Organization Name	:	Thermo Fisher
Problem Statement	:	Real time mapping of Epidemic spread
Team Name	:	Pepehands
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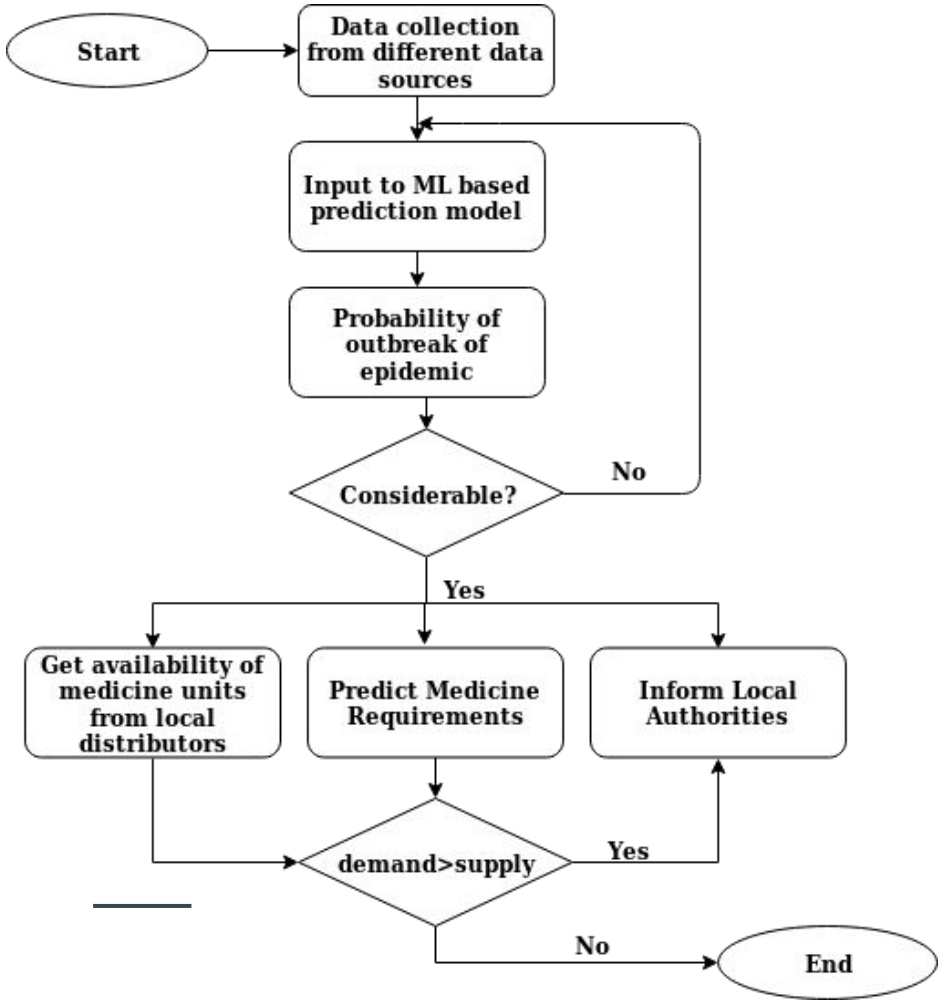
AICTE Code	:	1-3508354456

IDEA DESCRIPTION

- The application will analyze the historical data of a region and with the help of Machine Learning, it will predict the probability of outbreak of an epidemic.

- The major factors which contribute to epidemics are:
  - Climate
  - Pollution
  - Lifestyle of people
  - Quality of water supply
  - Sanitation facilities



- Data required for prediction of outbreak of an epidemic can be collected from :
  - Non-Government Organizations (NGOs)
  - Hospitals & Medical Stores
  - Weather Department
  - Pollution Control Board
  - Laboratories and Research Centres

- The Machine Learning model will be trained on the data collected from above mentioned sources for predicting the outbreak of disease.

- Systematic data collection techniques and real-time updates will help in predicting contagious disease, sending notifications to respective authorities for prompt response.

- Our advanced inventory management tool will maintain the availability of medicines which may be required in a region, where the probability of epidemic outbreak is high as indicated by our epidemic prediction model.

USE CASES

- Can be used as an awareness tool for citizens which gives real-time notifications of epidemic , so that precautionary measures can be taken.
- Can be used as a tool to trace the origin and root cause of an epidemic.
- Can be used as an alert system which can predict amount of drugs stocks required for the treatment of epidemics.

TECHNOLOGY STACK

Java : For developing the Android application.

Android SDK : For developing the Android Application

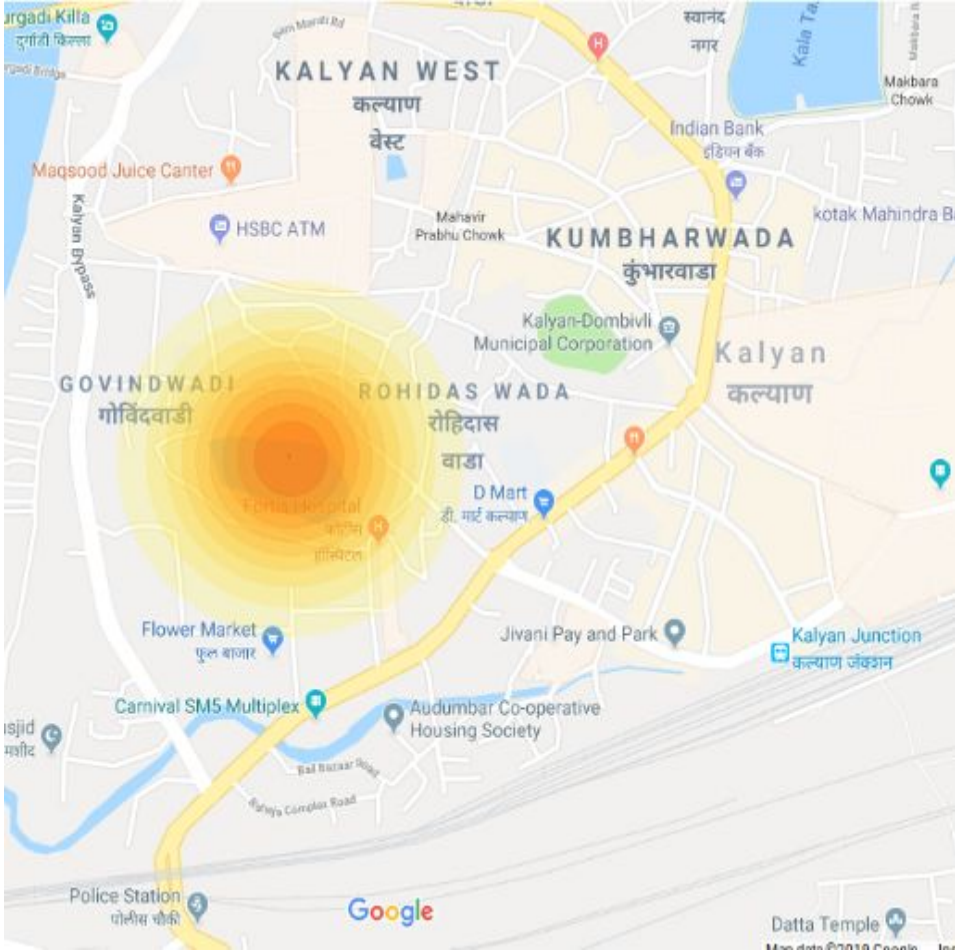
Tensorflow : For machine learning algorithms.

Amazon Web Services : For hosting the backend of the application.

Python : For creating the api endpoints and for machine learning or deep learning model development.

SHOW STOPPERS

- Live tracking of epidemics with respect to different regions.
- Tracking of medical inventory to counter shortage of medicine in the event of epidemic outbreak.
- Proactively predicting epidemic spread by accounting climate change, pollution and other parameters.



The above image represents possible impact of epidemics due to polluted pond.