Domain Analysis:

Human society needs to increase food production by an estimated 70% by 2050 to feed an expected population size that is predicted to be over 9 billion people. Currently, infectious diseases reduce the potential yield by an average of 40% with many farmers in the developing world experiencing yield losses as high as 100%. The widespread distribution of smartphones among crop growers around the world with an expected 5 billion smartphones by 2020 offers the potential of turning the smartphone into a valuable tool for diverse communities growing food. One potential application is the development of mobile disease diagnostics through machine learning and crowdsourcing.

- The main issue is - trying to help farmers know the type of pests that affect their crops, in addition to knowing the appropriate treatment for this pest as soon as possible. Some new farmers also suffer from lack of experience in some agricultural matters, so they need someone to exchange experience with in order to have the best crop. It can be obtained in these conditions and using the appropriate tools and equipment available.

- Identification of the pest: The farmer will be able to take a picture with his smart phone of the leaf of the plant that he wants to know the type of pest infecting him. And then he uploads this image to the application on his phone so that the application analyzes the image and gives him the results of his analysis of the image and also gives him the best solutions and suggestions to treat this scourge.

- Applying Machine learning algorithms and classifiers, they showed promising results in image classification and decision-making to assist growers in their diagnosis, which will serve as a boost in improving plant care services through effective image analysis of symptoms (pests) suffered by the plant.

- Helping others/asking for help: Any farmer or anyone who wants advice or opinion or even advice on his plant or anything related to the plant he is interested in can ask a general question to all present or users of the application and one of them will respond to him, which increases him with general information or It saves him the trouble of searching in vain.

- Calculating the appropriate amount of fertilizer for the cultivated land; some plants suffer from a lack or increase in the percentage of fertilizer used, so the application will provide the correct standards that you can use in the cultivated land area to obtain the best fertilization.