



SOIL FER'

Smart Agriculture for everyone

Supervised By : Mr.CHAOUKI

Realized by :

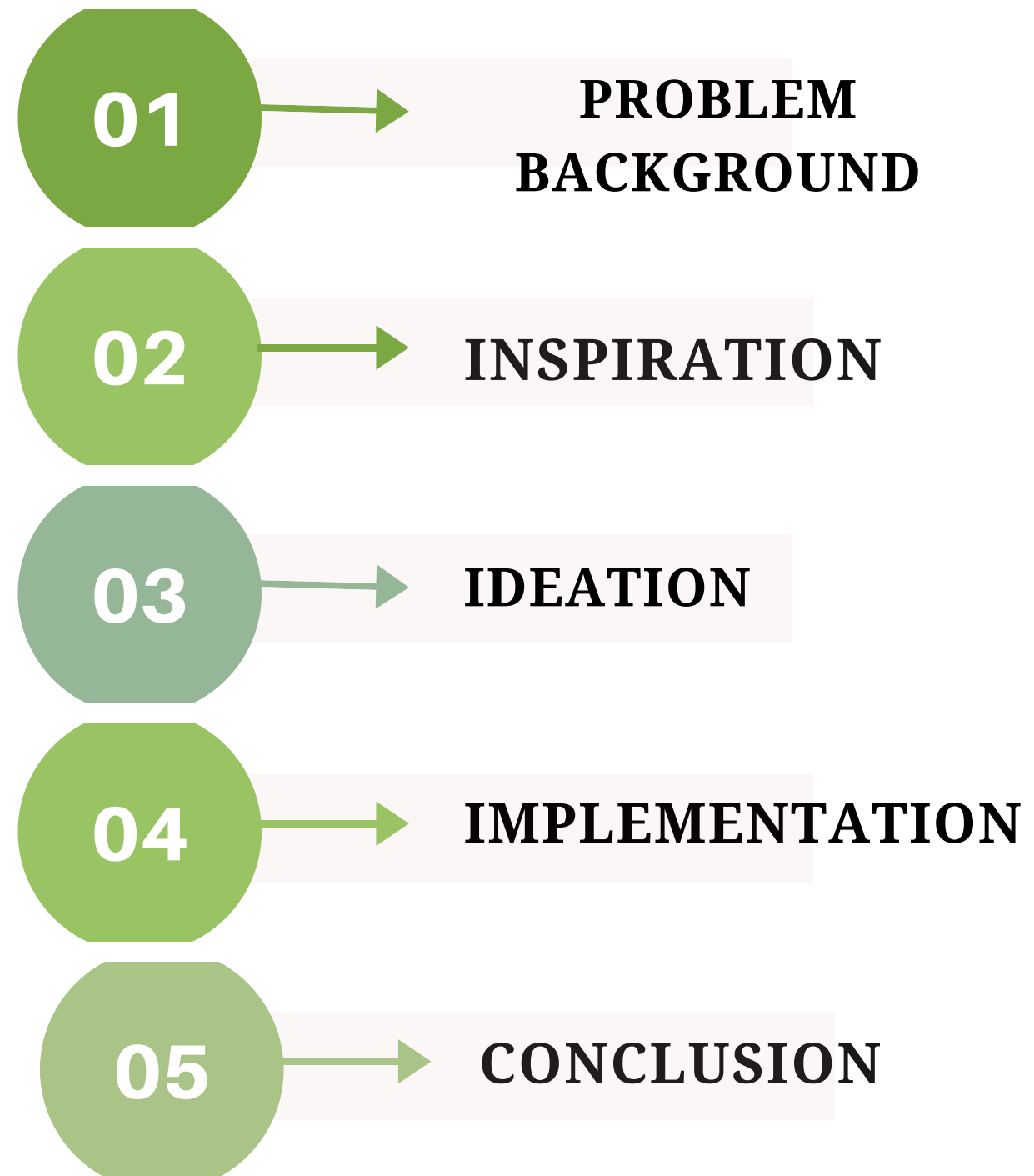
AARAB Ilham

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OUTLINE



PROBLEM BACKGROUND

INSPIRATION

IDEATION

IMPLEMENTATION

CONCLUSION



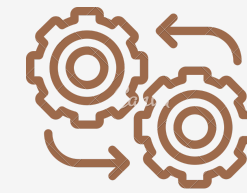
Time-consuming

Collecting soil samples and analyzing them requires a significant amount of manual labor, which can be time-consuming and costly



Limited accuracy

Traditional methods of soil fertility prediction are not always accurate and can lead to incorrect decisions about fertilization and crop management.



Lack of flexibility

Traditional methods are often based on fixed algorithms and do not take into account the specific conditions and requirements of different crops and fertilizers

1. OBSERVATION

Real Problem

soil fertility is still a challenging task and research is ongoing to improve these methods.

R

U

Urgent

Poor soil fertility can lead to reduced crop yields, which can have serious consequences for food security and the economy

Difficulty

Soil variability is a common issue due to the limited data available and the spatial and temporal variability of soil properties.

D

W

Get Worst

the problem is getting worst because of climate change and pollution

2. EMPATHIZE :

Customer persona : example

Name: Mohammed
Age: 40
Gender: Male
Location: Zagora, Morocco
Occupation: Farmer

Challenges :

- Difficulty to determine the degree of soil's fertility
- lack of access to required resources for increasing the crops yield

Goals :

- Increase the productivity of his land.
- Find a soil fertility prediction tool that can help him understand the nutrient needs of his soil and identify the best fertilizers to use.

Behaviors :

- Mohamed is open to using new technologies to improve his farming practices.
- He is proactive about the health of his soil and is willing to put in the time and effort to ensure that his crops have the nutrients they need to thrive.
- He is also concerned about the environmental impact of his farming practices and is interested in tools that can help him reduce his use of synthetic fertilizers.

Motivations :

- Mohamed is motivated by the desire to improve his crops yield and increase his farm's profitability.
- He values accuracy and reliability in a soil fertility prediction tool and is willing to pay for a premium service that meets his needs.



PROBLEM BACKGROUND

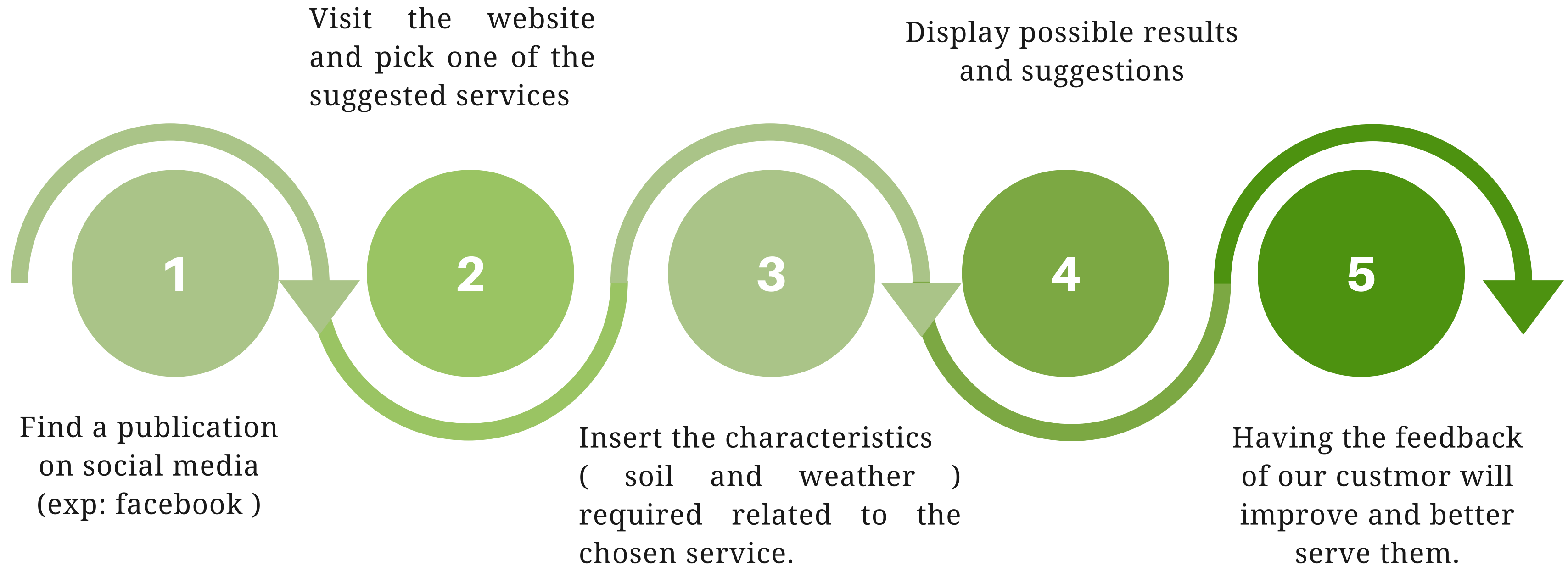
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3. GAIN INSIGHTS



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A Web application for Soil-Fertility-Prediction that :



Help farmers to have a way to quickly assess the fertility of their soil in order to make informed decisions about how to manage their land.



Poor soil fertility can lead to reduced crop yields , and detecting the type fertile soil can certainly Increase the economical yield of the farmers,



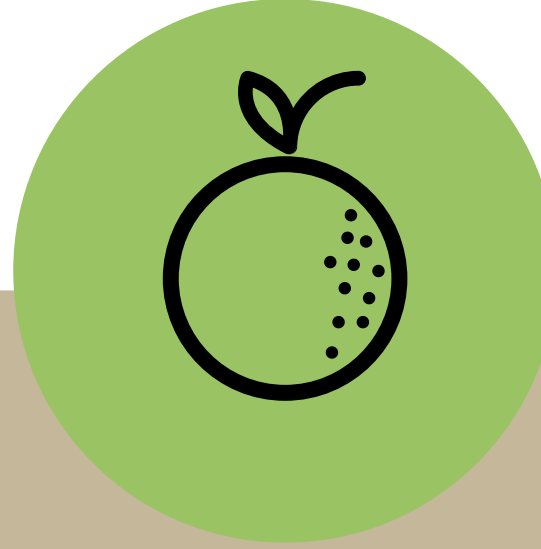
Digitalization of agronomical field by using this tools, farmers can identify any deficiencies or imbalances in their soil and take corrective action to improve fertility.

Our Services

Our platform provides three services :



Soil fertility
prediction



Crop
recommendation



Fertilizers
recommendation

Datasets

1

Soil's fertility prediction Dataset

This dataset is used for predicting soil's fertility based on its components .

2

Crop Recommendation Dataset

This dataset is used for suggesting the adequate crop to plant in given conditions.

3

Fertilizer Prediction Dataset

This dataset is used for suggesting the fertilizers for improving the soil's prediction and includes the various fertilizers information.

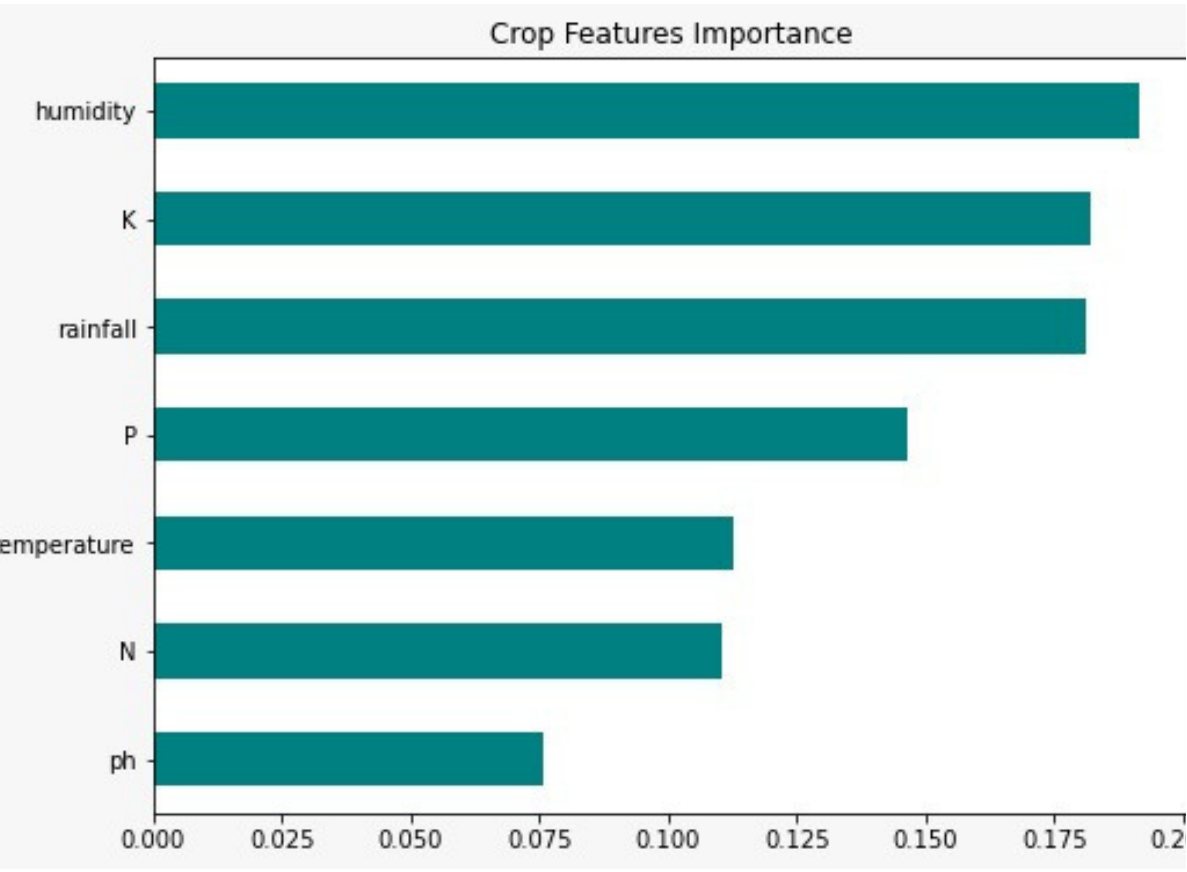
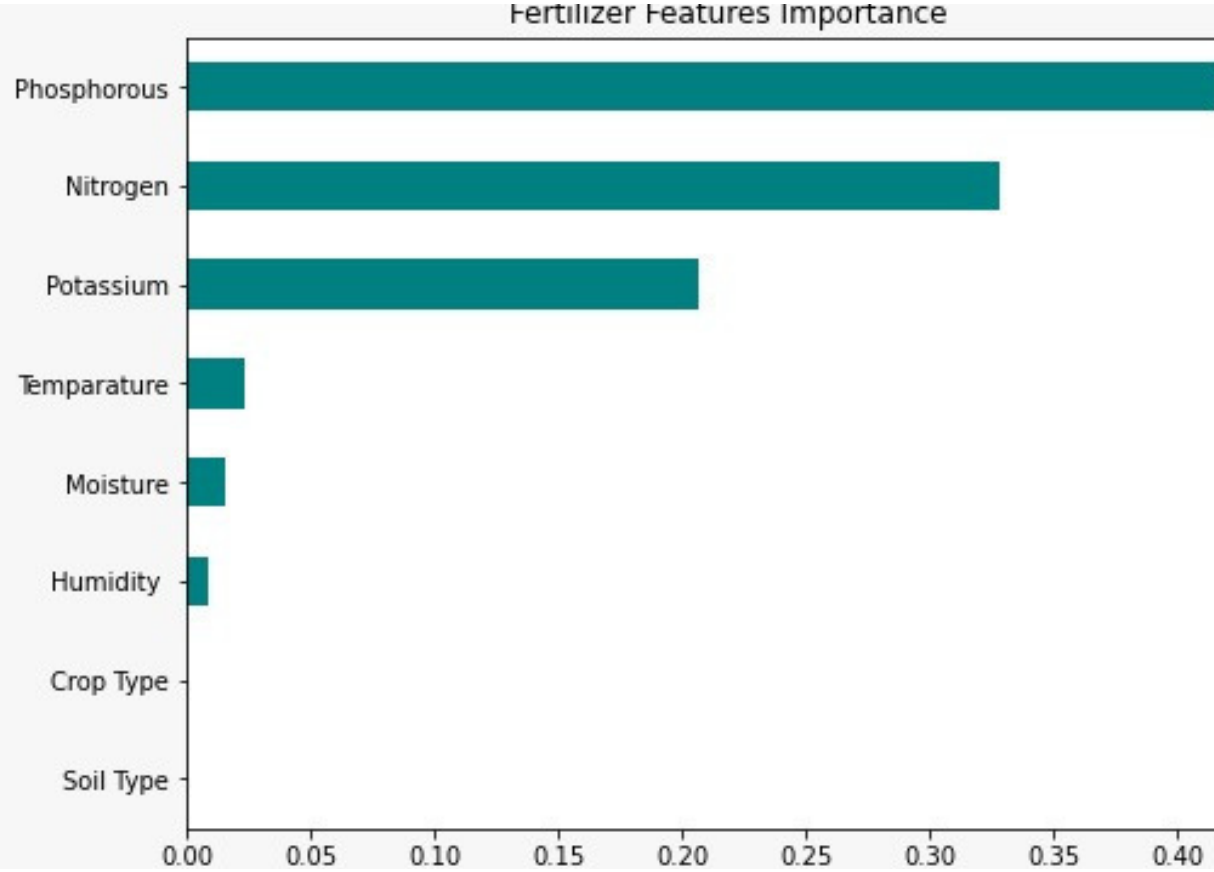
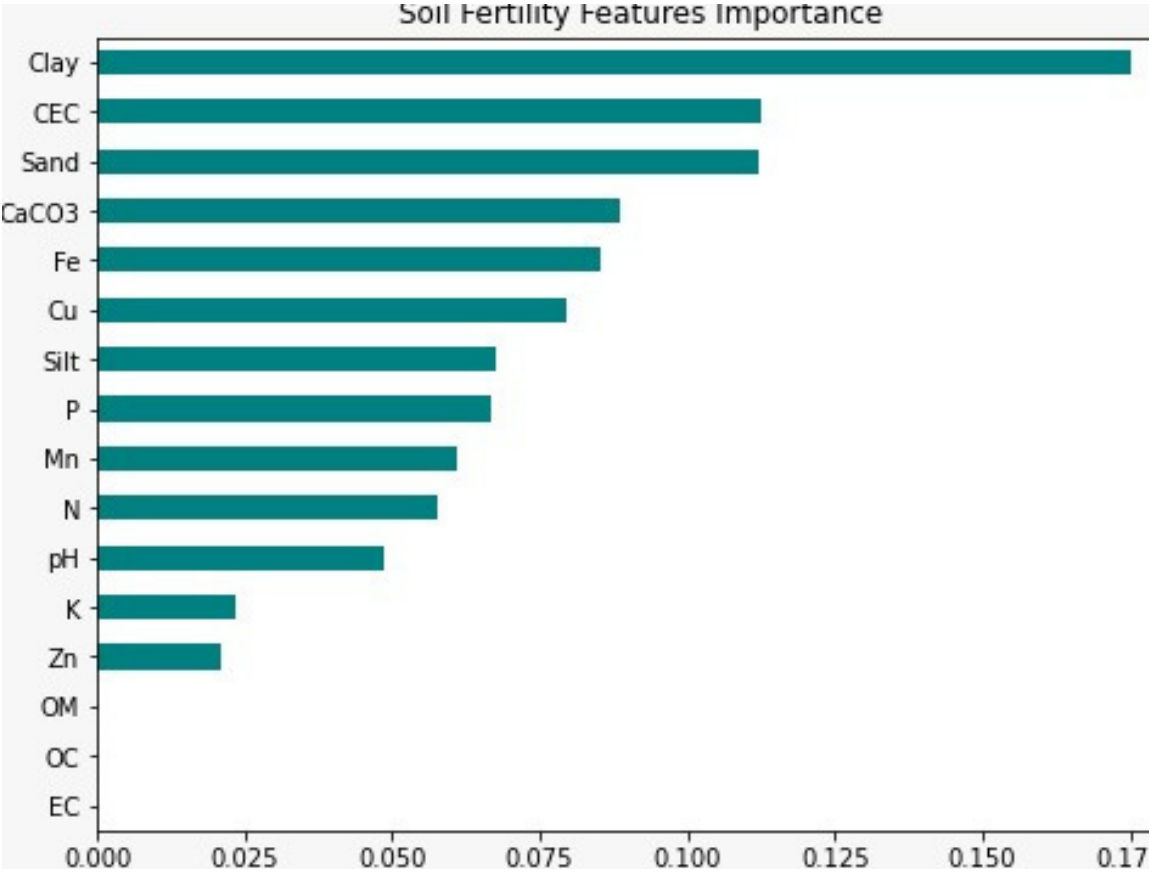
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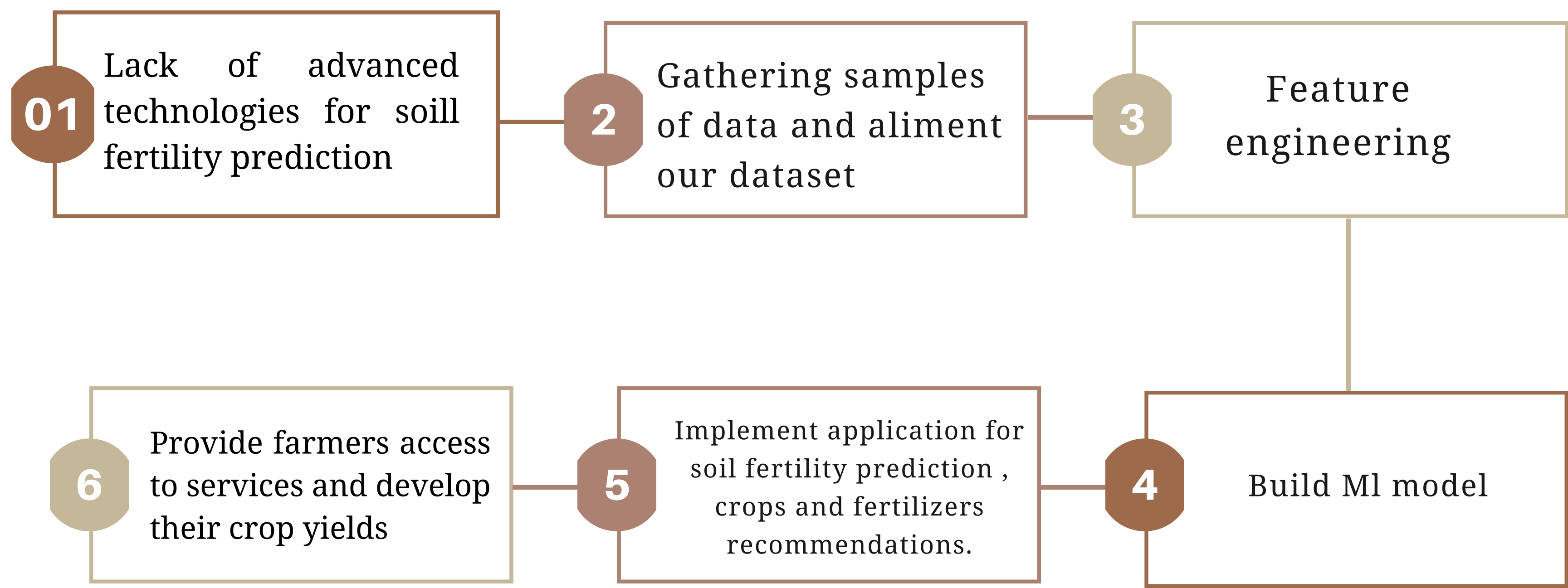
CONCLUSION



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	SVM	DECISION TREE	RANDOM FOREST	KNN
Soil Fertility	<div>  <div>98.00%</div> </div>	77.50%	82.50%	85.00%
Crop Recommendation	96.82%	98.18%	<div>  <div>99.00%</div> </div>	98.64%
Fertilizer Recommendation	95.91%	97.95%	<div>  <div>100%</div> </div>	97.95%

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Thank You