



BERRYSCAN

A robotic approach for strawberry health monitoring



Elaborated by:Housseem Ben salem & Hassen elmahrouk

1 General overview

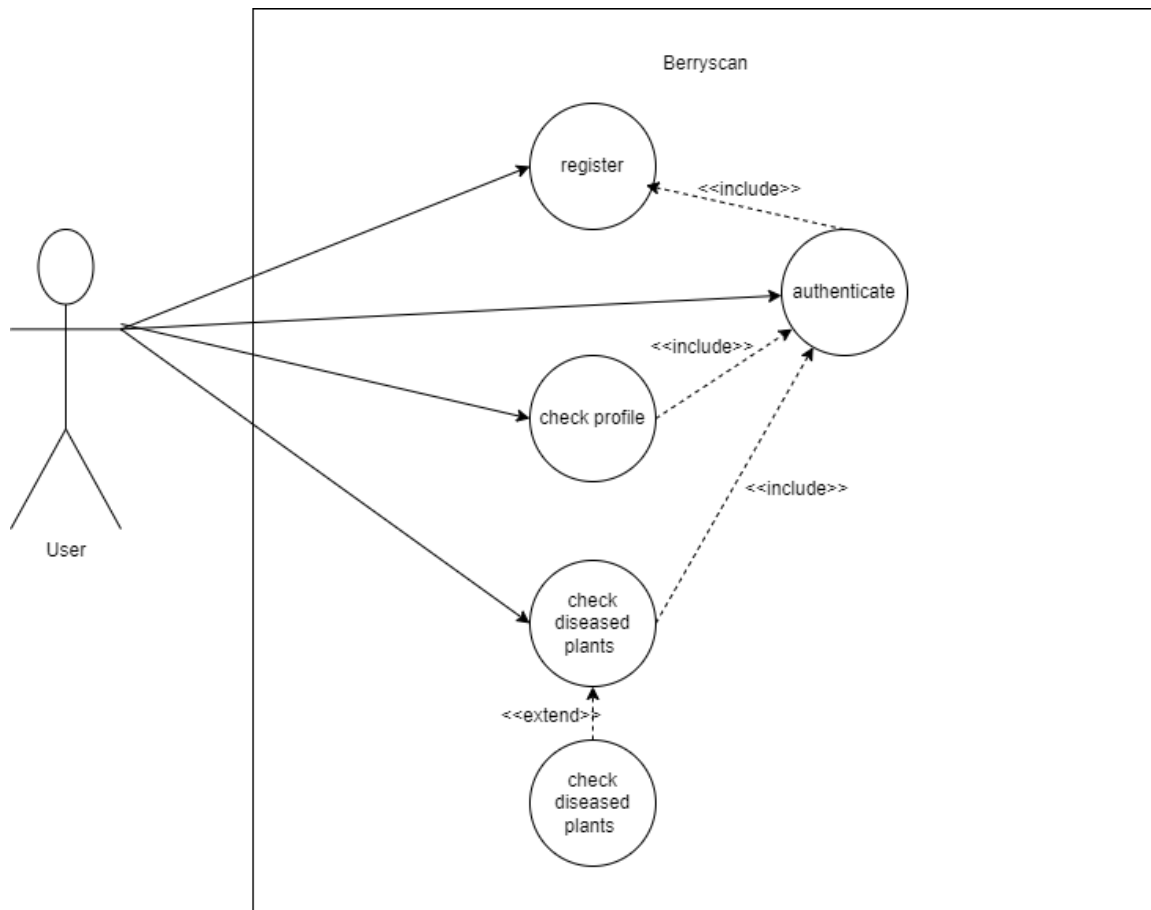
The agricultural sector, perpetually evolving to meet global food demands sustainably, faces challenges in strawberry cultivation due to the crop's susceptibility to diseases. Strawberries, a high-value crop, are vulnerable due to their delicate nature, ground-level growth, and diverse cultivation conditions. Traditional farming practices struggle with the complexities of larger cultivation areas, changing climate patterns, and a globalized food supply chain. This demands more sophisticated approaches. "BerryScan" emerges to blend traditional agricultural knowledge with modern tech solutions, aiming to usher in a new era of precision farming. The project addresses challenges such as manual labor intensity, delayed disease detection, accuracy issues, scalability problems, and the absence of data-driven insights in traditional methods, all of which can have environmental and economic repercussions.

This project aims to provide the following functionalities:

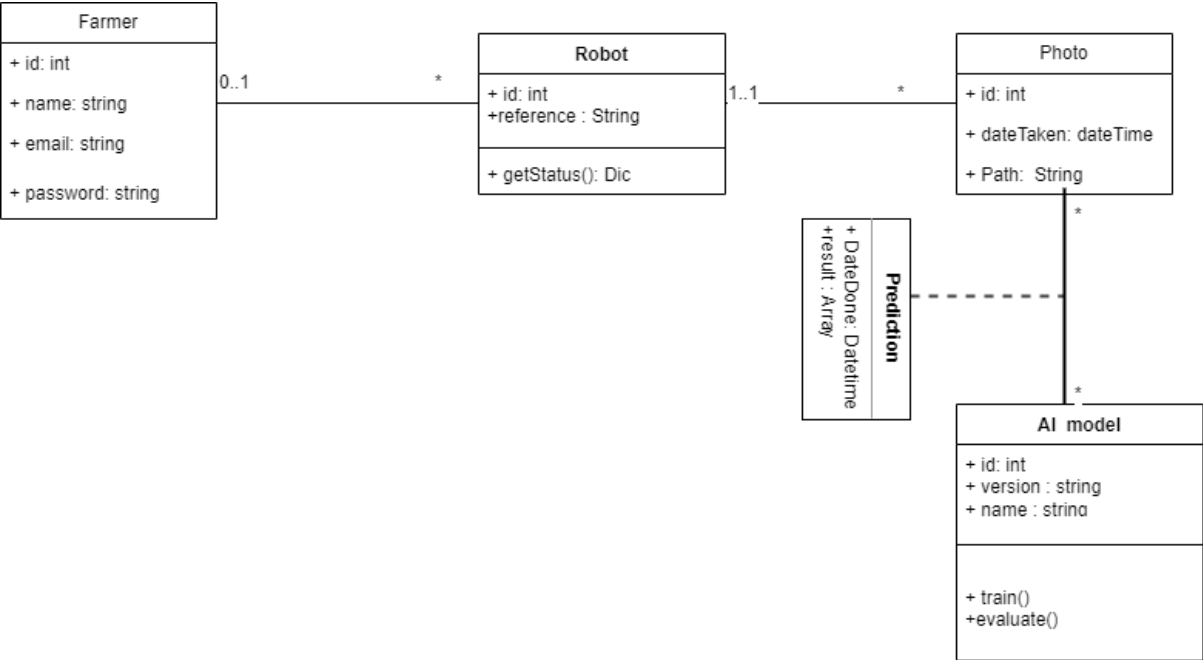
- **Automation:** Develop a mobile robot for autonomous navigation and high-definition image capture in strawberry fields.
- **Disease Detection:** Integrate an AI model to analyze captured images and accurately identify signs of diseases on leaves or fruits and show their position

2 UML Diagrams

Use case:



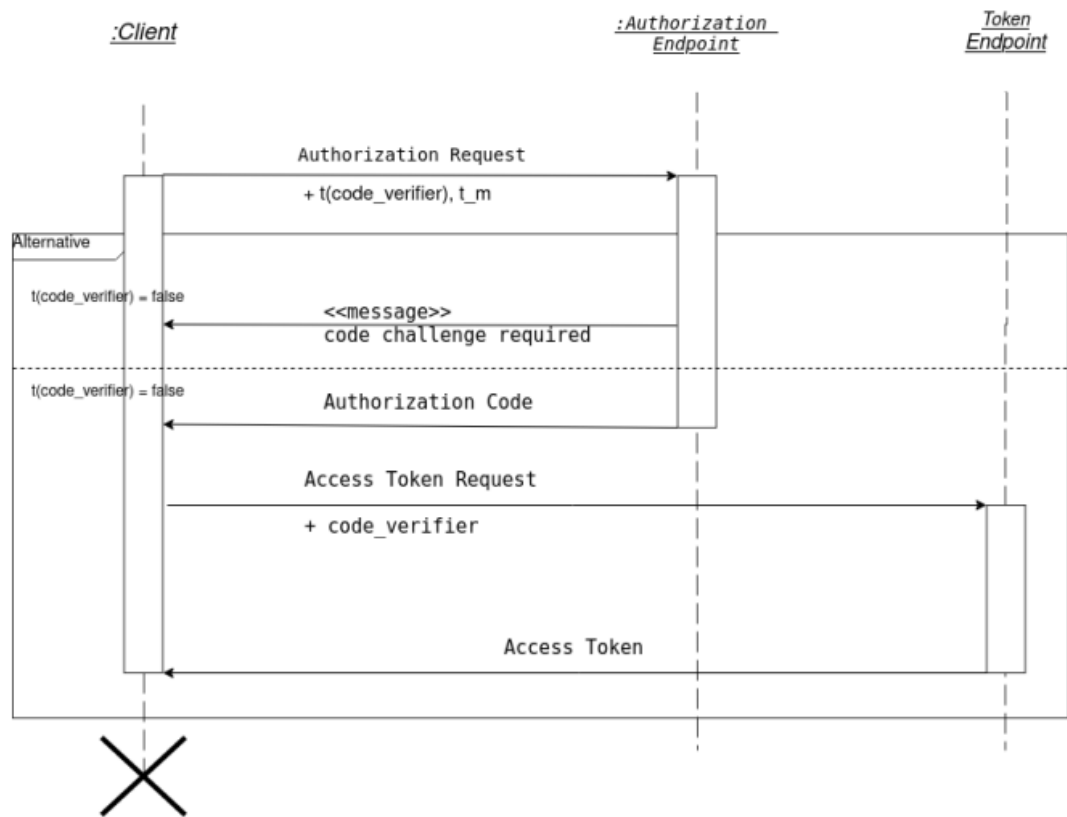
Class Diagram



Deployment Diagram



Sequence diagram for authentication:



Legend :

t(code verifier)= code challenge t

m = transformation method