

Identification of medicinal plants in Saudi Arabia and their usages using image processing and machine learning

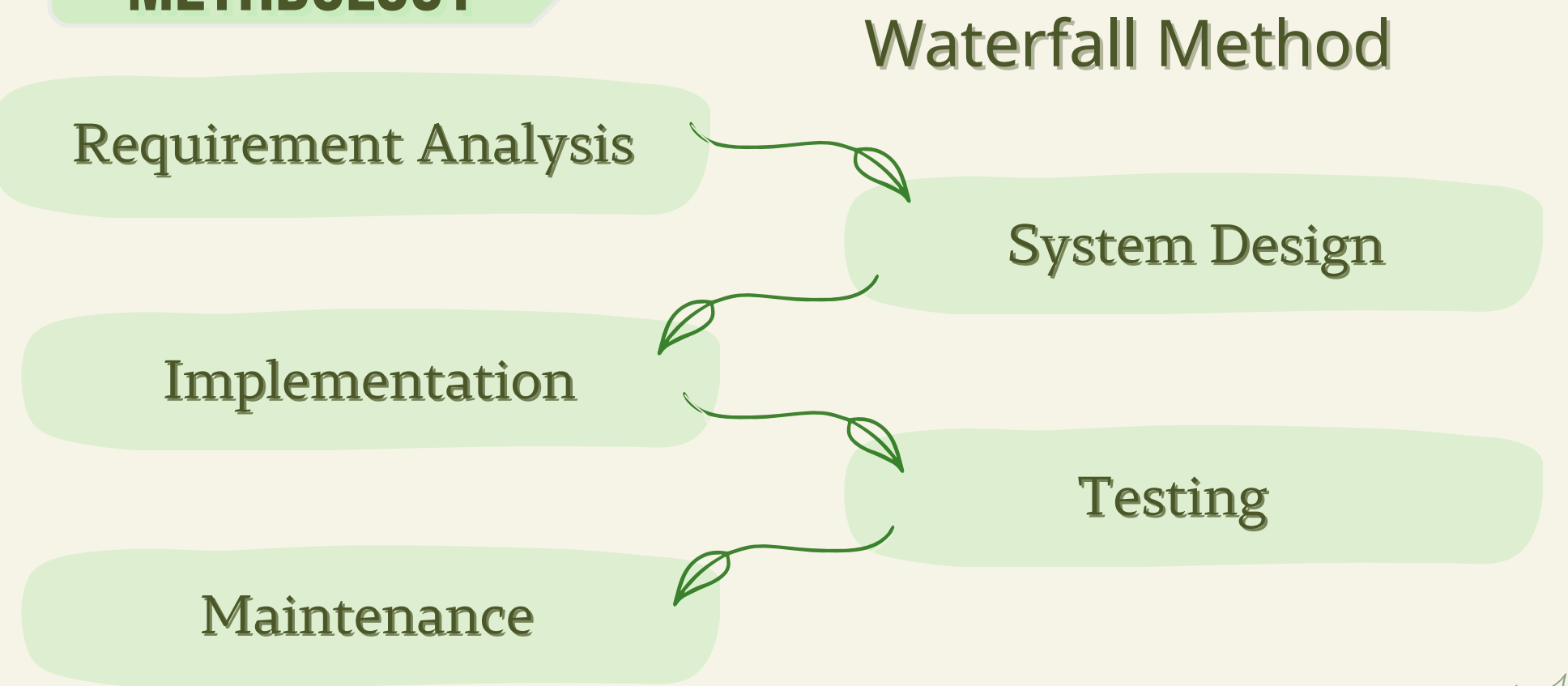
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ABSTRACT

Medicinal plants have been used in traditional medicine since ancient times. However, the process of identifying the plants and specifying their medicinal properties is difficult, even for specialists. In this project, our aim is to build a system that is capable of identifying the medicinal plants found in Saudi Arabia and their usages using Image Processing and Machine Learning.

METHODOLOGY



OBJECTIVES

-  Develop an application that Identifies medicinal plants found in Saudi Arabia.
-  Educate people about the diverse uses and benefits of medicinal plants.
-  Making the plant identification process easier and less time-consuming.

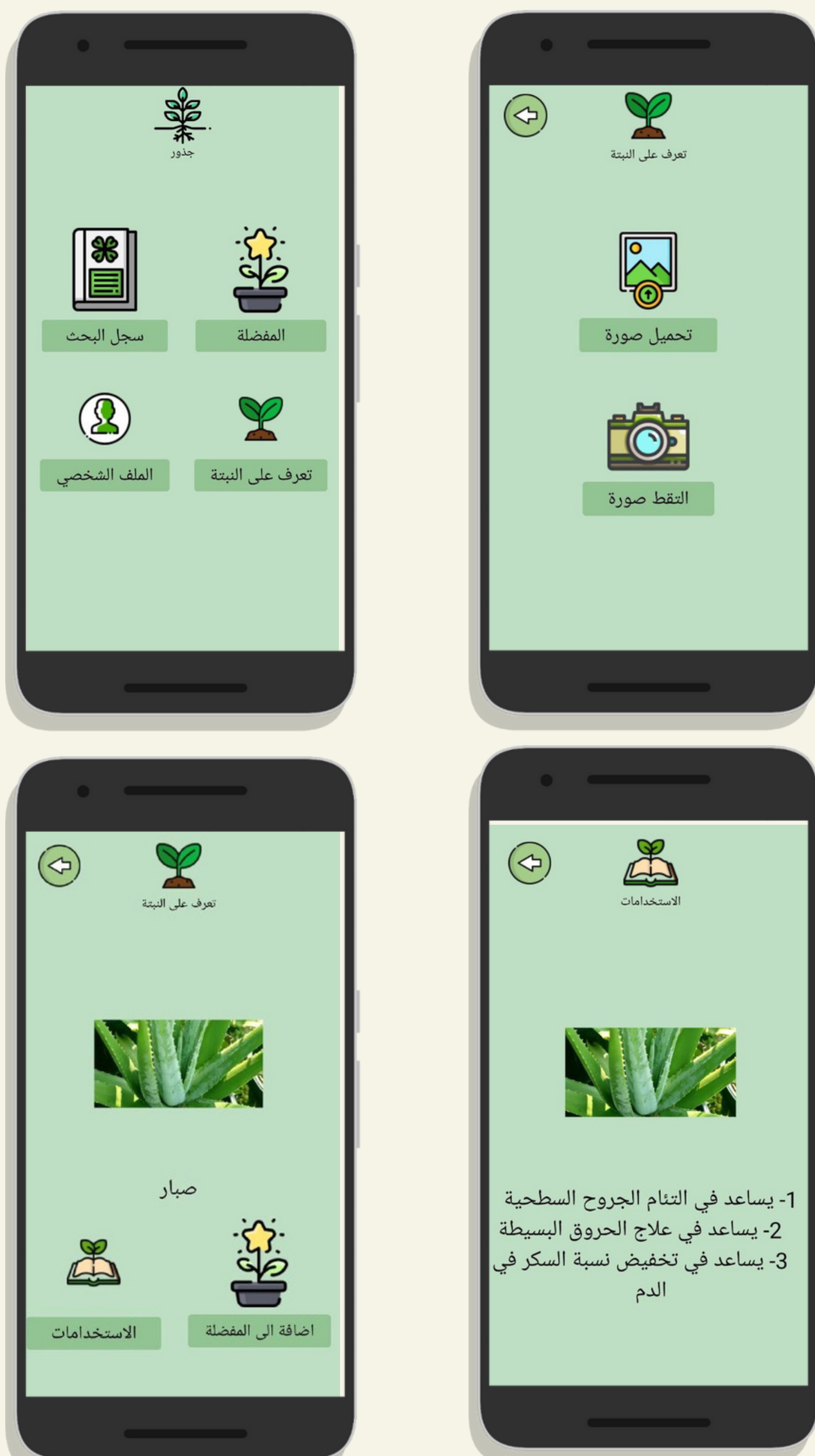
TOOLS



RESULTS

In selecting the ideal model for the JOTHOR app, three different Machine Learning algorithms were conducted, K-Nearest Neighbors (KNN), Support Vector Machine (SVM), and Random Forest (RF). After comprehensive testing and analysis, the Random Forest algorithm emerged as the top performer, delivering the highest accuracy. As a result, RF was chosen as the optimal model to power the JOTHOR app.





INTERFACES



CONCLUSION

The JOTHOR app is a remarkable showcase of machine learning's capabilities in plant recognition. It successfully classifies four plant species - Aloe Vera, Mint, Lemon, and Chamomile - with high accuracy, while providing valuable insights into their usages. JOTHOR not only aids in plant identification but also serves as an educational tool, it plays a role in preserving and using the natural resources we have while deepening our connection to the environment.

FUTURE WORK

-  Increase plant species.
-  Add plant location/city.
-  Identify toxic plants.
-  Identify plant disease.