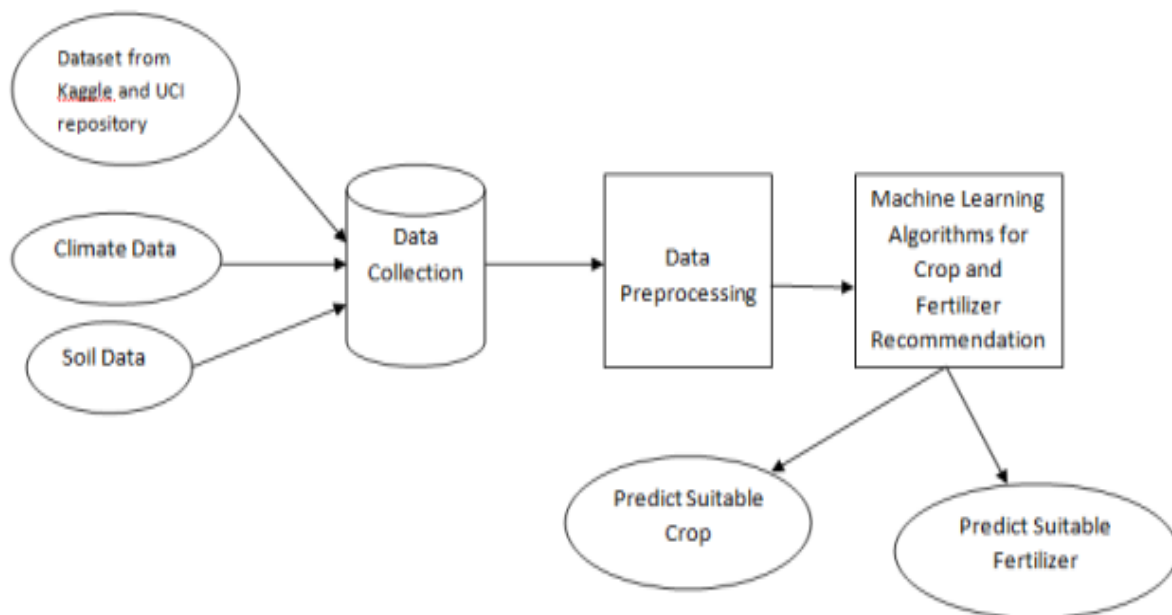


TEAM ID : PNT2022TMID22999	SOLUTION ARCHITECTURE
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FERTILIZER RECOMMENDATION SYSTEM FOR DISEASE PREDICTION

The Proposed system will predict the most suitable crop and fertilizer for particular land based on soil contents and weather parameters such as Temperature, Humidity, soil PH and Rainfall.



Solution architecture

The Architecture of the proposed system consists of various blocks as shown in the figure.

1) DATA COLLECTION:

Data collection is the most efficient method for collecting and measure the data from different resources like kaggle and UCI machine learning repository. To get an approximate dataset for the system. This dataset must contain the following attributes i) Soil PH ii) Temperature iii) Humidity iv) Rainfall v) NPK values, those parameters will consider for crop prediction.

2) DATA PREPROCESSING:

After collecting datasets from various resources. Dataset must be preprocessing before training to the model. The data preprocessing can be done by various stages, begins with reading the collected dataset the process continues to data cleaning. In data cleaning the datasets contain some redundant attributes, those attributes are not considering for crop prediction. So, we have to drop unwanted attributes and datasets containing some missing values we need to drop these missing values or fill with unwanted nan values in order to

get better accuracy. Then define the target for a model. After data cleaning the dataset will be split into training and test set by using sklearn library.

3) **MACHINE LEARNING ALGORITHM FOR PREDICTION:**

Machine learning predictive algorithms has highly optimized estimation has to be likely outcome based on trained data. Predictive analytics is the use of data, statistical algorithms and machine learning techniques to identify the likelihood of future outcomes based on historical data. The goal is to go beyond Nat. Volatiles & Essent. Oils, 2021; 8(5): 10531-10539 10534 knowing what has happened to providing a best assessment of what will happen in the future. In our system we used supervised machine learning algorithm having subcategories as classification and regression. Classification algorithm will be most suitable for our system. To predict suitable crop, we use machine learning algorithms like XGBoost, Random Forest and KNN , whereas for prediction of suitable fertilizer, we use machine learning algorithms like SVM and Random forest.