

Data ENGINEER · RIYADH, SAUDI ARABIA

Ammar Hammouch.

[View the work→](#)

About.

Data engineer who enjoys Building data pipelines and platforms, not just queries. Built an end-to-end LLM-Ops data platform covering abatch orchestration on Airflow, streaming and anomaly detection on Kafka, and a DuckDB medallion warehouse, wired together with schema contracts that fail in CI.

At Entropy, I built a dataset quality pipeline validates CSV, XML, and JSON and catches corrupt files before they reach downstream systems. At Thmanyah, I Built a multi-source aggregation engine that cut manual reporting by ~60%.

4

Years building in
production

10

Flagship projects

5

Pipelines shipped

5

Cloud & AI certifications



Education & Certifications.

EDUCATION

Bachelor of Computer Science

JazanUniversity · 2021–2025

FIRST CLASS HONOURS

4.86 / 5.00 GPA



CERTIFICATIONS

Five, across cloud architecture, databases, and AI foundations

OCI Certified Architect Associate	✓
Oracle · November2025	
Oracle Autonomous Database Cloud Professional	✓
Oracle · November2025	
OCI Certified AI Foundations Associate	✓
Oracle · October2025	
ML Engineering and MLOps Training	✓
Qafza · March2025	
AWS Cloud Practitioner (CLF-C02)	✓
AWS · 2025	

What I actually use.

LANGUAGES

TypeScript

Python

JavaScript

SQL

Java

DATA ENGINEERING

Airflow

Spark / PySpark

dbt

DuckDB

Kafka

Faust

TimescaleDB

Iceberg

Snowflake

DATABASES

PostgreSQL

MySQL

MongoDB

Firebase RTDB

Drizzle ORM

PGlite

INTEGRATION & SECURITY

ZATCA / FAT00RA

ECDSA secp256k1

XAdES

Oracle NetSuite

Open Banking (Lean)

OAuth / JWT

Webhooks

FRAMEWORKS

Next.js

React.js

React Native

NestJS

FastAPI

Flutter

DURABLE EXECUTION & QUEUING

Restate

BullMQ

RabbitMQ

graphile-worker

Redis

CLOUD & INFRA

GCP · Cloud Run / Functions / Pub-Sub

AWS · S3 / Lambda

Docker

GitHub Actions

TESTING & TOOLING

Cypress

Vitest

PGlite

Git

Four years. Five companies.

●	Software Engineer · Entropy CURRENT 09/2025 – Present LLM evaluation infrastructure · dataset ingestion pipeline · RAG chatbots Python · BullMQ · Redis · FastAPI · Label Studio
●	Integration Specialist · Thmanyah 01/2025 – 05/2025 HR automation platform (payroll, probation) · multi-source aggregation engine · ~60% reporting time cut Puppeteer · Drizzle ORM · BullMQ · Next.js
●	React Native Developer · Motmaina Medical Center 04/2024 – 12/2024 Telehealth app end-to-end · Next.js admin dashboard · AWS media backend · Nafath identity verification ReactNative · Next.js · ReactQuery · AWS S3 / Lambda
●	Technology Integration Intern · Reachware 08/2023 – 04/2024 ZATCA Phase 2 compliance · Snowflake financial pipelines · Oracle NetSuite / Fusion sync Snowflake · ZATCA · Oracle Fusion · XML
●	Enterprise Application Developer · COMT 08/2022 – 08/2023 Full POS built from scratch, sole engineer · offline-first sync · sub-30-second transaction cycle · co-founder ReactNative · RealmDB · Firebase · ZATCA Phase 2

WORK

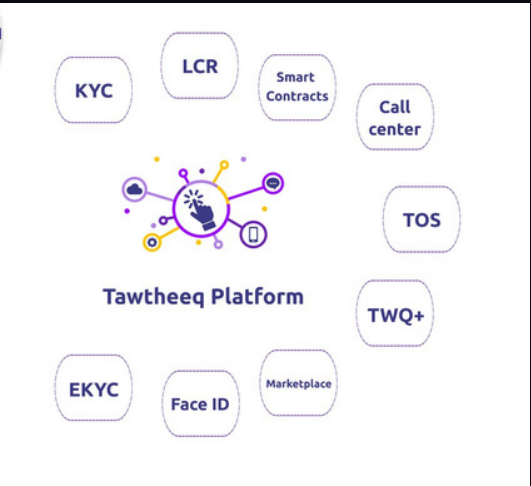
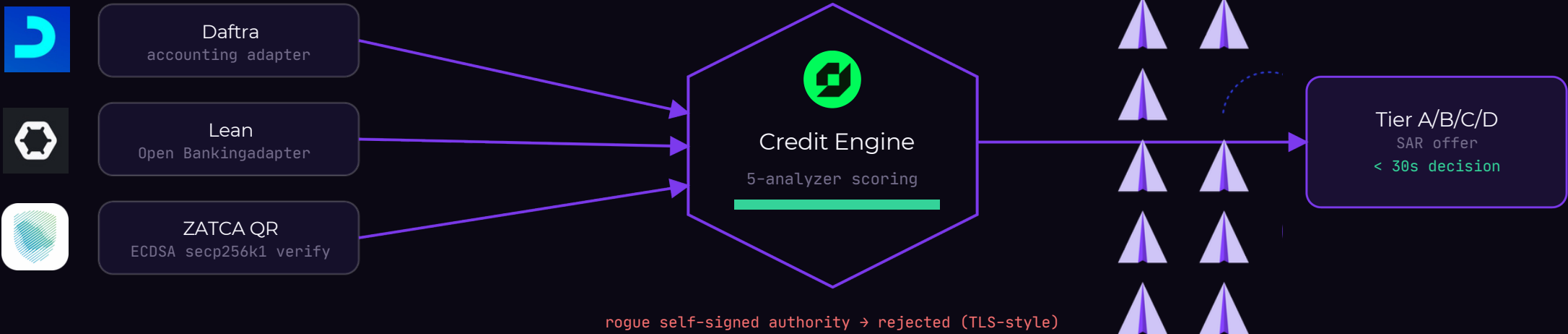
Flagship Projects.

Tensystems,inthreethroughlines:applied cryptography, durable execution,
and data engineering at scale.

Credit Engine

Automated SME credit engine for the Saudi market — combines accounting data, Open Banking transactions, and ZATCA invoiceQR codes into an explain able tier-band decision.

Solo build · ~2 weeks · 47 tests · ~6,000 lines TypeScript



Tawtheeq Case Study

A-D

explainable tier bands

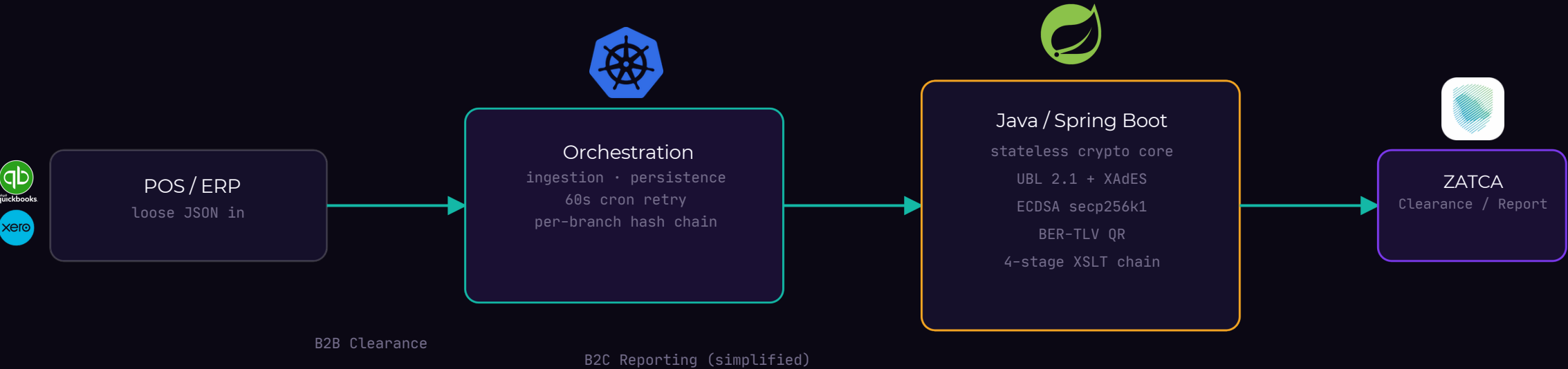
0

framework imports in domain

02 · E-Invoice

ZATCA Phase 2 E-Invoicing Middleware

Integration middleware absorbing the impedance mis match between for giving POS/ERP JSON and ZATCA's strictly-schematized, cryptographically signed UBL 2.1 XML.



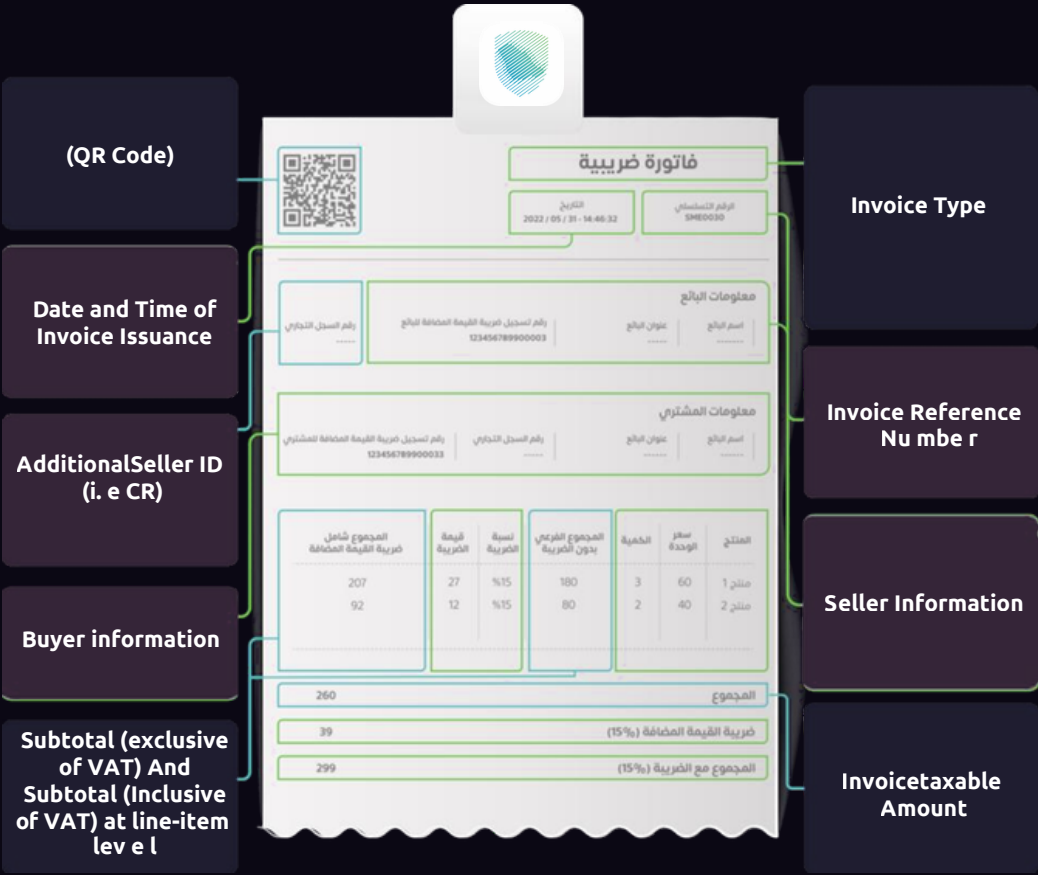
Pluggable API middleware that connects existing POS and ERP systems to ZATCA tax platform. It bridges the gap between standard software and government compliance

A Node.js orchestration tier handles ingestion and retry queues, while a stateless Java/Spring Boot core applies digital signatures and generates compliance QR codes.

ZATCA Phase 2 E-Invoicing Middleware



Simplified Tax Invoice
Business to Consumer (B2C)



Tax Invoice
Business to Consumer (B2B)

03 · DATA ENGINEERING FLAGSHIP

Mozn Platform

End-to-end LLM-Ops data platform, coupled sub-systems covering the three legs of data engineering: batch evaluation, streaming observability, and analytics warehousing.

Framed as both production-shipped and portfolio-grade · dedicated deep-dive available



HOW THEY COUPLE

Balsam emits to **llm.evaluations** on run completion → Mizan correlates cost with scores → Basira federates Balsam's Postgres and Mizan's Iceberg/Timescale into a dbt warehouse. breaking change fails at the boundary, never silently downstream.

3

coupled sub-systems



11

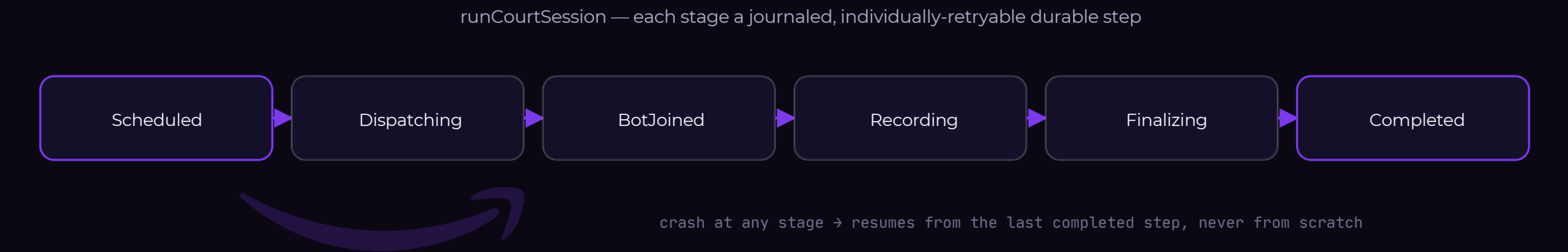
task DAG(Balsam)



Moyassier

Headless meeting-intelligence bot for online sessions — joins, records, transcribes, and produces structured intelligence for the judge over 4+hour hearings.

Restate durable orchestration · chosen over Temporal for this context



RESTATE

A single self-contained binary vs. Temporal's multi-tier stateful control plane matters directly under PDPL in-KSA data residency, where Temporal Cloud isn't available. Scored on a weighted decision matrix (73 vs 57) — with Temporal's real wins (maturity, hiring pool, extreme-scale track record) stated honestly.

4h+

session length

1

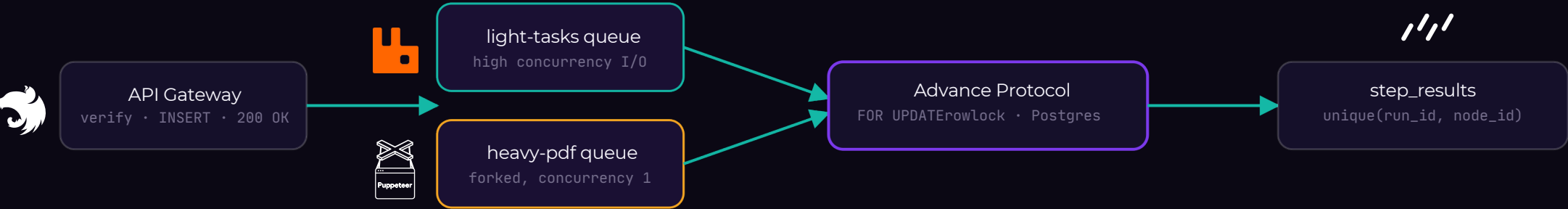
binary, self-hosted



Flow Studio

Webhook-driven form aggregation and document-generation platform — orchestration is a Postgres transaction every worker runs, not a separate service.

Documentation-driven blueprint · the load-bearing invariant: next task is a pure function of (definition, step_results)

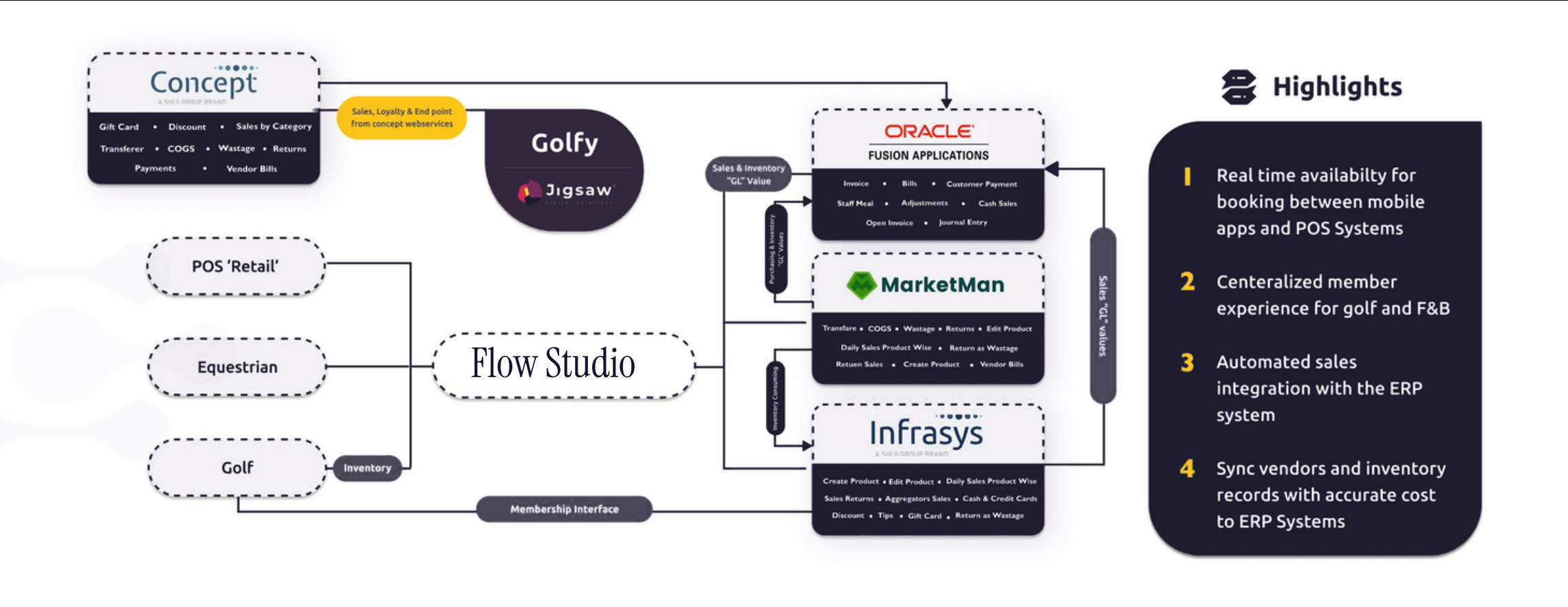


no coordinator – every worker runs the same advance transaction on completion

WORKER ISOLATION

Two physical worker classes over separate BullMQ queues — a forked, concurrency-1 PDF renderer that OOMs kills only itself, never email delivery or data mapping.

Entertainment Case Study

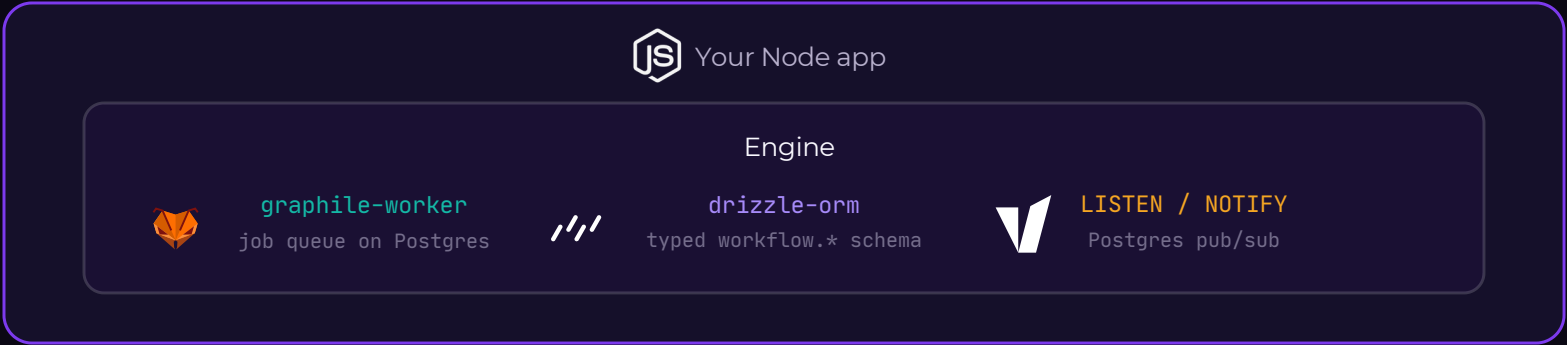


06 · DURABLE EXECUTION CLUSTER

IterateForge

Adurableworkflow engine that runs inside your Node.js app on top of Postgres — no separate orchestration service. If the process dies at step 3 of 10, it resumes at step 3.

• inspired by Temporal, Trigger.dev



PRIMITIVES

`ctx.step` memoizes once per run; `ctx.sleep` suspends durably across deploys; `ctx.signal` waits on an external event. No Redis, no Kafka, everything lives in Postgres.

VERSIONING DISCIPLINE

A regression-protected version bump catches replay-incompatible edits at registration, not as silent corruption mid-run — the flow body re-runs on every resume, only steps/sleeps/signals short-circuit.

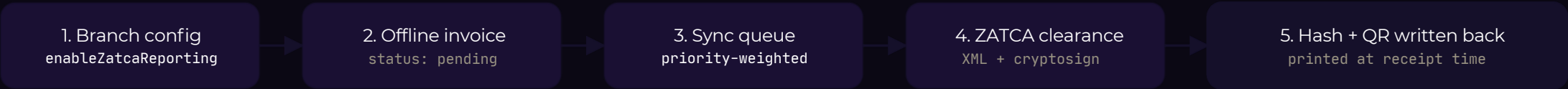
Waseel

On-demand 3PL marketplace for heavy cargo — trucks and freight, Live carrier pricing by GPS proximity, full shipmenttracking,tri-role event-driven lifecycle.



COMT — F&B Point-of-Sale Platform

Full-stack POS comparable to Foodics and Rewaa—built with ZATCA Phase 2 compliance



no API call exists on the critical path from item scan to printed receipt

<30s

transaction cycle

100%

offline capability



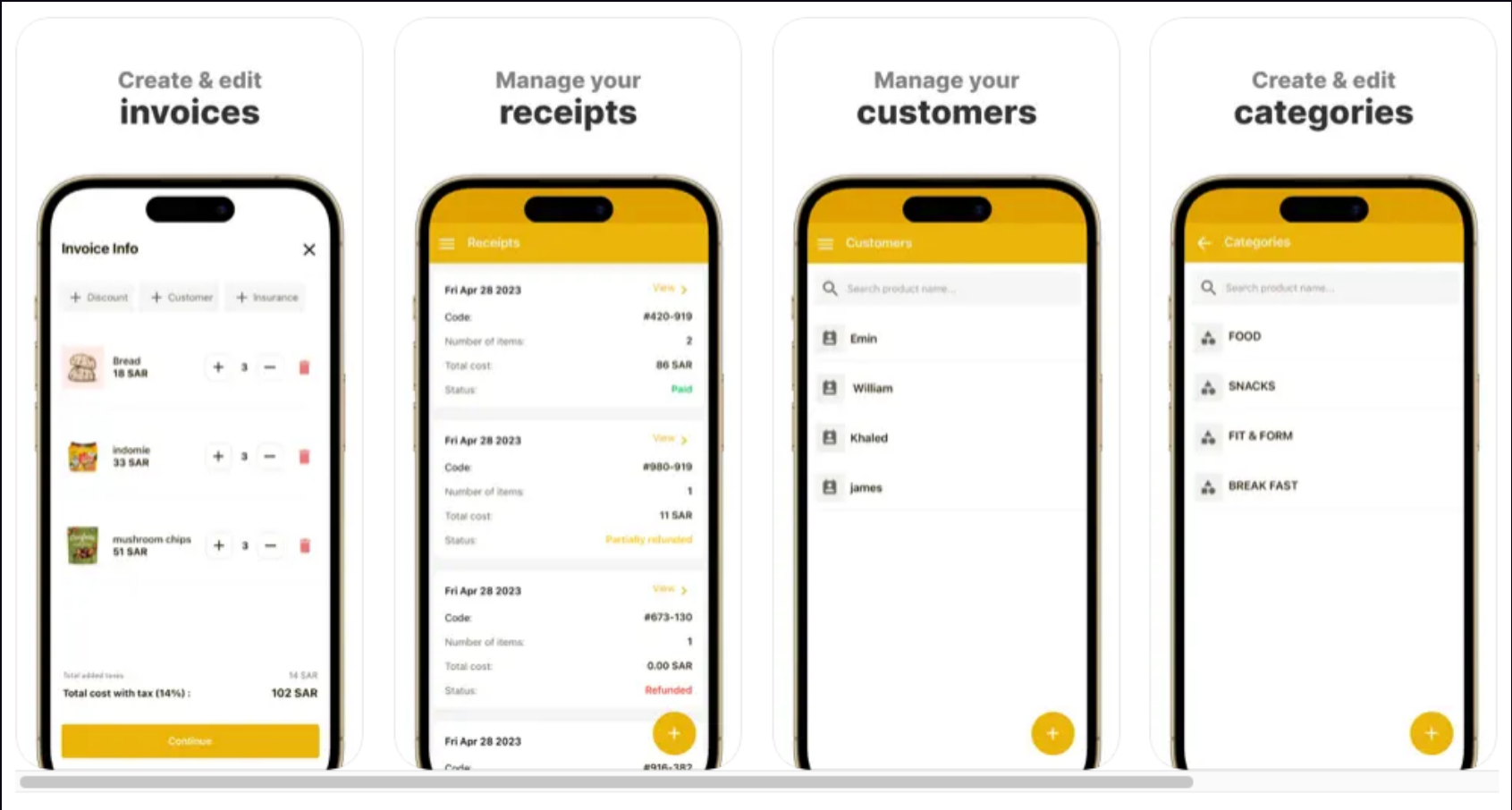
Zatca
Phase 2

- React Native
- RealmDB
- ESC/POS printer abstraction
- 20+ permission flags
- GCP Cloud Run

08 · SHIPPED FLAGSHIP

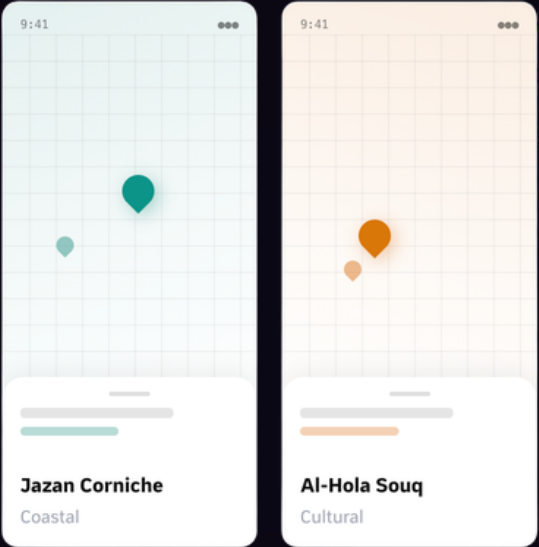
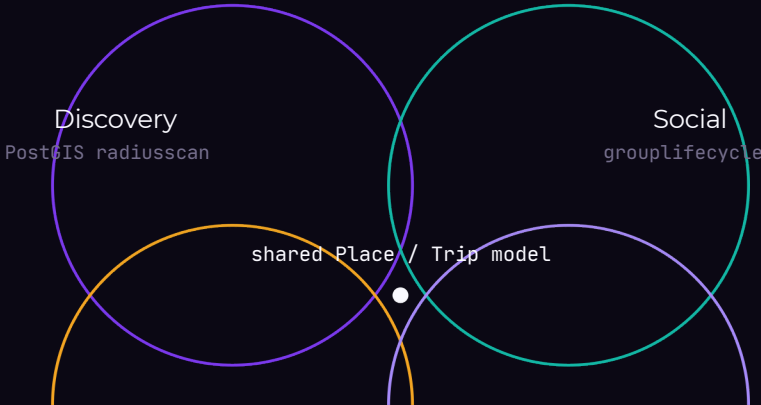
COMT — F&B Point-of-Sale Platform

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Jawlat

Localized tourism and social discovery platform for Jazan — four coupled domains (geospatial discovery, social groups, guide marketplace, live tracking) sharing one Place/Trip model.



ios

Localized tourism mobile app with a fully mirrored ,interface. Managed dynamic view layers that combine location discovery, group trip schedules, and guide bookings onto a unified map.

5ms

indexed vs 4s unindexed

4

coupled domains

Integration WORK

Client Integration Case Studies.

ZATCA Integration

Simplified ZATCA integration system ,built to plug into any POS or ERP system without custom work per client.



- Data validation
- E-inv data enrichment
- ZATCA interaction
- Printable A3
- PDF with embedded XML with QR-Code
- Digital invoice exchange
- Archival

Clearance/
Reporting

ZATCA
clearance



Highlights

Plug-n-play APIs, Easy integration with any ERP/POS

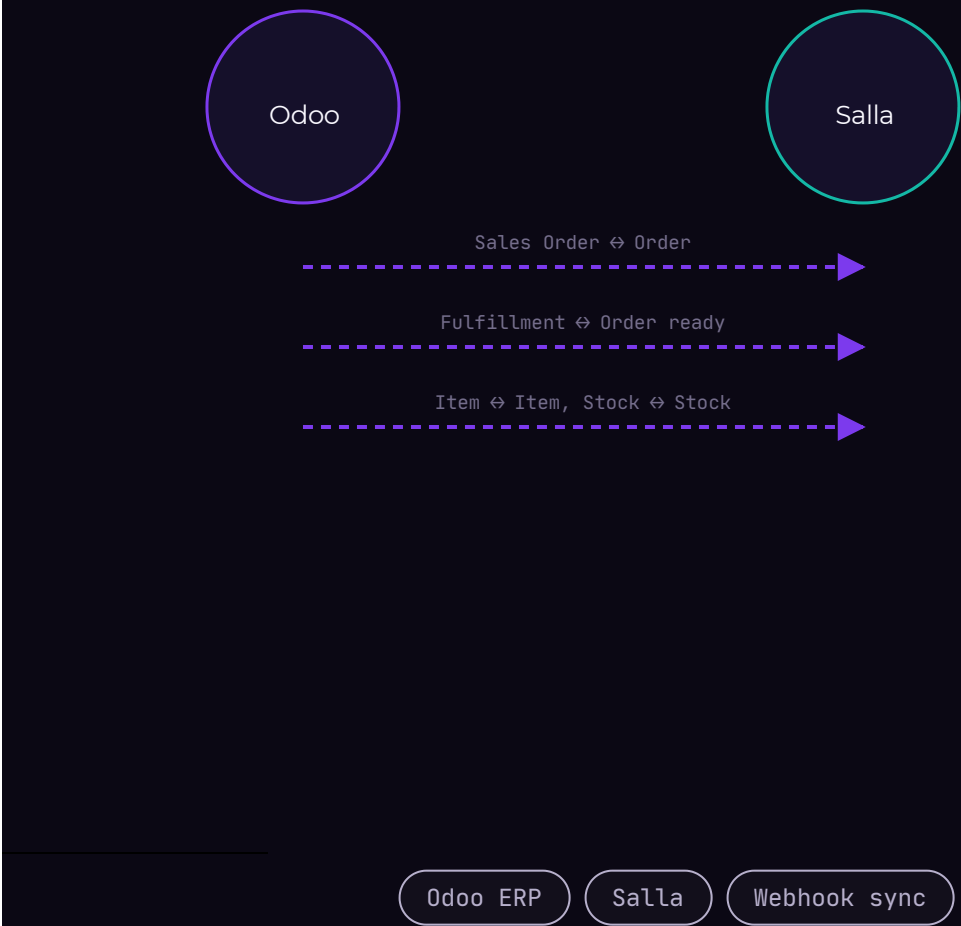
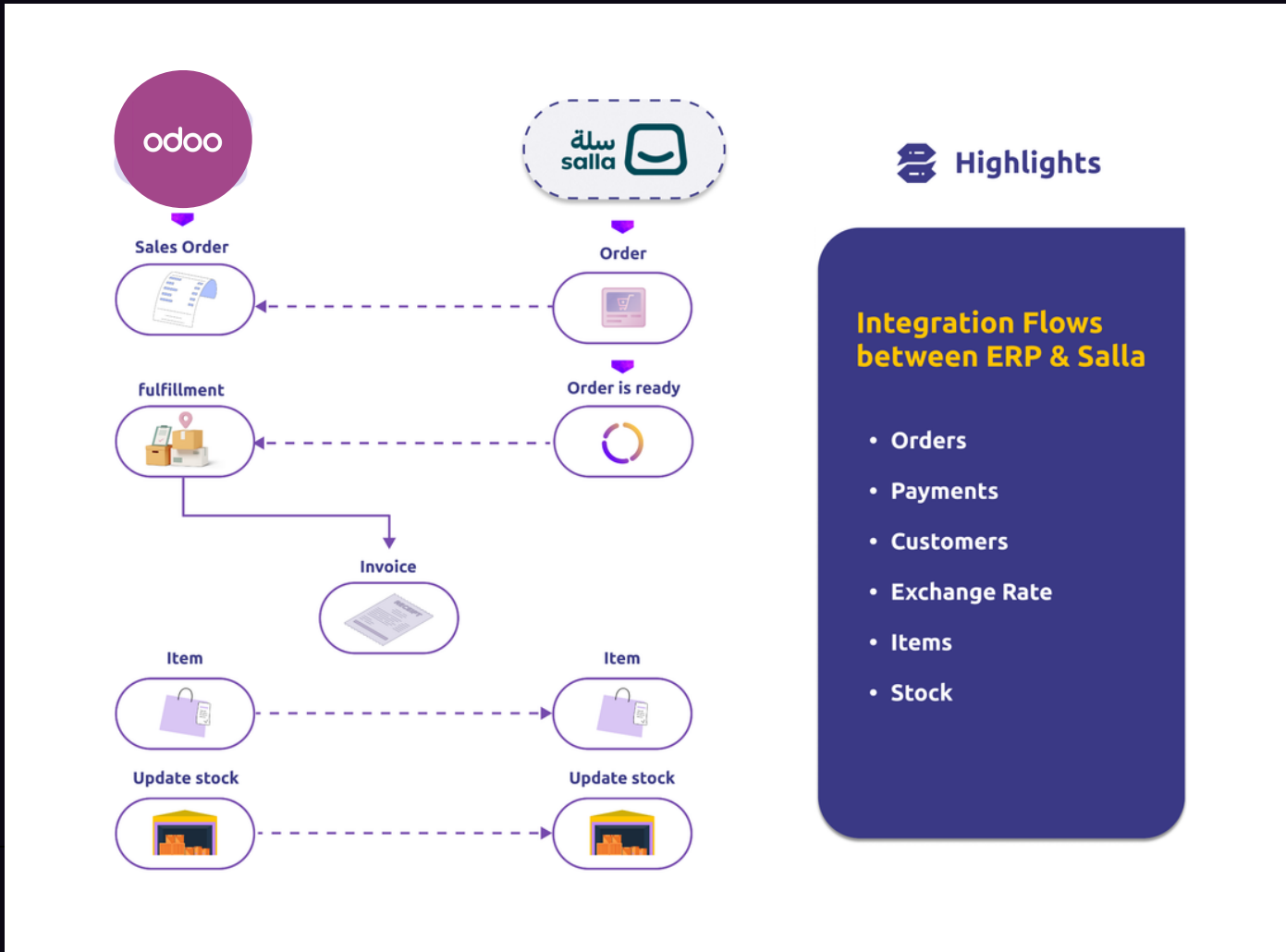
One API to support all e-invoicing requirements

Flexibility to connect with various ERPS

Ensure 100% compliance

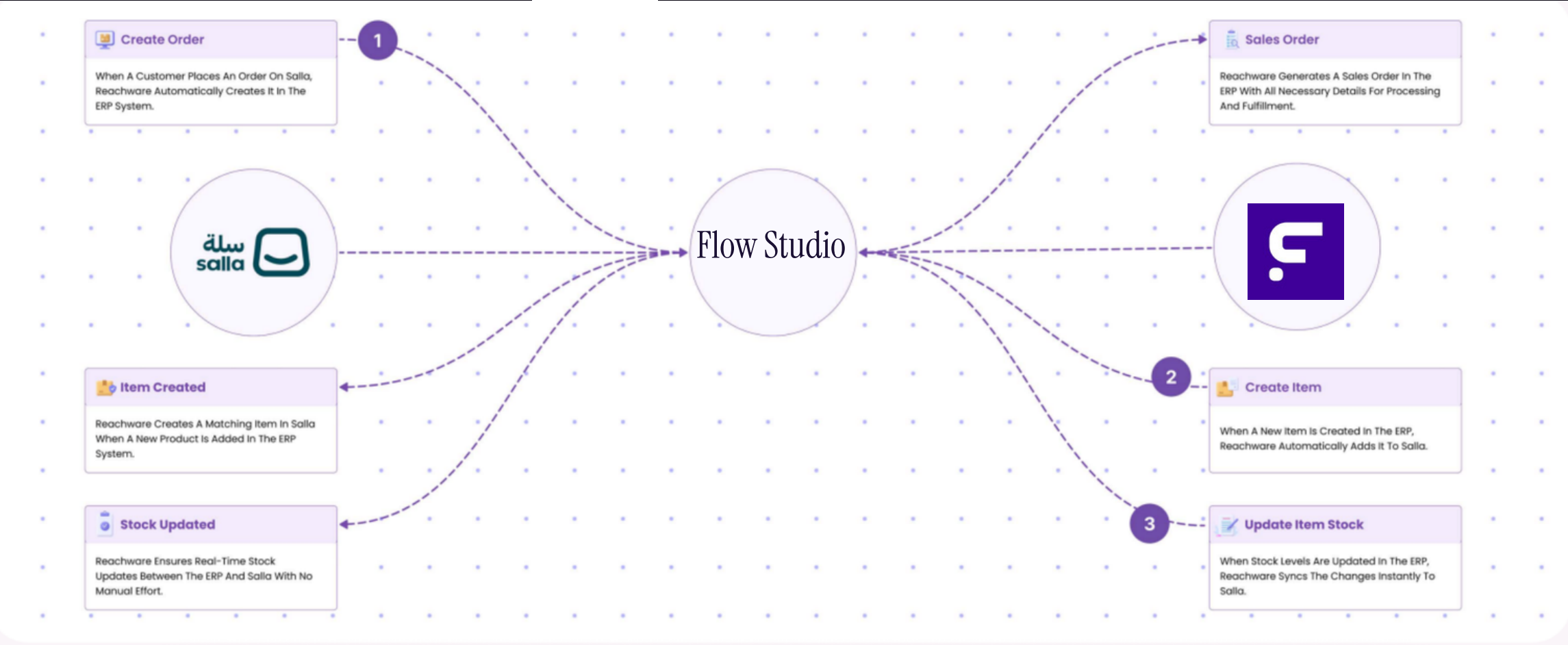
E-Commerce Integration — Salla × Odoo

Integrating Salla with Odoo ERP for syncing purchase orders, sales, and inventory in both directions.



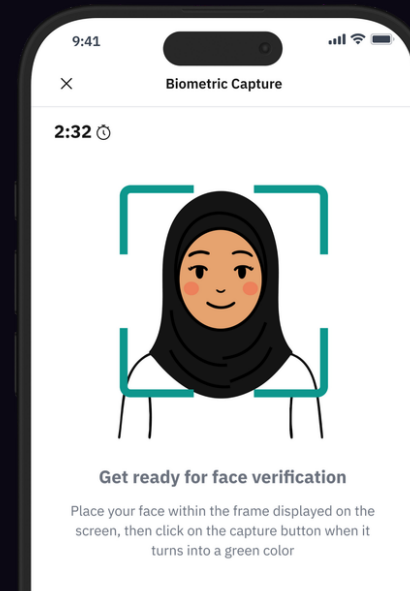
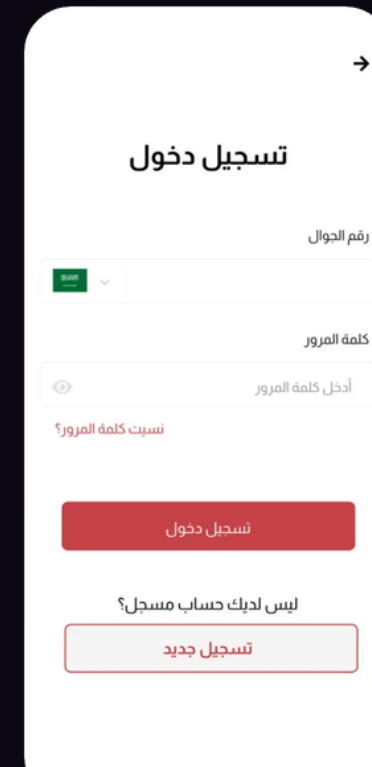
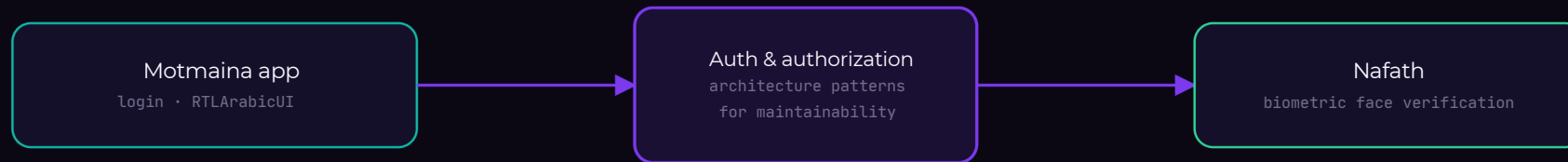
Warehouse Integration Case Study

Integrating Salla with Foodics POS for real-time inventory sync— flow studio sits as the middleware between the store front and the ERP.



Integration With Nafath

Integrated the national Nafath identity app with the Motmaina app for authentication and authorization



I'VE WORKED WITH

Employers, ventures, and where it started.



Entropy
EMPLOYER



Thmanyah
EMPLOYER



Motmaina
EMPLOYER



Reachware
EMPLOYER

EDUCATION



Jazan University
EDUCATION

2026

Contact.

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