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# Design and Development of an Efficient Traceability System for Greek Kiwifruit

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# Motivation

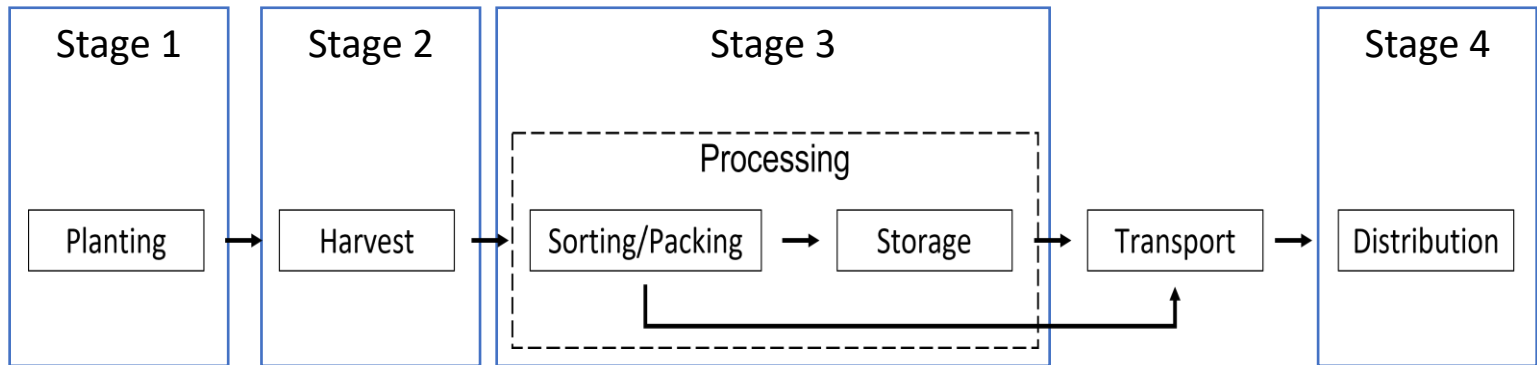
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- **Ensure the safety of kiwifruit**
- **Support its quality**
- **Promote to global market**

**Traceability is:**

**“the ability to trace and follow a food, feed, food-producing animal, and other substances to be consumed, through all stages of production, processing, and distribution”**

# The Kiwifruit supply chain





# Objective

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The design and develop of an integrated traceability system which:

- ✓ is able to file and communicate information regarding the quality and origin of the kiwifruits and guarantee consumer safety.
- ✓ integrate thea traceability system into the supply chain



# Methodology

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- Analysis and design
  - Requirements: business, functional, operational, and technological
- Implementation
  - Strategy, tools and technologies (IoT, Client-Server model, angular)
- Testing
  - a sequence of steps corresponding to the execution of a specific stage of the system

# System Architecture

## Technologies

- Cloud platform
- Web technologies

- Parcel code  
- Producer (Name, Phone, ..)  
- Coordinates  
- Location (Area, City,..)  
- Arable land  
- Kiwi species  
- Year of planting  
- Number of plants (stumps)  
- Soil information (pH, EC,..)  
- Water information (pH, ..)

- Cultivation work  
- Fertilization  
- Irrigation  
- Weeding  
- Plant protection  
- Plant protection products

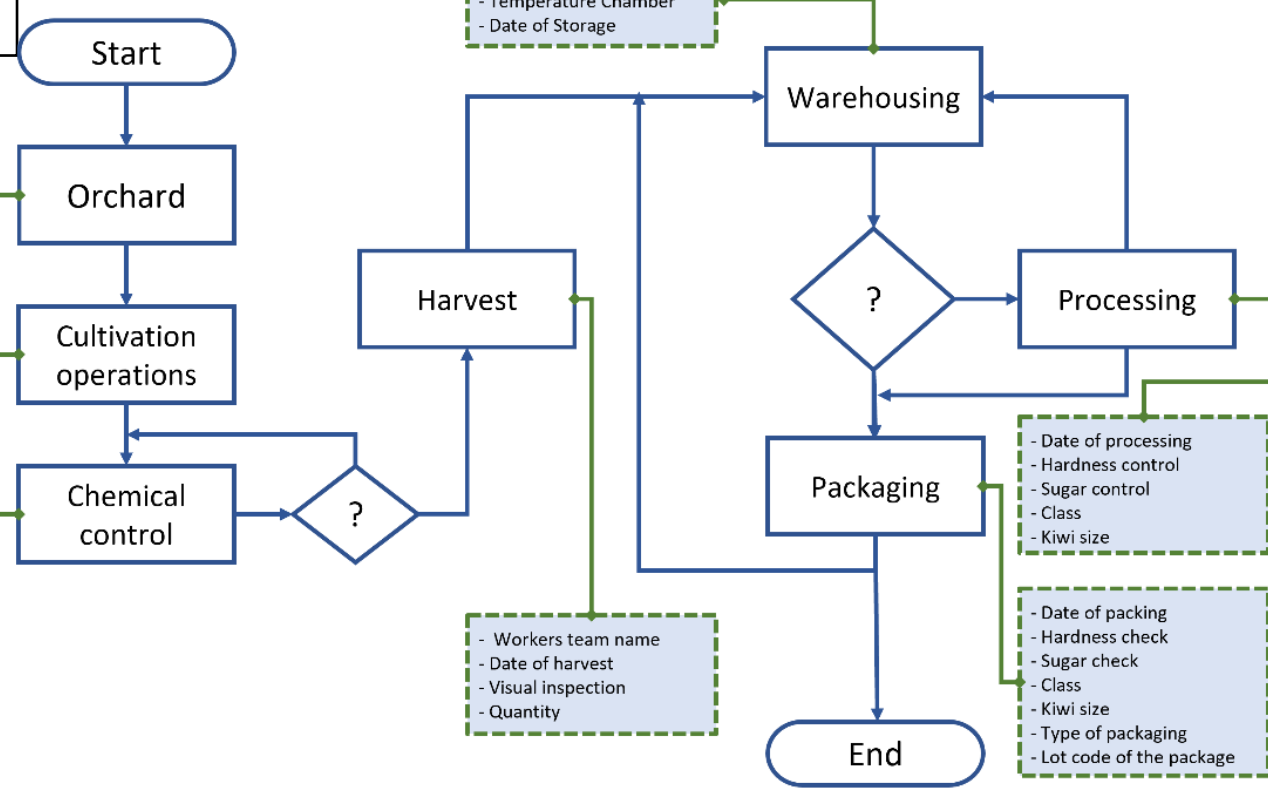
- Chemical test date  
- Kiwi hardness  
- Dry substance  
- Kiwi sugars

- Cooling chamber  
- Temperature Chamber  
- Date of Storage

- Workers team name  
- Date of harvest  
- Visual inspection  
- Quantity

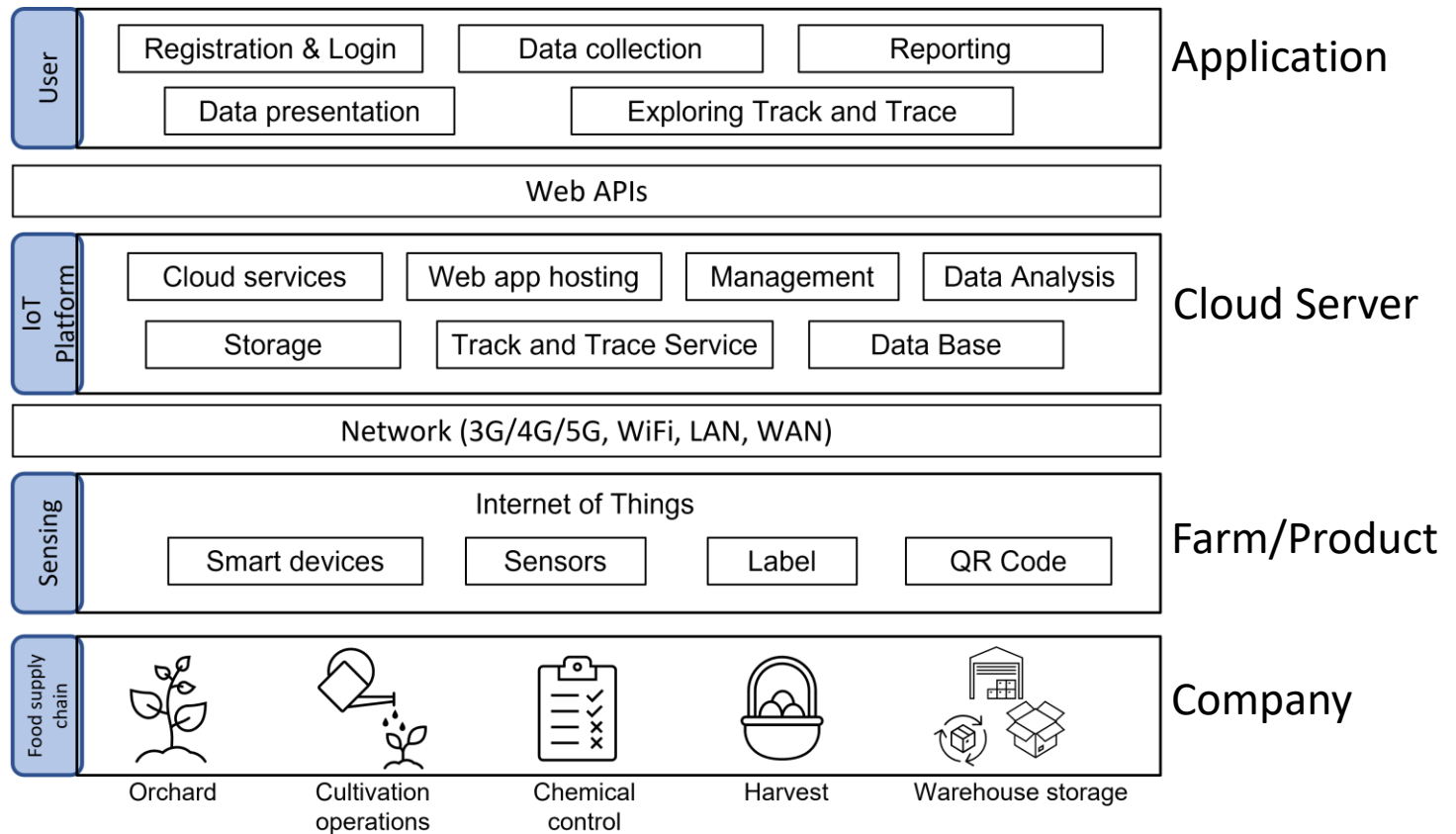
- Date of processing  
- Hardness control  
- Sugar control  
- Class  
- Kiwi size

- Date of packing  
- Hardness check  
- Sugar check  
- Class  
- Kiwi size  
- Type of packaging  
- Lot code of the package





# IoT Platform



# Server

Server



Database



- Based on ExpressJS and NodeJS
- Provide services to handle the data.
- Data are transmitted between the database and the front-end with the use of the REST API.
- Use a NoSQL database
- Store all traceability data.

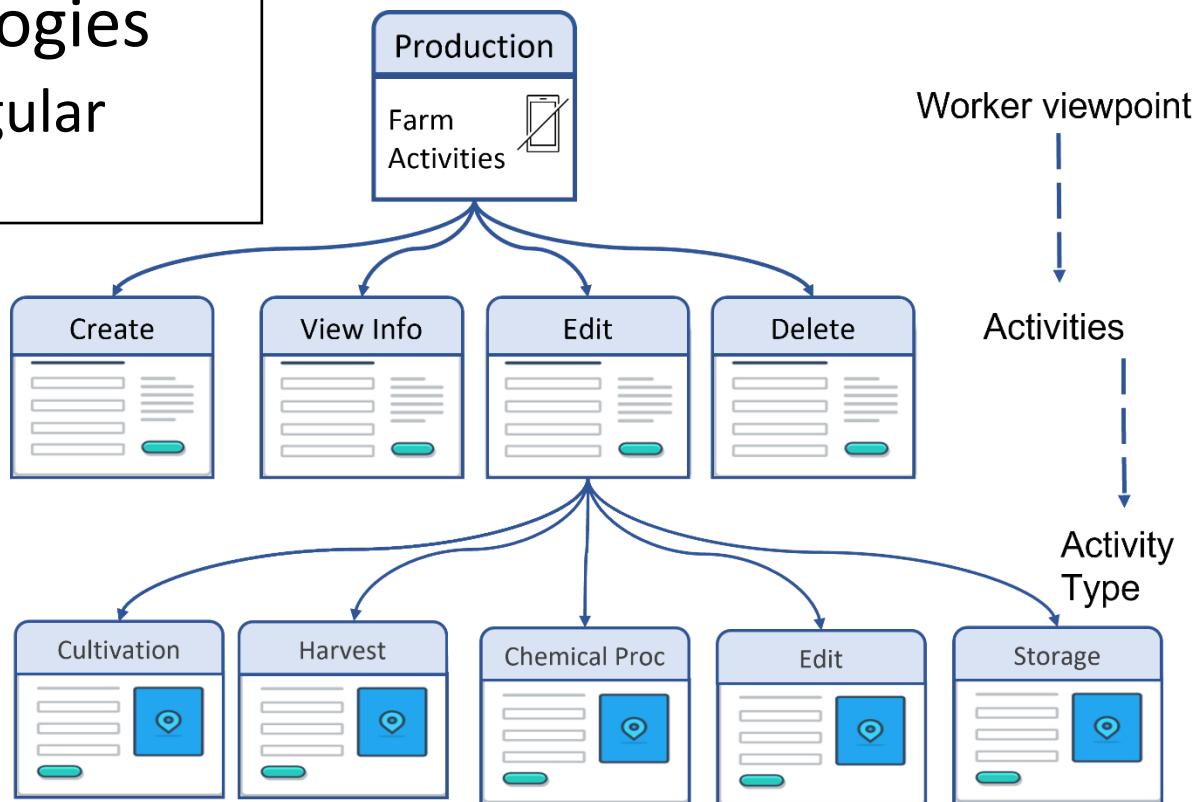




# Application workflow

## Technologies

- Angular





# Conclusions

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- Presented an Efficient Traceability System for the Greek Kiwifruit
  - Presented the Architecture of the System
  - Presented the Cloud Platform
  - Presented the Application Workflow
- This solution can be adapted to support other related sectors.



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# Thanks You

## ***Acknowledgment:***

This research is funded by Operational Programme “Epirus” 2014-2020, “Modern kiwi quality assessment system, traceability of kiwi product and intelligent supply chain management based on advanced IT applications ICT-Foodaware”, Co-financed by the European Regional Development Fund (ERDF).