Agentic Coding in a Real-Life Data Platform Migration

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Kenneth M. Kelly

Migrating from an on-premises data platform to a modern cloud architecture using **Agentic Coding** to align on logic faster, reduce manual review work, and work in parallel without losing consistency.

Data Engineering | Agentic Coding | Fabric | dbt

Tuesday, 2 Jun 2026

11:00 AM – 11:45 AM

Ellehammer I

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Have you ever opened a legacy SQL file and thought what does this actually do?

800 LINES. NO COMMENTS. NO DOCUMENTATION.
NO ONE LEFT TO ASK..

1

The business logic isn't documented anywhere.

IT LIVES IN THE HEAD OF ONE PERSON.
WHO LEFT THE PROJECT SIX MONTHS AGO.

2

The plan said three months. You're in month seven.

SCOPE HASN'T CHANGED.
YOU WERE JUST A LITTLE OPTIMISTIC.

3

What people expect

It's **mostly a technical exercise** — just moving existing logic from one system to another

A clear scope and timeline with tables counted, transformations mapped, and a go-live date set

A defined finish line where the pipelines run green and the project is declared done



A clear scope and timeline with tables counted, transformations mapped, and a go-live date set

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What people expect



What actually takes time

Inconsistent naming standards where concepts have different names across systems, departments, and layers

Undocumented business logic and rules that were never written down

A moving target as the ERP changes underway in the migration

Stakeholder alignment across different teams with different opinions

No tests in the legacy system and nobody knows what "correct" output looks like


ON-PREMISE DATA WAREHOUSE
CRITICAL
DATABASE CORRUPTED
CONNECTION FAILED
ETL JOBS FAILED
DISK SPACE 100%
MEMORY OVERFLOW
DATA INCONSISTENT
BACKUP FAILED
REPLICATION ERROR
ALERT
SYSTEM OVERLOAD
COBOL
LEGACY SYSTEMS
TERADATA
TECHNICAL DEBT
UNSUPPORTED
OUT OF SUPPORT SINCE 2014
DATA ARCHITECT
CLOUD DATA PLATFORM
SCALABLE | ELASTIC | RELIABLE
STORAGE
COMPUTE
ANALYTICS
AI / ML
YOU ARE NOT PREPARED
DATA DOESN'T MIGRATE ITSELF
SYSADMIN NOT A MIRACLE WORKER
SELECT * FROM fact_sales
WHERE date >= '2020-01-01'
AND region = 'NA'
ERROR:
ORA-12541: TNS:no listener
Process ID: 2754
Session ID: 555 Serial number: 9876
FIX ETL AGAIN
TARGET CLOUD ARCHITECTURE
WAP EVERYTHING
VERIFY and DOCUMENT!!!
MIGRATION DASHBOARD
DON'T DEPLOY !!!
OVERALL PROGRESS
99%
PIPELINES
01_Extract_legacy Failed
02_Transform Failed
03_Load_Staging Running
04_Validate Failed
05_Load_Cloud Stuck
06_Reconcile Pending
ERROR SUMMARY
Timeout 45%
Connection 28%
Data Quality 13%
Dependency 9%
Unknown 5%
DEPENDENCY TREE
LOG STREAM
ETL JOB FAILED
Exit Code: -1
Rows Read: 987,654,321
Rows Written: 0
Duration: 12:45:03
Error: Unexpected EOF
Stack Trace:
DATA ENGINEER
MIGRATION LEAD
DATA ANALYST
SRE ON-CALL FOREVER
Powered by Coffee & Anxiety
#data-migration
999+ new messages
@here Pipeline failed again
Can't connect to source
What changed?
It worked yesterday
Who touched this?
Rollback?
Check the logs
URGENT!!!
Need update!!!
Management is asking
...
TO DO:
Extract
Transform
Load
Validate
Pray
WILL FIX MONDAY

WHO ARE WE?



Elisabeth Falck

Data Scientist

Technical execution – building the agent setup and engineering the context.



Kenneth M. Kelly

Business Consultant

Project and business side – translating a complex migration into a structured execution

THE PROJECT

A full dataplatform migration
Every table, every transformation, every pipeline

On-prem SQL > Microsoft Fabric with dbt
A completely new tech stack, driven by a new ERP system

Zero impact to the Front-end
Every dashboard and report had to remain the same

Migrating to a moving target
The data source was being replaced from AX to F&O

The task at hand:

126
Source Tables

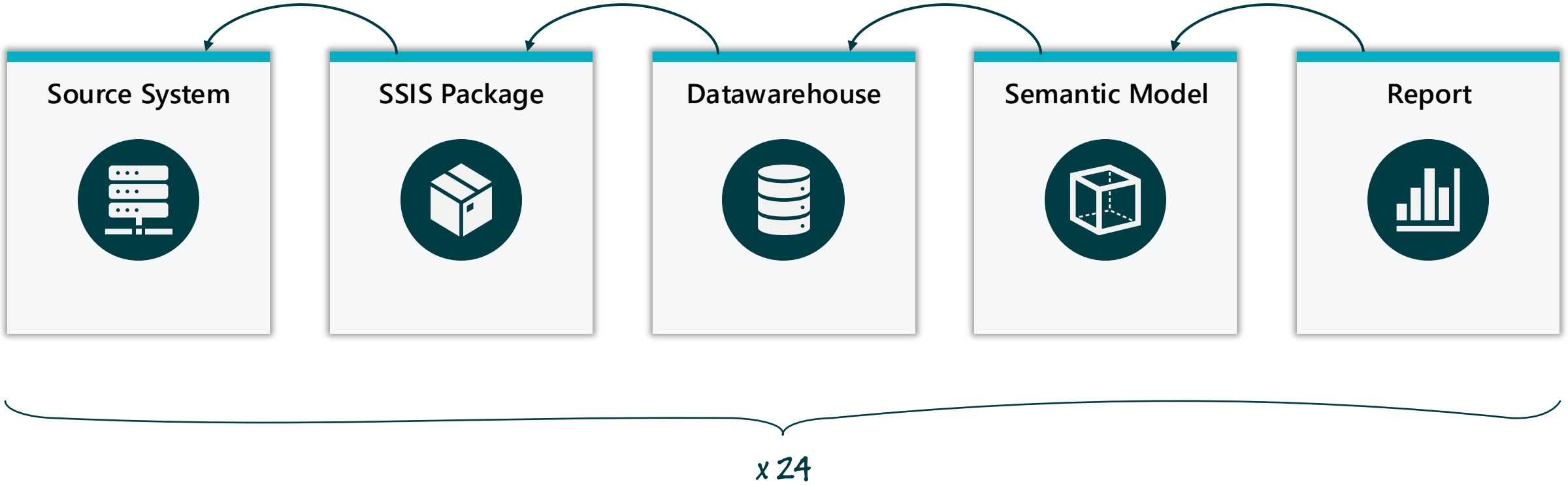
70
Dimensions & Facts

0
Pages of Documentation

10
Source Systems

24
Reports

Every report traced backwards
all the way to the source

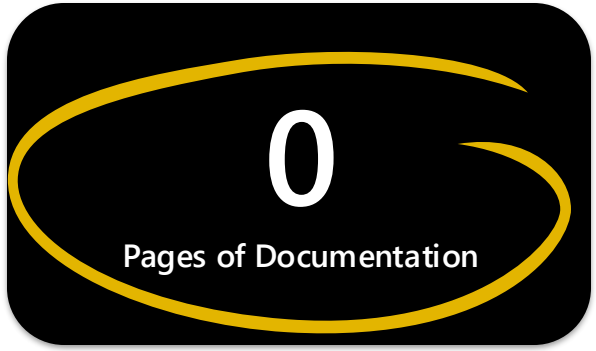


The task at hand:

~80 hours of detective work

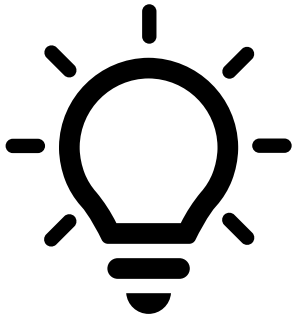
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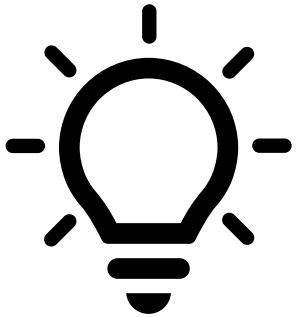


Could Agents help us during our Migration?

document legacy code?

compare transformations?

align naming conventions?



Could Agents help us do our Migration?

migrate the logic?

refactor the code?

generate unit tests?

What **started as an experiment** ended up being the way we **actually worked** during our migration.

What **started as an experiment** ended up being the way we **actually worked** ~~during our migration.~~

in our company

Adoption of Agentic Coding in Inspari

3–4×

Common gain

on suitable programming tasks

90%+

Adoption

among ~120 consultants

160

Autonomous use-cases

for Agentic Coding

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A QUICK QUESTION BEFORE WE DIVE IN

Where are you in your migration journey?

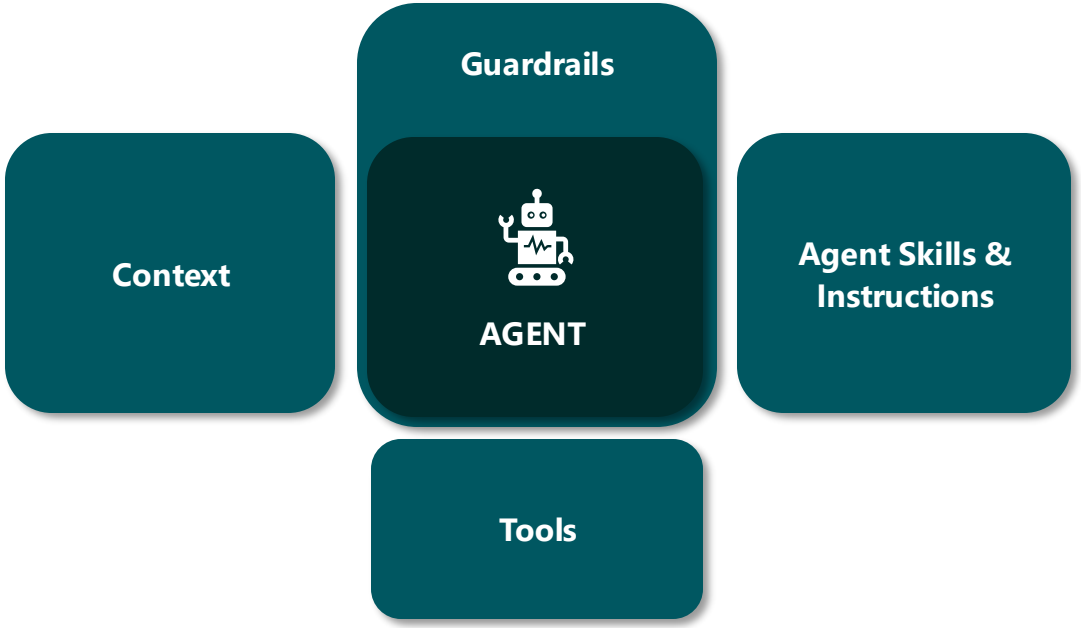
BEEN THERE

We’ve recently done a Migration

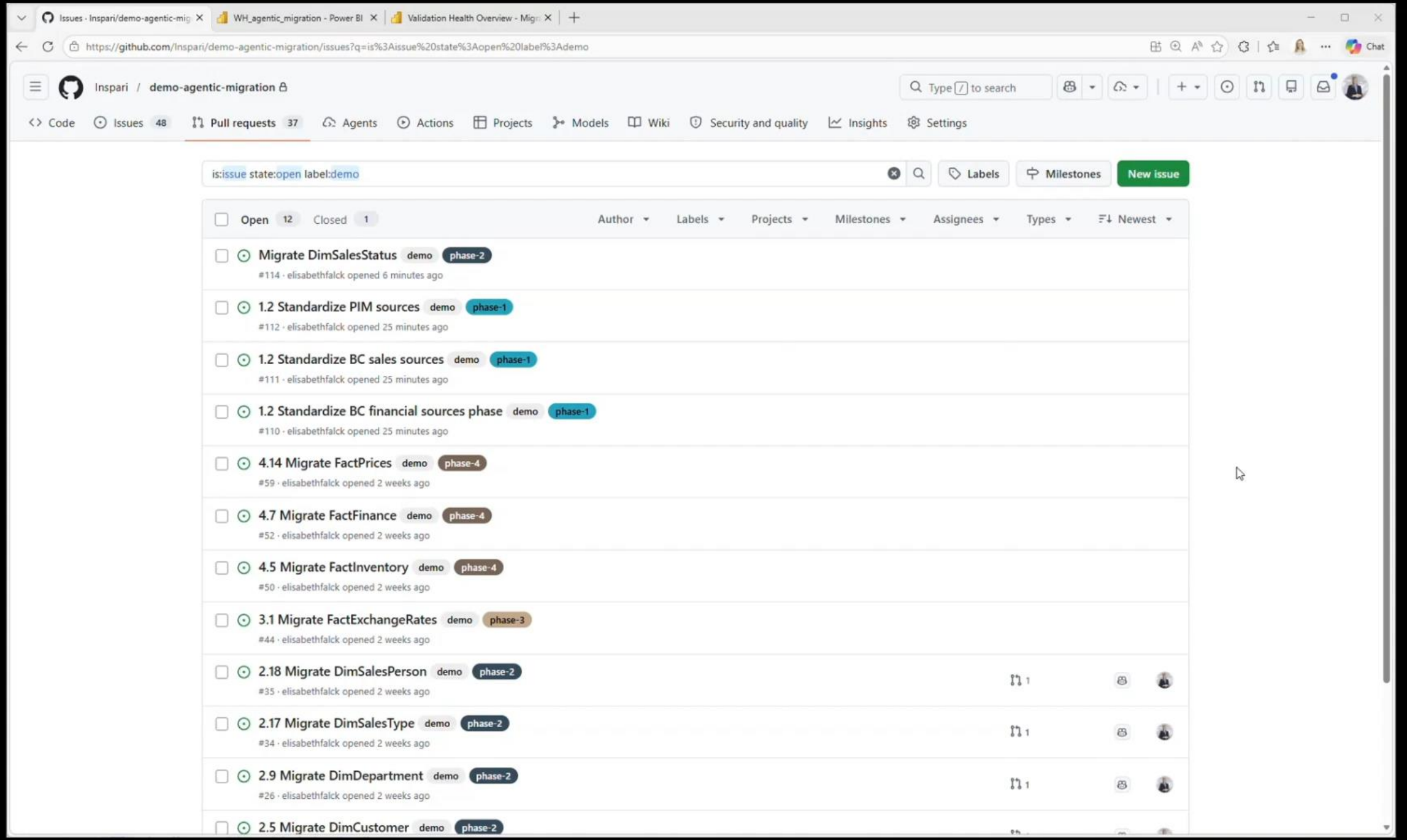
COMING UP

We’re doing or planning a Migration

Let’s start at the end



Live demo time! 


Issues · Inspari/demo-agentic-mig
WH_agentic_migration - Power BI
Validation Health Overview - Migr
https://github.com/Inspari/demo-agentic-migration/issues?q=is%3Aissue%20state%3Aopen%20label%3Ademo
Chat
Inspari / demo-agentic-migration
Type / to search
Code
Issues 48
Pull requests 37
Agents
Actions
Projects
Models
Wiki
Security and quality
Insights
Settings
is:issue state:open label:demo
Labels
Milestones
New issue
Open 12
Closed 1
Author
Labels
Projects
Milestones
Assignees
Types
Newest
Migrate DimSalesStatus demo phase-2
#114 · elisabethfalck opened 6 minutes ago
1.2 Standardize PIM sources demo phase-1
#112 · elisabethfalck opened 25 minutes ago
1.2 Standardize BC sales sources demo phase-1
#111 · elisabethfalck opened 25 minutes ago
1.2 Standardize BC financial sources phase demo phase-1
#110 · elisabethfalck opened 25 minutes ago
4.14 Migrate FactPrices demo phase-4
#59 · elisabethfalck opened 2 weeks ago
4.7 Migrate FactFinance demo phase-4
#52 · elisabethfalck opened 2 weeks ago
4.5 Migrate FactInventory demo phase-4
#50 · elisabethfalck opened 2 weeks ago
3.1 Migrate FactExchangeRates demo phase-3
#44 · elisabethfalck opened 2 weeks ago
2.18 Migrate DimSalesPerson demo phase-2
#35 · elisabethfalck opened 2 weeks ago
2.17 Migrate DimSalesType demo phase-2
#34 · elisabethfalck opened 2 weeks ago
2.9 Migrate DimDepartment demo phase-2
#26 · elisabethfalck opened 2 weeks ago
2.5 Migrate DimCustomer demo phase-2

How to do an **Agentic Migration**

01

Structure the Knowledge

Everything the Agents need, written down and structured.

02

Configure the Agents

Guardrails, skills, and tools configured for the work.

03

Execute the Migration

Agents do the work, humans review the output.

So, basically…

01

Make Smart Plan

02

Make Smart Agents

03

Give Smart Agents Smart Plan

01 **Make Smart Plan**

Making a **smart plan** for Agents to work with

What are we migrating?

A precise data profiling for the scope of the Migration.

- Reports, data models, workspaces
- Tables, objects, transformations
- Source tables, fields, systems

How are we migrating?

The decided Migration approach for the project.

- Lift n' shift
- Refactoring
- Greenfielding

In what order?

Mapping of dependencies to define the sequence of work.

- Dependency Plan
- Data Lineage

To which target?

The structure that Agents must match in the destination.

- Naming convention
- Data Architecture
- Coding Standards

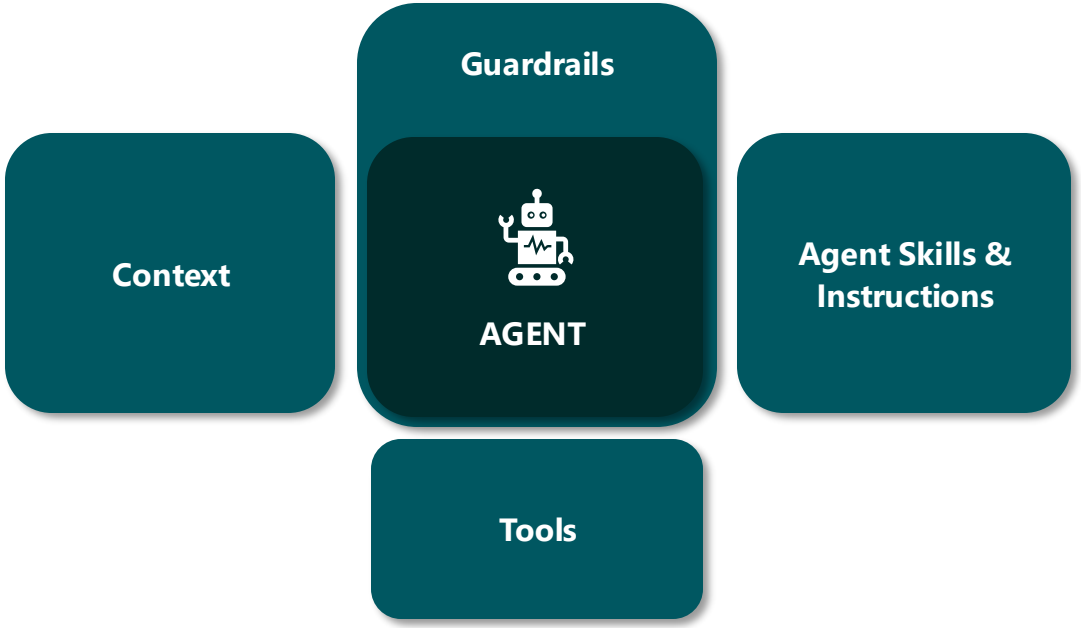
Output Structured Context

A written artefact for the scoping, tailored specifically for an Agentic Migration.

- Markdown context files
- Technical files on schema, transformation, standards
- Specification on migration plan and sequence of work.

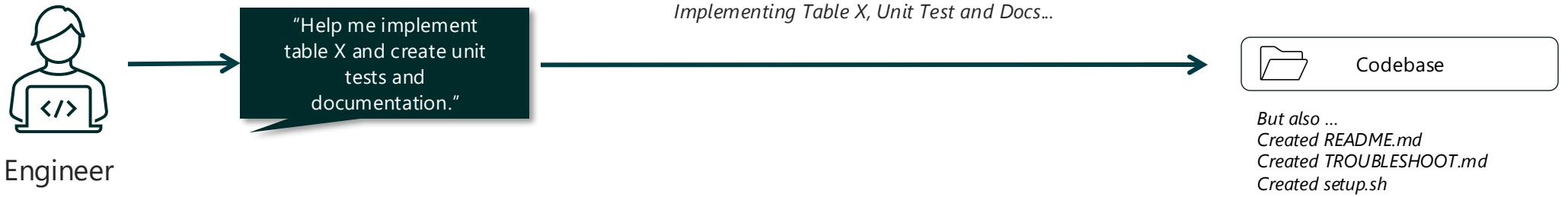
Rule of thumb: *More explicit, more structured, more written down*

Make Smart Agents

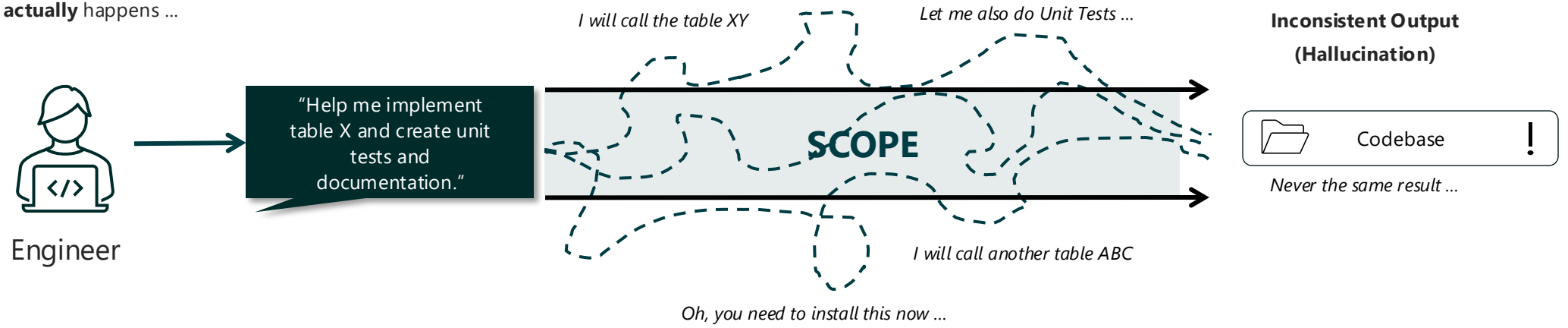


How Agentic Coding works without proper control

What we **hope** an agent does...



What **actually** happens ...



Context Engineering

Gather all relevant context from both sides of the migration so Agents operate with full awareness.



Tool Configuration

Configure database connectivity for the agents to read data for validation.



Read legacy

Inspect source objects, run queries, sample data

Validate target

Query migrated objects, confirm parity with source

Agent Skills

A small number of powerful, focused skills. Each points at the right context & tools.

Migration Agent Skill

Analyzes legacy logic and rewrites.

- Built-in naming standards
- Built-in coding practices
- Handles the heavy lifting end-to-end

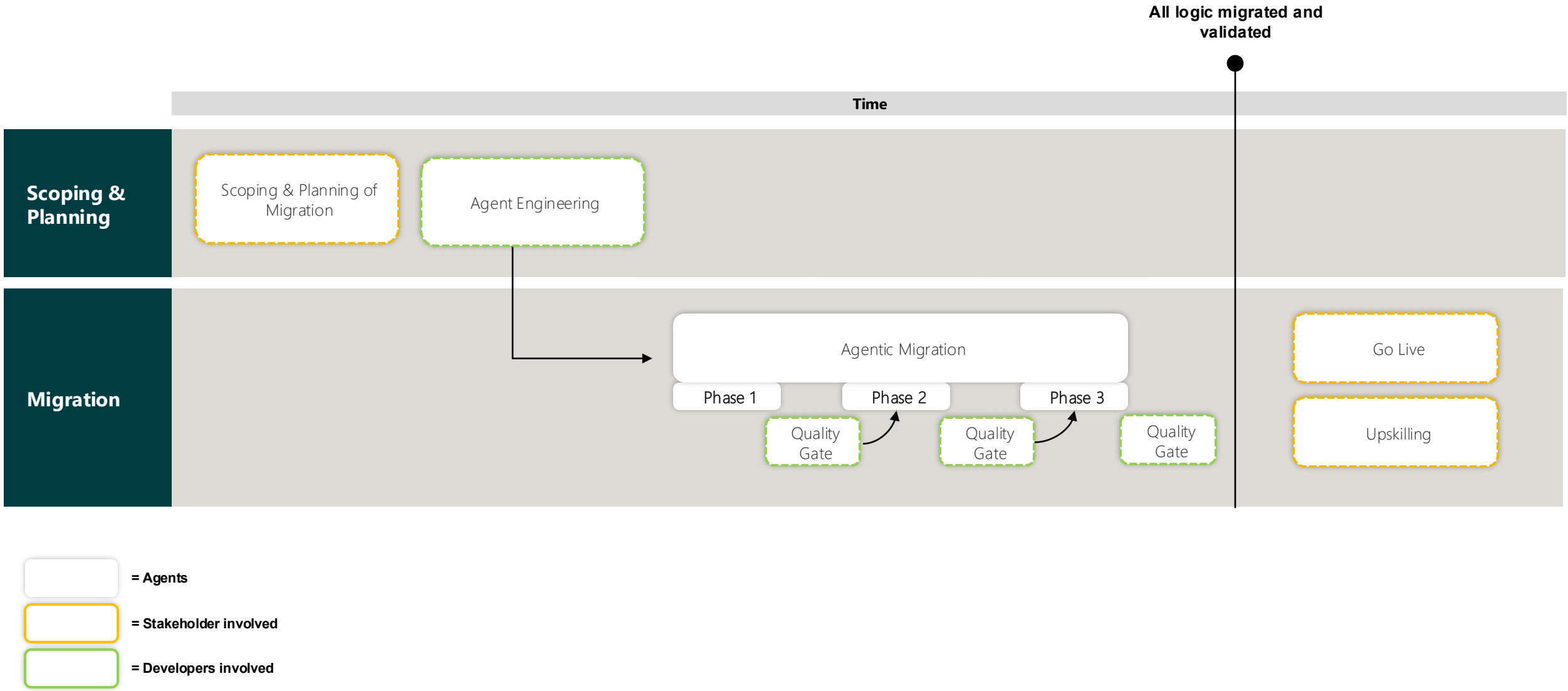
Validation Agent Skill

Compares legacy and migrated data to confirm integrity.

- Row counts match
- Null-value distributions align
- Spot-check key value lookups

Migration Plan

High-level plan of Migration Process



= Agents

= Stakeholder involved

= Developers involved

03 Give Smart Agents the Smart Plan

Phase 1

Agents build objects with no dependencies, e.g. sources and base objects.

Quality Gate

Phase 2

Agents build objects depending only on Phase 1, e.g. dimensions and lookups.

Quality Gate

Phase 3

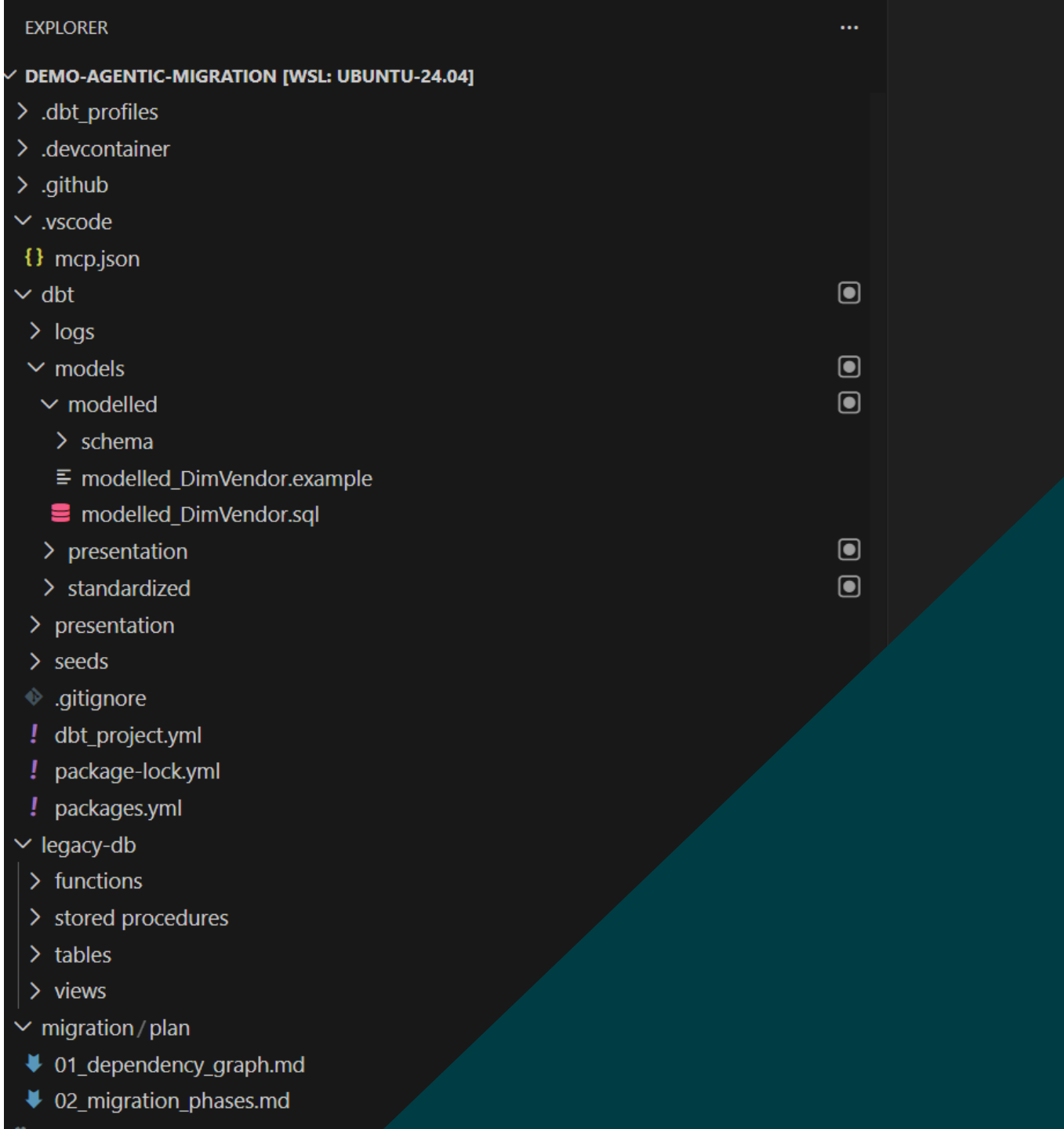
Agents build objects depending on Phases 1 and 2, e.g. facts and core business logic.

Quality Gate

Human-in-the-loop to keep agents on track

Let's dive

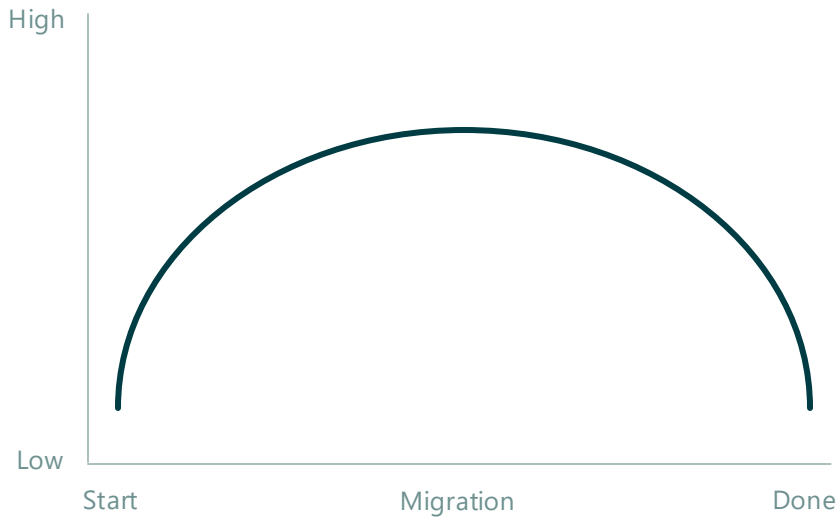
Under the hood of an **Agentic Migration**.



What **changes** using Agents?

How effort is distributed across a migration project

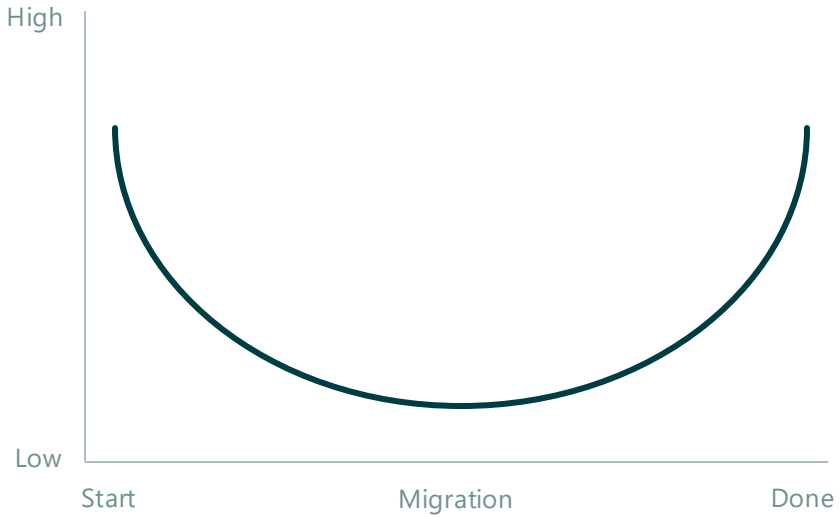
Without Agents



Majority of time spent on

- Moving code from A to B
- Refactoring code
- Manually checking output matches legacy
- Writing documentation nobody asked for

With Agents



Majority of time spent on

- Scoping and designing solution
- Use-case definition
- Anchoring end-user adoption
- Improving and iterating on solution

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What **does <u>not</u> change?**

Agentic Coding

Same foundation

GOVERNANCE
Human Ownership | Accountability | Documented Decisions

CODE PRACTICES
Version Control | CI/CD | Code Review | Coding Standards

SECURITY
Least Privilege Access | RBAC | Logging & Monitoring

INFRASTRUCTURE
Infrastructure as Code | Isolated Environments | Containerisation

What can **go wrong** in an **Agentic Migration?**

POOR SCOPING	Agents are only as good as the context you provide them with.
TOO MUCH FREEDOM	Agents without constraints will make decisions you didn't ask for.
WEAK RULES & INSTRUCTIONS	Agents with vague rules, instructions, and descriptions produce vague output.
?	



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HUMANS	Agents only ***attempt*** to do what we instruct them to.

POOR SCOPING Agents are only as good as the context you provide them with.

TOO MUCH FREEDOM Agents without constraints will make decisions you didn't ask for.

Agentic Migrations fail when the **surrounding structure is weak**

WEAK RULES & INSTRUCTIONS Agents with vague rules, instructions, and descriptions produce vague output.

HUMANS Agents only ***attempt*** to do what we instruct them to.

Q&A Time

Ask us any questions!



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Reflection

Can we expect data engineers to suddenly become prompt engineers, reviewers, and orchestrators?

Data Engineering ≠ **Agentic Engineering**

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Please leave us with your **feedback!**



Agentic Coding in a Real-Life Data Platform Migration

Any questions after today?

Feel free to connect!



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