**VISHWAKARMA INSTITUTE OF INFORMATION TECHNOLOGY, PUNE**

**COMPUTER ENGINEERING DEPARTMENT**

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**Synopsis**

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**Title: Soil Data Classification and Predictive Analaysis**

**Objective :To Classify Soil data and suggest/predict Crop on basis of the Soil quality.**

**Abstract :**

Agriculture plays an important sector in the Indian economy. India is distinguished by small farms. More than 80% of the total lands in the country are less than (5 acres). In India farmers still, depend on natural resources. Hardly 35% of the total agricultural land is reliably irrigated. About 55% of the entire population of India depends on farming, according to the study. It is very important to increase the crop yield to satisfy the need of the increasing population. Most of the Indian farmers hold fragmented cropland and their yield is dependent on the availability of various factors like soil-quality, rainfall, and environmental condition etc. Successful farm production starts with the quality soil. The soil is one of the farmer’s most important and valuable tools. Average annual soil loss in India is about 5.3 billion tonnes. Degraded land loses the capacity to produce adequate yield for few crops but the same land can give good production for some other crops. This research aims at the analysis of soil dataset using data mining techniques. And also suggesting which soil is preferable for a specific crop.

**Briefs about Contents:**

**Introduction :**

Data Mining is a very crucial research domain in the recent research world. The techniques are useful to elicit significant and utilizable knowledge which can be perceived by many individuals. Data mining programs consist of diverse methodologies which are predominantly produced and used by commercial enterprises and biomedical researchers. These techniques are well disposed towards their respective knowledge domain. Efficient techniques can be developed and tailored for solving complex soil data sets using data mining to improve the effectiveness and accuracy of the Classification of large soil data sets. Soil analysis is a valuable farm practice that determines the exact amount of available crop nutrients that are in the soil, including nitrogen, phosphorus, potassium, pH, humus content, available lime, and organic matter.

Soil analysis presents information that is essential for the improvement of soil quality.

Usually, in Standard approach a Farmer takes the soil samples from his farm and gives any private laboratory for testing,which is time-consuming and expensive. The outcome of this research will result into

substantial diminution in the price of these tests,

which will save a lot of efforts and time of Indian soil

testing laboratories. Data Mining is used in various fields to recognize patterns which are used in analyzation and prediction. The results of soil analysis on different data sets with a range of Data Mining techniques may useful to farmers to get right insight to perform their activities with less cost and to improve the crop yields, such as by measuring soil properties the farmers can decide what kind of crops to be adopted and use of fertilizers etc. The soil analysis may use in many dimensions such as to protect the environment, diagnosis of crop culture troubles, to identify nutrient deficiencies, energy conversation, and so on.

**References/Bibliography:**

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