**GrowWise - smart agricultural management system: data-driven solutions for efficient farm operations**

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The agricultural sector faces challenges such as inefficient resource utilization, unpredictable weather conditions, and complexities in workforce and inventory management. The demand for smart agricultural solutions is increasing, as data-driven decision-making enhances efficiency. GrowWise is an intelligent farm management system providing tools for monitoring plots and greenhouses, optimizing irrigation, tracking inventory, analyzing growth trends, managing expenses through a calculator and reports. The project is developed using Flask, a Python-based web framework, MongoDB for data management and OpenAI API for data analysis. It delivers smart insights, reduces waste and enhances farm operations. GrowWise is expected to be tested in a pilot program with a farmer to assess its impact. By giving farmers better control, GrowWise enhances profitability and advances sustainable agriculture.

Keywords: ai-driven agricultural insights, farm management, irrigation optimization, resource efficiency, smart agriculture.