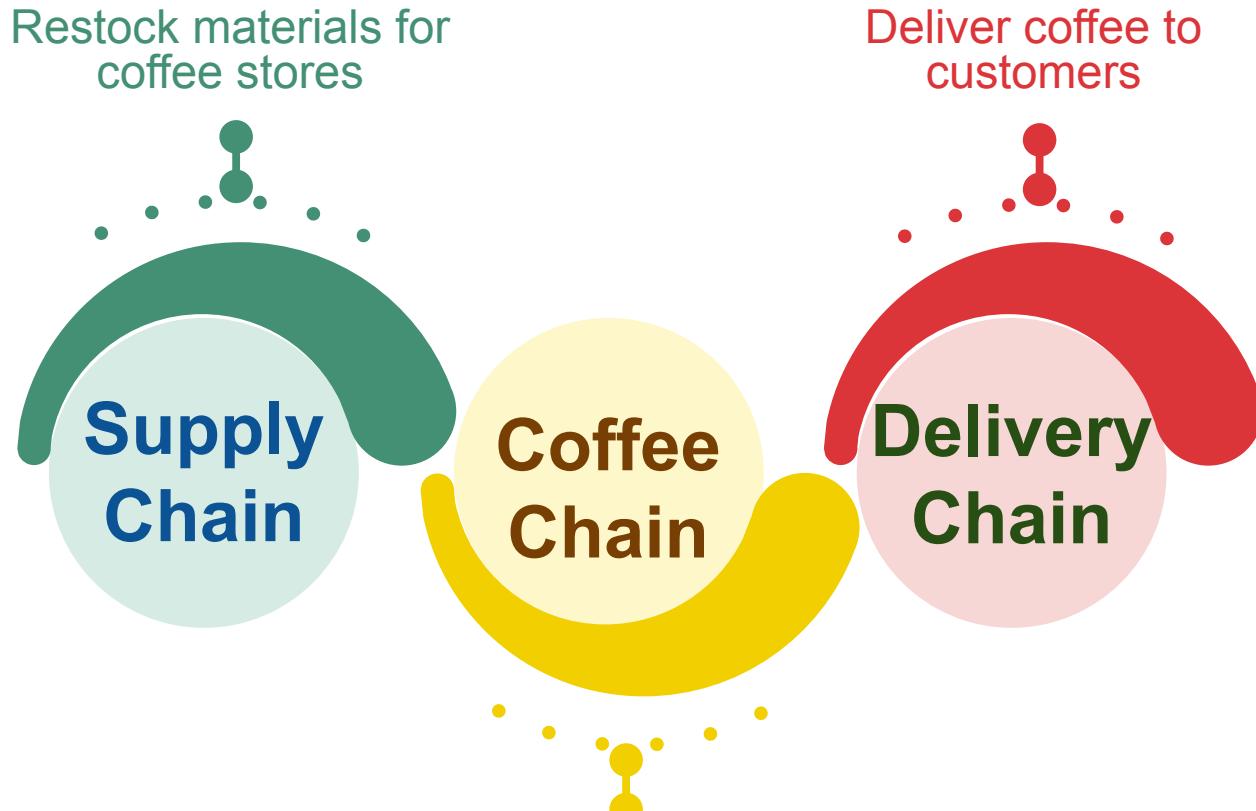


Ecosystem Coffee Chain + Supply Chain + Delivery Chain

Team Members: Shaowei Li • Jerry Xu • Li Zhang

Ecosystem



Storefront - take orders
and prepare coffee

Problem Statement

Cafe Chains use disconnected systems, which:

- Delays Communication
- Inhibits Coordination
- Causes Inefficiencies
- Lowers Data Visibility
- Limits Automation

Proposed Solution

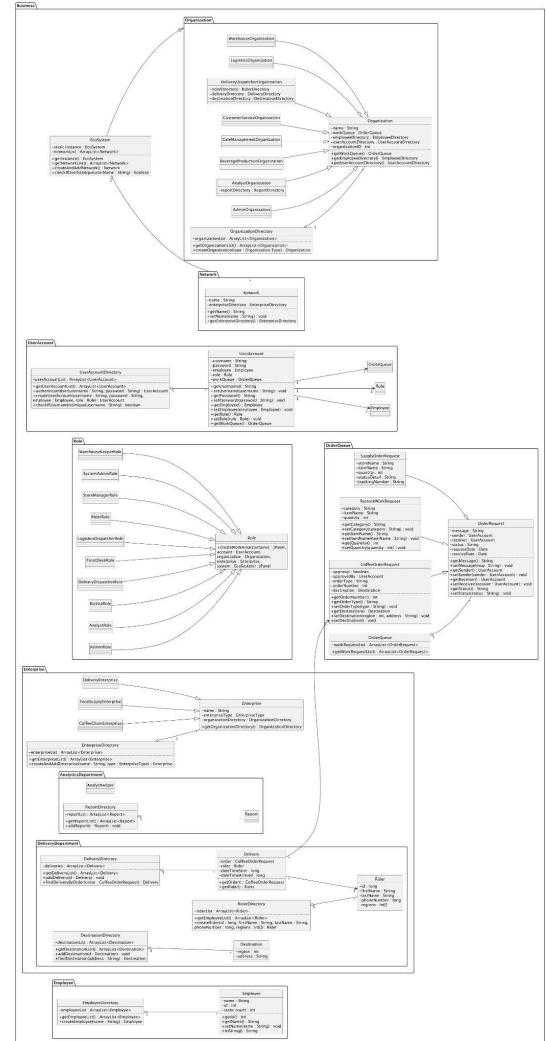
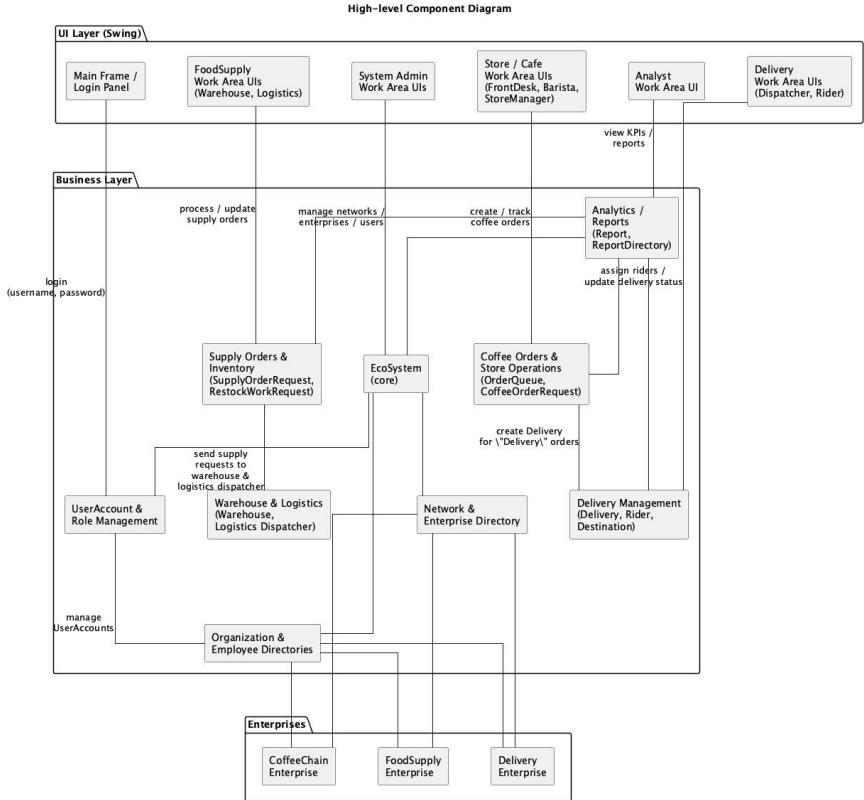
Three interconnected enterprises:

1. Store operations and management
2. Supplies, warehousing, and logistics
3. Assigning and dispatching delivery riders and delivery analytics

UML Class Diagram →

Component Diagram

Please see the separate attachment for a larger version



Brief Advanced Feature Introduction

Multi-Enterprise Ecosystem Integration

- Integrates Coffee, Supply Chain, and Delivery systems into one seamless network.

Role Based Access Control

- Supports 8 distinct user roles (plus 4 admins) across 7 organizations, and 3 enterprises.
- Ensures users only access functionality relevant to their specific roles.

Automated Cross-Enterprise Workflows

- Order Loop: *Front Desk* -> *Barista* -> *Delivery Dispatcher* -> *Rider*
- Supply Loop: *Store Manager* -> *Warehouse* -> *Logistics* -> *Store Receipt*

Data Analytics Function

- Analytics Department in the Delivery Enterprise generates rider and order performance reports to support data-driven business decisions.

UI Screenshots

User Name: Enterprise : CoffeeChain

Order List

Type	Order#	Order	Receiver	Status
Dine-in	101	Americano	b	Waiting
Delivery	102	Mocha	b	Delivered
Dine-in	101	Mocha	b	In-Progress
Delivery	100	Latte	a	Sent
Dine-in	99	Americano	b	Waiting
Delivery	98	Americano	b	Ready
Delivery	97	Mocha	b	Ready
Delivery	96	Espresso	b	Pending
Dine-in	95	Mocha	b	Waiting
Dine-in	94	Americano	b	Ready

[Create Order](#) [Refresh](#)

User Name: Enterprise : CoffeeChain

Coffee: Americano Type: Dine-in

Login Logout Place Order

Delivery Address:

<< Back

User Name: Enterprise : CoffeeChain

Order List

Type	Order#	Order	Receiver	Status
Delivery	103	Americano	b	Ready
Delivery	102	Mocha	b	Delivered
Delivery	101	Mocha	b	In-Progress
Delivery	100	Latte	a	Sent
Delivery	99	Americano	b	Waiting
Delivery	98	Americano	b	Ready
Delivery	97	Mocha	b	Ready
Delivery	96	Espresso	b	Pending
Delivery	95	Mocha	b	Waiting
Delivery	94	Americano	b	Ready
Delivery	93	Espresso	b	Ready
Delivery	92	Mocha	b	Waiting
Delivery	91	Americano	b	Delivered
Delivery	90	Americano	b	Sent
Delivery	89	Espresso	b	Pending

[Assign Order to me](#) [Order Finished](#) [Refresh](#)

User Name: tm

Item: Coffee - Dark Roast Quantity: Request Supplies

Supply Orders

Order	Quantity	Sender	Receiver	Tracking No.	Status
Coffee Items - Dark...	500	sm	N/A		Sent to Warehouse
Coffee - Decaf x5 f...	500	sm	wh	N/A	Prepared in Warehouse
Cups - Small (12oz) ...	184	sm	wh	N/A	Prepared in Warehouse
Milk - Whole x12 for...	12	sm	N/A		Sent to Warehouse
Milk - Skim x107 for ...	107	sm	ld	92807198	Out for Delivery
Other x103 for Main ...	103	sm	N/A		Sent to Warehouse
Coffee - Dark Roast ...	103	sm	ld	4306410	Delivered to Store

[Confirm - Received by Store](#) [Refresh](#)

User Name: wh

Warehouse Keeper Work Area

Order	Store	Item	Quantity	Sender	Status
Coffee Beans - Dark Roast x10	Main Coffee Store	Coffee Beans - Dar...	100	sm	Sent to Warehouse
Coffee - Decaf x50 for Main Coff...	Main Coffee Store	Coffee - Decaf	50	sm	Prepared in Wareh...
Cups - Small (12oz) x84 for M...	Main Coffee Store	Cups - Small (12oz)	184	sm	Sent to Warehouse
Milk - Whole x18 for Main Coff...	Main Coffee Store	Milk - Whole	181	sm	Sent to Warehouse
Milk - Skim x100 for Main Coff...	Main Coffee Store	Milk - Skim	100	sm	Out for Delivery
Other x183 for Main Coffee Sto...	Main Coffee Store	Other	183	sm	Sent to Warehouse
Coffee - Light Roast x50 for Main Coff...	Main Coffee Store	Coffee - Light Roast	202	sm	Delivered to Store
Coffee - Decaf x50 for Main Coff...	Main Coffee Store	Coffee - Decaf	89	sm	Out for Delivery
Coffee - Light Roast x50 for Main Coff...	Main Coffee Store	Coffee - Light Roast	85	sm	Sent to Logistics
Milk - Whole x150 for Main Coff...	Main Coffee Store	Milk - Whole	150	sm	Sent to Logistics
Coffee - Dark Roast x50 for Main Coff...	Main Coffee Store	Coffee - Dark Roast	48	sm	Out for Delivery
Cups - Large (20oz) x10 for Main C...	Main Coffee Store	Cups - Large (20oz)	14	sm	Prepared in Wareh...
Other x65 for Main Coffee Sto...	Main Coffee Store	Other	66	sm	Delivered to Store
Coffee - Decaf x100 for Main Coff...	Main Coffee Store	Coffee - Decaf	199	sm	Sent to Logistics

[Refresh](#) [Mark Prepared](#) [Send to Logistics](#)

UI Screenshots

Logistics Dispatcher Work Area

Order	Store	Item	Quantity	Status	Tracking No.
Milk - Skim x107 for Main C...	Main Coffee Store	Milk - Skim	107	sm	Out for Delivery 92807158
Coffee - Dark Roast x102 fo...	Main Coffee Store	Coffee - Dark R...	102	sm	Delivered to Store 45026450
Coffee - Decaf x100 for Ma...	Main Coffee Store	Coffee - Decaf	100	sm	Out for Delivery 31515478
Coffee - Light Roast x85 fo...	Main Coffee Store	Coffee - Light R...	85	sm	Sent to Logistics
Cups - Large (20oz) x180 f...	Main Coffee Store	Cups - Large (...	180	sm	Sent to Delivery 20570538
Coffee - Dark Roast x48 fo...	Main Coffee Store	Coffee - Dark R...	48	sm	Out for Delivery 20570538
Cups - Large (20oz) x180 f...	Main Coffee Store	Cups - Large (...	180	sm	Delivered to Store 62660778
Coffee - Decaf x44 for Ma...	Main Coffee Store	Coffee - Decaf	44	sm	Sent to Delivery 97138719
Cups - Large (20oz) x134 f...	Main Coffee Store	Cups - Large (...	134	sm	Out for Delivery 97138719
Cups - Large (20oz) x128 f...	Main Coffee Store	Cups - Large (...	128	sm	Received by Store 38664614
Coffee - Medium Roast x110 ...	Main Coffee Store	Coffee - Mediu...	110	sm	Received by Store 29461219
Other - 100% Organic x12 fo...	Main Coffee Store	Other - 100% O...	12	sm	Received by Store 30973043
Coffee - Dark Roast x179 fo...	Main Coffee Store	Coffee - Dark R...	179	sm	Received by Store 27028844
Milk - Almond x64 for Main...	Main Coffee Store	Milk - Almond	64	sm	Sent to Logistics

Buttons: Refresh, For Delivery, Delivered

Delivery Dispatch Control Panel

User Name	Password	Login	Logout
dd		<input type="button" value="Login"/>	<input type="button" value="Logout"/>

Buttons: Manage Deliveries, Manage Delivery Destinations, Manage Riders

Manage Orders and Pending Deliveries

Order ID	Date Ordered	Date Delivered	Assigned Rider	Destination	Status
2	Wed Dec 03 20...	N/A	Unassigned	123 Java Street...	Ready
3	Wed Dec 03 20...	N/A	Unassigned	456 Elm Street...	Pending
4	Wed Dec 03 20...	N/A	Unassigned	005 Katie Ranch	Ready
5	Wed Dec 03 20...	N/A	Unassigned	8647 Noah Ranch	Pending
7	Wed Dec 03 20...	N/A	Unassigned	1114819512812818	Delivered
8	Wed Dec 03 20...	N/A	Unassigned	8625 Labadee J...	Pending
9	Wed Dec 03 20...	N/A	Unassigned	01234567890123456789	Delivered
10	Wed Dec 03 20...	N/A	Unassigned	110 Parker Mo...	Sent
11	Wed Dec 03 20...	N/A	Unassigned	748 Juliet Turn...	In-Progress
12	Wed Dec 03 20...	N/A	Unassigned	1098 Main Street...	In-Progress
13	Wed Dec 03 20...	N/A	Unassigned	1142 Clair Ranch	In-Progress
17	Wed Dec 03 20...	N/A	Unassigned	2388 Wolf Bridge	Ready
18	Wed Dec 03 20...	N/A	Unassigned	2388 Wolf Bridge	Sent
20	Wed Dec 03 20...	N/A	Unassigned	16334 Matt Pral...	In-Progress
21	Wed Dec 03 20...	N/A	Unassigned	098765432109876543210	In-Progress
22	Wed Dec 03 20...	N/A	Unassigned	43016 Edmund...	In-Progress
25	Wed Dec 03 20...	N/A	Unassigned	2201 Main Street...	Ready
27	Wed Dec 03 20...	N/A	Unassigned	4105 Mose Cre...	In-Progress
32	Wed Dec 03 20...	N/A	Test Rider	16749 Fidella MI	Delivered
33	Wed Dec 03 20...	N/A	Unassigned	5901 Hudson Hill...	Delivered

Buttons: << Back, Assign Rider

Manage Destinations

User Name	Order	Destination	Status
dd	2	123 Java Street...	Ready
	3	456 Elm Street...	In-Progress
	4	005 Katie Ranch	Ready
	5	8647 Noah Ranch	Pending
	7	1114819512812818	Delivered
	8	8625 Labadee J...	Pending
	9	01234567890123456789	Delivered
	10	110 Parker Mo...	Sent
	11	748 Juliet Turn...	In-Progress
	12	1098 Main Street...	In-Progress
	13	1142 Clair Ranch	In-Progress
	17	2388 Wolf Bridge	Ready
	18	2388 Wolf Bridge	Sent
	20	16334 Matt Pral...	In-Progress
	21	098765432109876543210	In-Progress
	22	43016 Edmund...	In-Progress
	25	2201 Main Street...	Ready
	27	4105 Mose Cre...	In-Progress
	32	16749 Fidella MI	Delivered
	33	5901 Hudson Hill...	Delivered

Buttons: << Back, Edit Destination Regions, Edit Order Destination

Rider Management & Registration

User Name	Rider ID	Rider Name	Phone Number
dd	101	Test Rider	9876543210
	200	Alexander Mark	9876543210
	201	Rupert Braun	9876543210
	202	Delmar Marks	9876543210
	203	Nikolaus Crooks	9876543210
	204	Jayme Jackson	9876543210

Fields: Rider First Name, Rider Last Name, Account Username, Account Password

Checkboxes: Rider Delivery Regions

- Region 1 Region 6
- Region 2 Region 7
- Region 3 Region 8
- Region 4 Region 9
- Region 5

Buttons: << Back, New, Edit

UI Screenshots

