



Introduction of Orchard Management Package in Python



Orchard Management

- This orchard management app is designed for orchard staff to store and display product information, estimate and control inventory, and manage their business orders.
- Package: Orchard Management
 - Subpackage 1: production
 - Subpackage 2: inventory and sales.



Package: product

Module: fruit

- Module “fruit” is designed to store and manage information about the types of crops in the orchard.
- Class: fruit
 - Variety
 - Features
 - Price
- Subclasses of fruit:
 - Different variety allowed and harvest seasons
 - Apple
 - Cherry
 - Peach



Fruit: Function

- Fruit introduction

Introduction the types, variety and characteristics of fruits grown in orchard

- Fruit seasonality check

Check if a specific fruit is in season based on the input month.

Check and identify all fruits that are currently in season.

- Fruit price calculation

Calculate the total price of a selection of fruit based on its individual price, quantities, and discount (marketing sell only)

- Fruit information store

Store all fruit categories and information into a file for convenient retrieval.



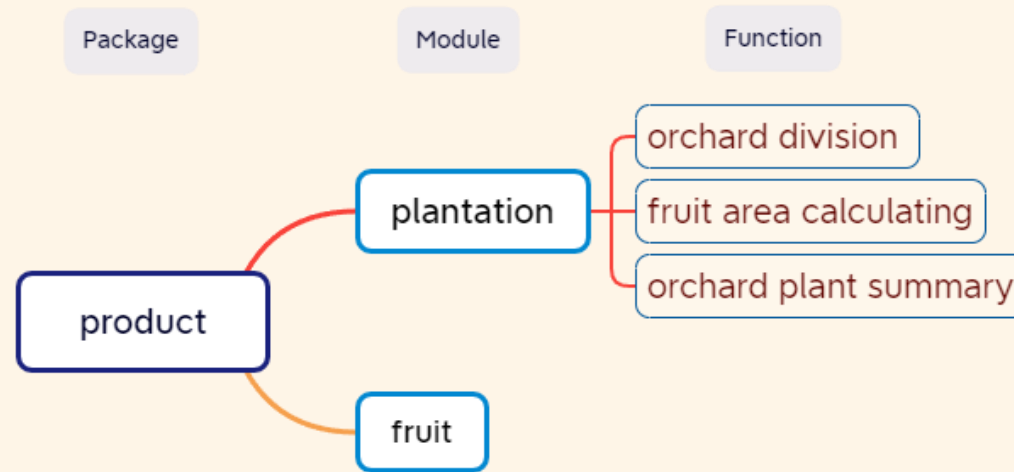
Package: product

Module: plantation

- Module plantation is designed to allocated lands for multiple kind of fruit trees.
- We divide the whole plantation into areas of varying size, and plant different crop varieties on them.
- Class: region
 - fruit
 - area
 - area type
- Two type of region:
 - We are dividing the regions into two distinct set: Some for visitor to pick by themselves and others for large-scale wholesale.
 - - picking plantation
 - - marketing planation



plantation: Function



- Orchard division

Organizing the entire plantation into distinct regions for fruit cultivation. And divide them into two different type: picking and marketing.

- Fruit area calculating

Calculate the total cultivation area of a specific plant.

- Orchard plantation summary

Provide a summary about detailing various planting regions and fruit varieties within the orchard. It returns as a summary which intended for estimating the fruit yield.





Subpackage: Inventory and sales



Module 1 : Inventory

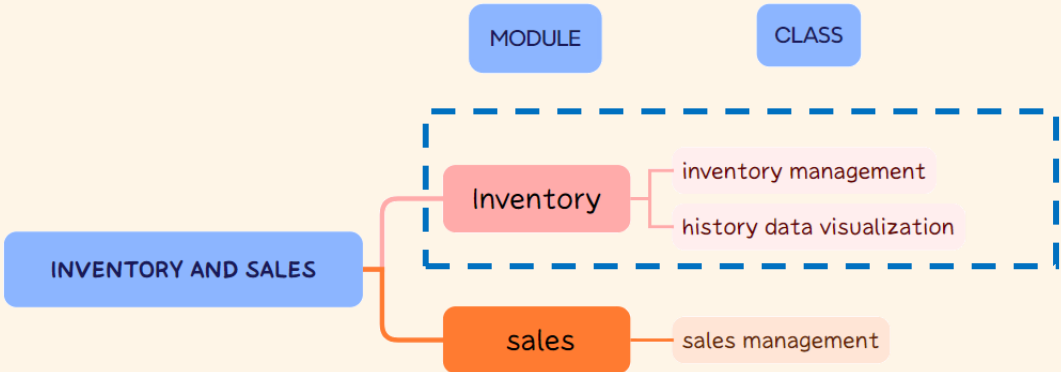
This module is designed for basic orchard inventory management. It contains two classes: InventoryManagement and Visualization.

InventoryManagement

This class is responsible for managing the current inventory status and forecasting the remaining yield (unharvested).

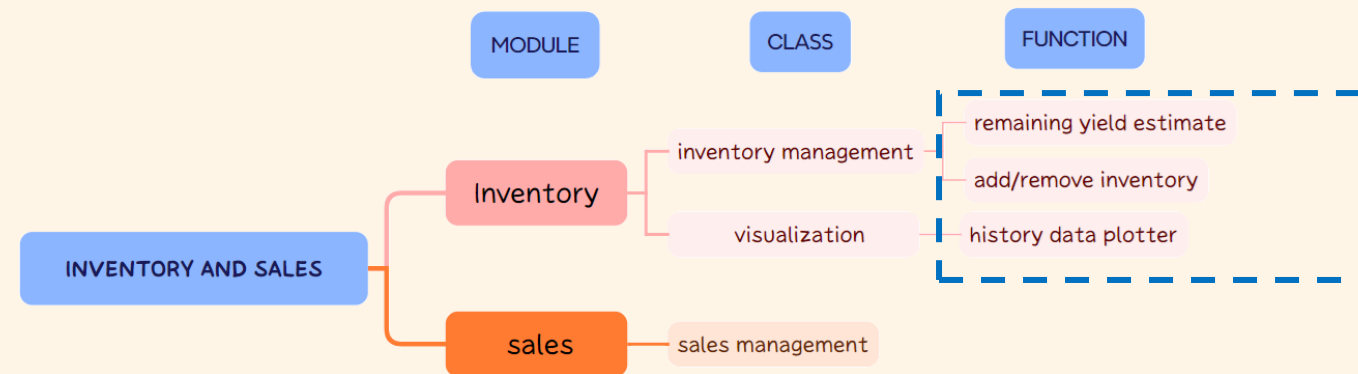
Visualization

This class is used for simple visualization of historical data.



Inventory : Functions

Three main functions revolve around inventory and visualization:



Remaining_Yield_Estimation

Calculates the expected yield for each variety based on the planting area in the first subpackage. And create a file to record the remaining capacity. An auxiliary method `save_overdraft`, will record the production output that exceeds the expected yield.

Add/Remove_Inventory

Add/Remove_Inventory: Used to increase or decrease inventory, with data being stored in an inventory data file. This involves auxiliary functions such as `Load/Save_data` and `Current_inventory_display`.

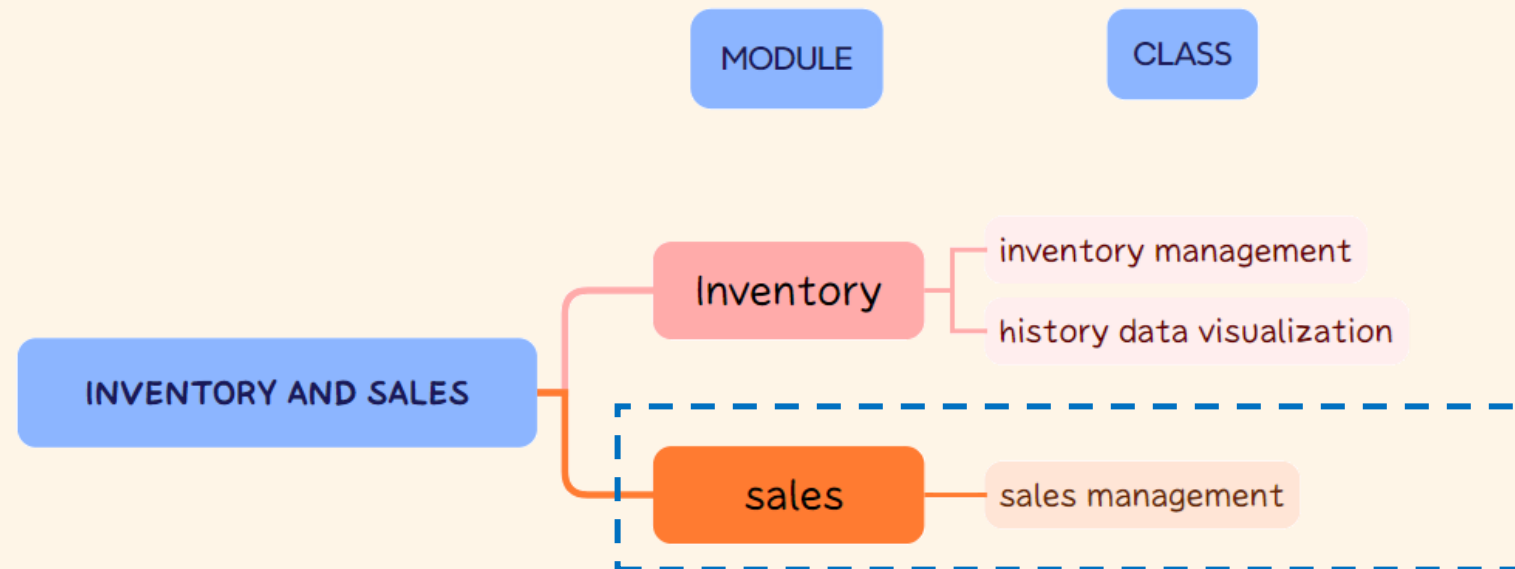
History_Data_Plotter

Draws a plot illustrating changes in inventory over time.



Module 2 : Sales

- This module is designed to manage order situations and includes a class called Sales Management.
- It handles different processes for sales, generates alerts when insufficient capacity, keeps track of historical orders, and performs basic revenue calculations.



Sales : Functions

Three functions primarily manage sales situations, interacting with functions in the inventory module to record inventory and remaining capacity changes.

Customer_Picking

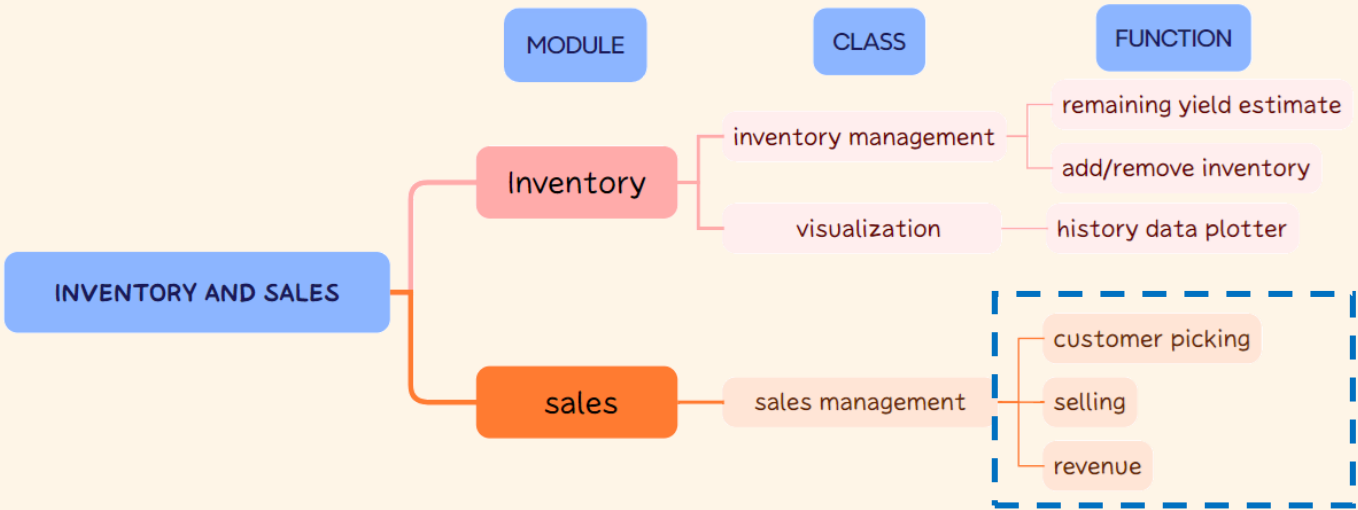
Records customer picking situations, only change remaining yield capacity without affecting warehouse inventory.

Selling

Records instances of direct customer purchases, modifying inventory data. Generate alert information when inventory or remaining capacity is not enough.

Orders and revenue

Records different orders and display revenue (costs are not considered in this context).





Thank you for your time!

