Dengue Case Prediction Using Machine Learning

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***Abstract*—This project aims to develop a machine-learning model to forecast dengue cases across various districts in Bangladesh. By utilizing historical data, environmental factors, and demographic information, we will predict not only the number of cases but also the mortality rates segmented by gender and age groups. The model will provide early outbreak detection and risk assessments, allowing for timely public health interventions.**

***Index Terms*—dengue prediction, machine learning, dataset, forecasting, public health**

I. Introduction

This project focuses on predicting dengue outbreaks using machine learning. Dengue is a significant public health concern in tropical regions, including Bangladesh. Early prediction of outbreaks can help authorities take preventative measures to control the spread. In this project, we will explore weather conditions, population density, and historical dengue cases to develop a model capable of forecasting future outbreaks, identifying high-risk districts, and estimating death tolls by gender and age groups.

II. Literature Review

Leaving this section for Phase 02.

III. Methodology

We will select a machine learning algorithm based on its suitability for time-series data and classification tasks.

For now, the methodology will include data preprocessing, feature engineering, and selecting appropriate models such as Random Forest, Support Vector Machines, or Decision Tree.

IV. Data Set

We will use datasets from the following sources to gather historical dengue case data and other relevant factors:

- https://shorturl.at/Z4xWr
- http://apps.barc.gov.bd/climate/

These datasets will include district-wise monthly dengue cases, demographic information, and environmental factors.

V. Results and Analysis

Leaving this section for Phase 02/03.

VI. Conclusion

Leaving this section for Phase 02/03.

VII. References

We will add our references here, following the IEEE reference style for formatting.

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