**key modules interact** within the **Kalemie Agro Poultry Management System**:

**🔁 Core System Components**

This is the **foundation** of the system. It handles:

* **Authentication & RBAC** (Role-Based Access Control)
* **User management**
* **System configuration**

All other modules depend on this for secure access and consistent behavior.

**🖥️ Web App, 📱 Mobile App, 🌍 Public Website**

These are the **interfaces** through which users interact with the system:

* **Web App**: For managers and staff to access dashboards, reports, and manage operations.
* **Mobile App**: For field workers to input data, receive alerts, and track tasks.
* **Public Website**: For marketing, showcasing products, and customer engagement.

They **communicate with the API Layer** to fetch and send data.

**🔌 API Layer**

Acts as the **bridge** between:

* Frontend apps (Web, Mobile)
* Backend modules (Operations, Inventory, HR, etc.)
* External systems (e.g., payment gateways, SMS services)

It ensures **secure and structured data exchange**.

**🛠️ Admin Console**

Used by system administrators to:

* Manage users and roles
* Configure system settings
* Monitor system health

It interacts directly with the **Core System** and **Analytics** modules.

**🐔 Operations**

This module tracks:

* Poultry batches
* Daily routines (feeding, cleaning, vaccination)
* Health and productivity

It **feeds data into Analytics**, and **pulls resources from Inventory**.

**🛒 Commerce & Inventory**

Handles:

* Stock levels (eggs, meat, feed, cleaning supplies)
* Sales and purchases
* Supplier and customer records

It **interacts with Operations** (e.g., egg production updates stock), and **Finance** (e.g., sales generate revenue).

**👥 HR & Finance**

Manages:

* Employee records, payroll, roles
* Financial transactions, budgeting

It **connects with Inventory** (cost tracking), **Operations** (labor allocation), and **Analytics** (performance metrics).

**📊 Analytics & Reporting**

Centralized module for:

* Dashboards
* KPIs (egg production, mortality rate, sales trends)
* Exportable reports

It **pulls data from all modules** and provides insights for decision-making.

**🌐 IoT Sensors & Integration**

Monitors:

* Environmental conditions (temperature, humidity, ammonia levels)
* Equipment status

It **feeds real-time data into Operations and Analytics**, and can **trigger alerts** via the Mobile App or Web App.

**🔄 Module Interaction Example**

Let’s say a poultry batch shows signs of illness:

1. **Operations** logs the issue.
2. **IoT Sensors** confirm abnormal temperature.
3. **Analytics** highlights a spike in mortality.
4. **HR** assigns staff for emergency response.
5. **Inventory** checks for available medicine.
6. **Finance** logs the cost of treatment.
7. **Admin Console** updates protocols.
8. **Mobile App** alerts field workers.
9. **Web App** shows the full incident report.

Would you like this interaction flow visualized as a diagram or added to your documentation?