the users retrieve information about cities' status on their environment and edit it accordingly. Climate Change is one of the Sustainable Development Goals (13) defined by the United Nations to be achieved by 2030 initiated in 2015. We decided to make a project that provides solutions to real-life problems by first spreading awareness through data statistics.

## PROBLEM DESCRIPTION

Attempting to solve climate change problems using data structures and custom algorithms like threat level calculator. Describing in this project that how temperature and pollution, among other factors, affect climate change.

For example; Higher temperatures mean that heatwaves are likely to happen more often and last longer, too. Warmer temperatures can also lead to a chain reaction of other changes around the world. That's because increasing air temperature also affects the oceans, weather patterns, snow and ice, and plants and animals.

### **Structure of our project**

1. Access Data of various cities (temperature and pollution levels)
2. Calculate Threats and Sort cities in order from highest to lowest
3. Update data (change temp and pollution levels, then sort again)
4. Add a city and its data (then do 2 accordingly)
5. Carbon Footprint Calculator

## 6. Probable Solutions

### METHODOLOGY

Using the concepts of Linked lists and altering that concept to fit our goals relative to climate change, we will store data of a few populated cities and compare the cities' statistics. The user should be able to determine which cities to focus on and in what way, access solutions, access city-wise data comparisons (in the appropriate units and conversions if necessary), and calculate the carbon footprint of their choice. If the user is authorized personnel, they will alter the data (add cities, update existing city data). Each city has a set of data that the threat level of Climate Change affects. For example, temperature, pollution levels (air, land, noise, water).

### PROJECT SCOPE

The climate of the planet Earth has been inclining increasingly towards global warming since the beginning of the industrial era. This has affected the regional temperatures and living conditions of many areas. Our country, Pakistan, houses approximately 212.5 million people and contributes to global climate impacts. Therefore, our project "PAKclimate" aims to help users monitor and analyze the factors contributing to climate change in various country regions. Ensuring that these concerns are being addressed by showing possible solutions to these problems. Also gives authorized users the ability to add cities and update climate information, among others. This project can further be extended into a full-fledged application shortly. The key milestone is to make a positive impact by creating awareness amongst the masses regarding climate change and calling for authorities to take swift action immediately.

### EXPERTISE OF TEAM

All our team members are pre-equipped with the level of knowledge needed for the successful completion of this project.

Everyone in this group has required knowledge of data structures and has worked using data structures, algorithms, and object-oriented programming in python.

### REFERENCES

1. <https://sdgs.un.org/goals/goal13>

2. <https://unstats.un.org/sdgs/report/2021/goal-13/>
3. <https://www.iqair.com/pakistan/sindh/karachi>