

ZEN

Technical Overview
Team 11-B



ARCHITECTURE



Data Collection

Landing Zone

Exploitation Zone

Formatted Zone

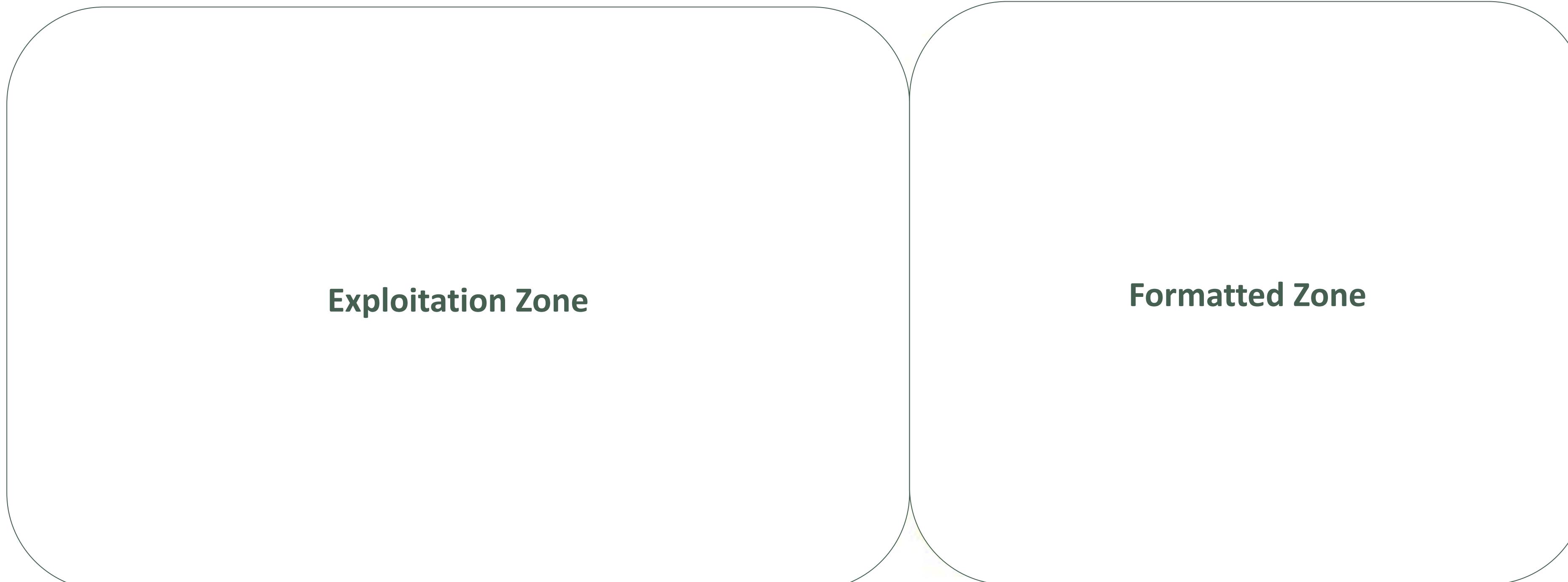
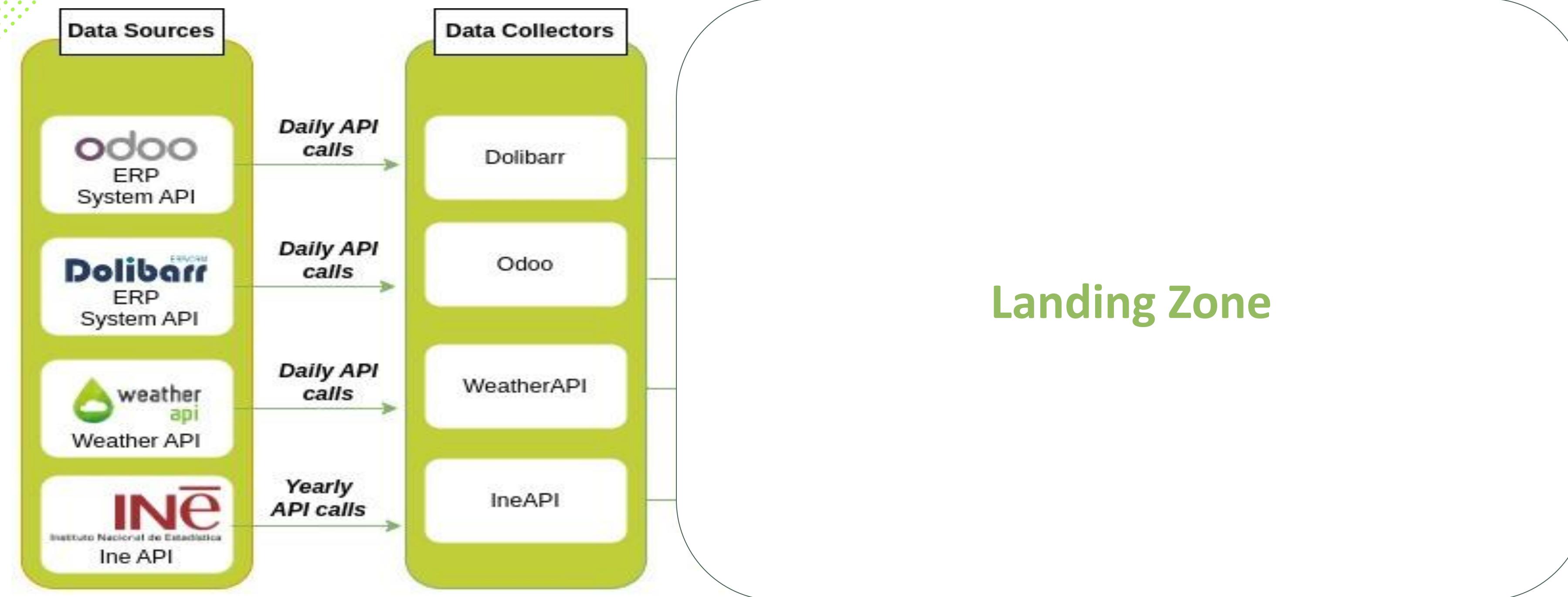


Data Collection

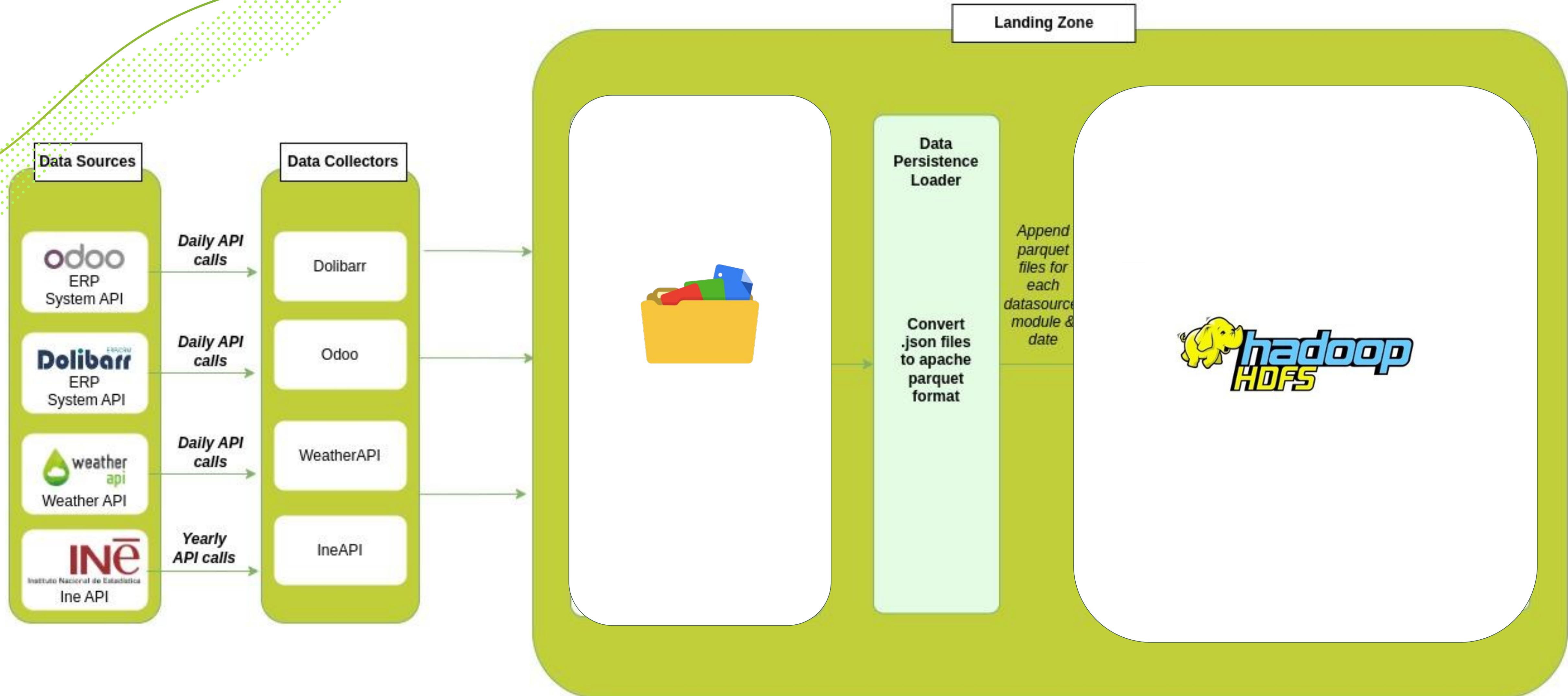
Landing Zone

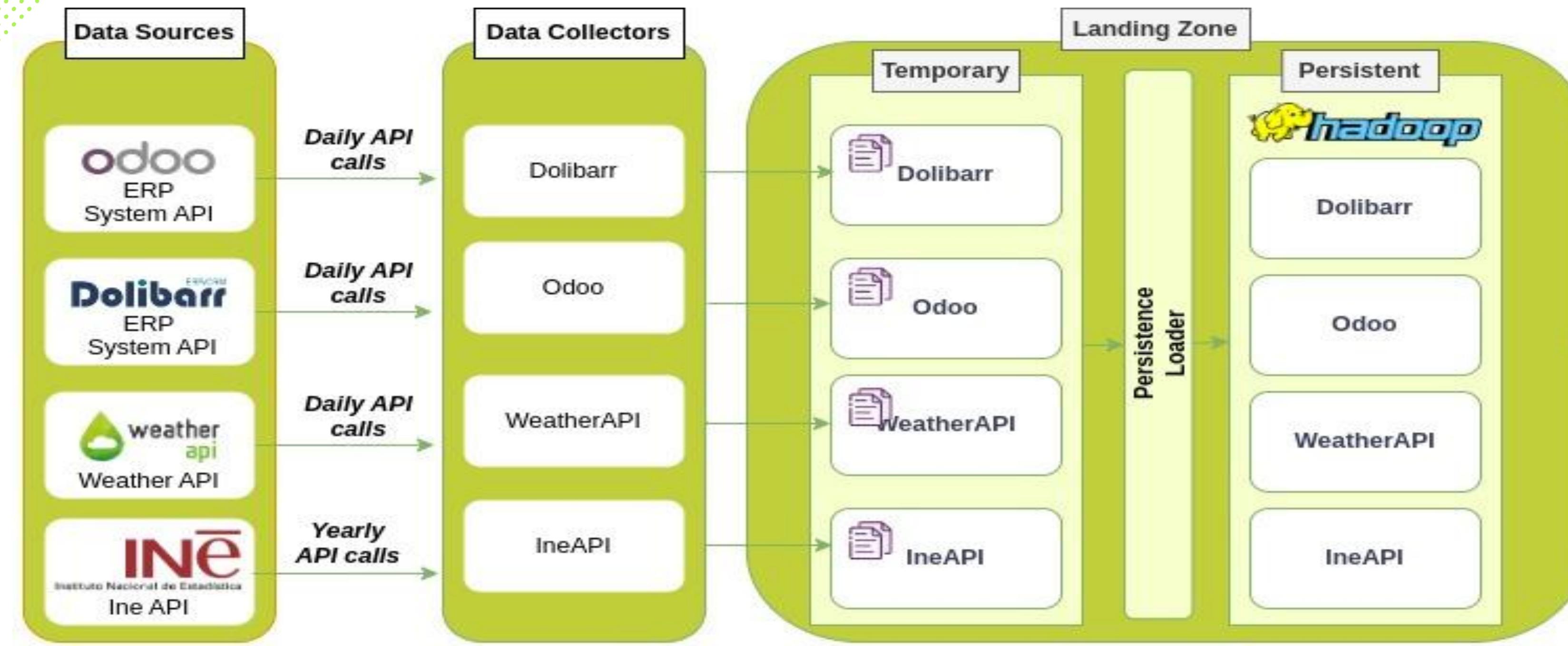
Exploitation Zone

Formatted Zone



LANDING ZONE



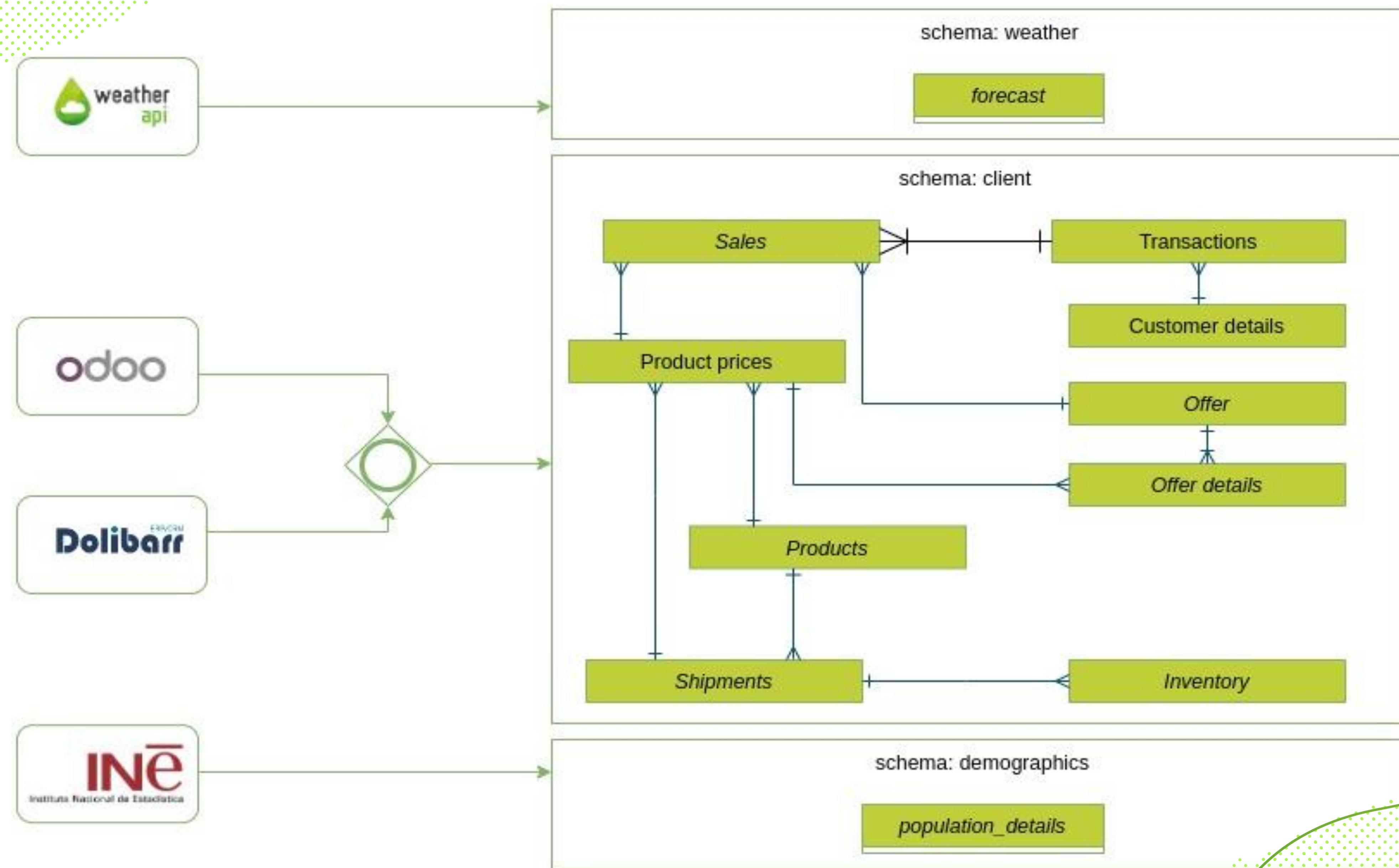


Exploitation Zone

Formatted Zone

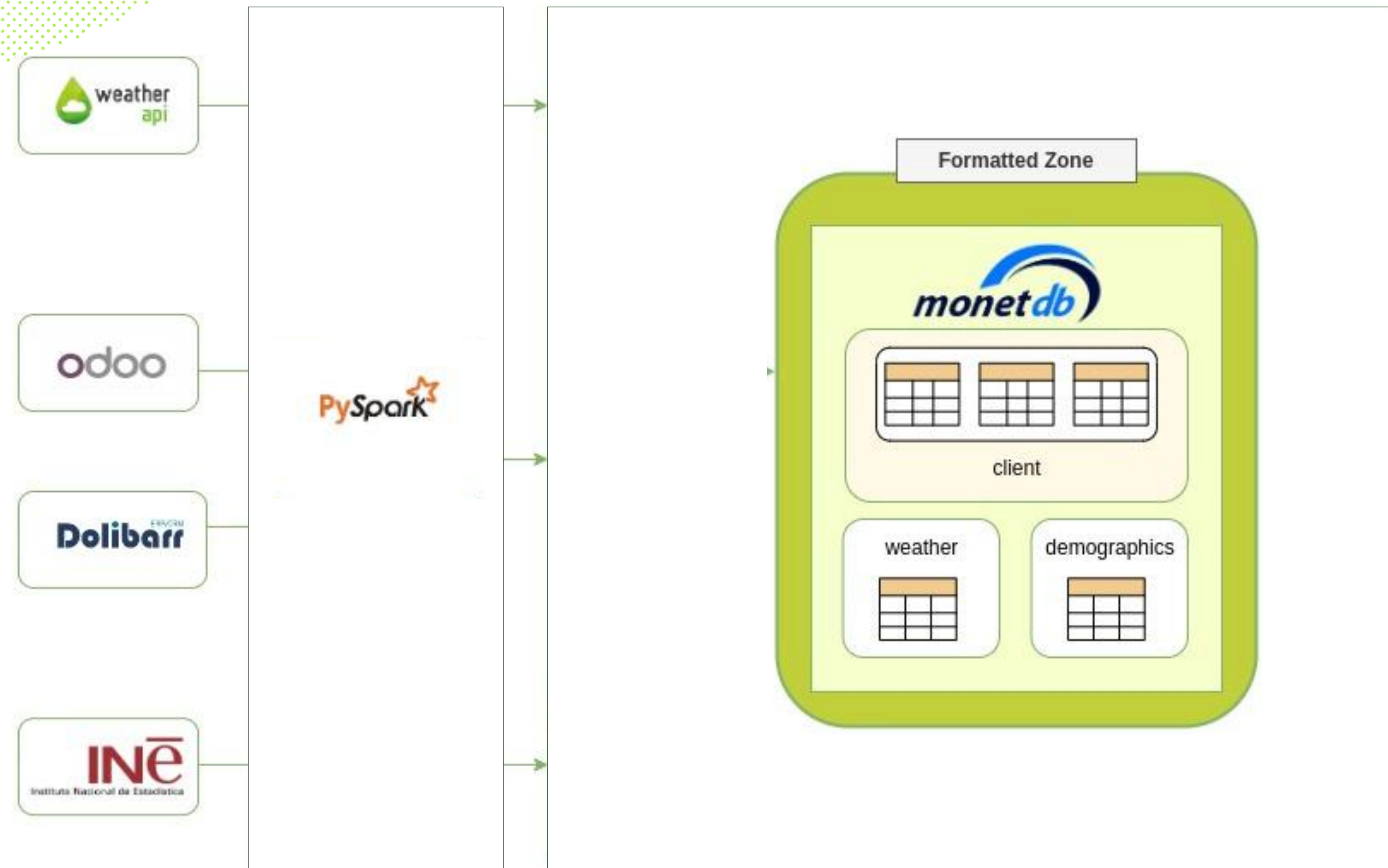
FORMATTED ZONE

8

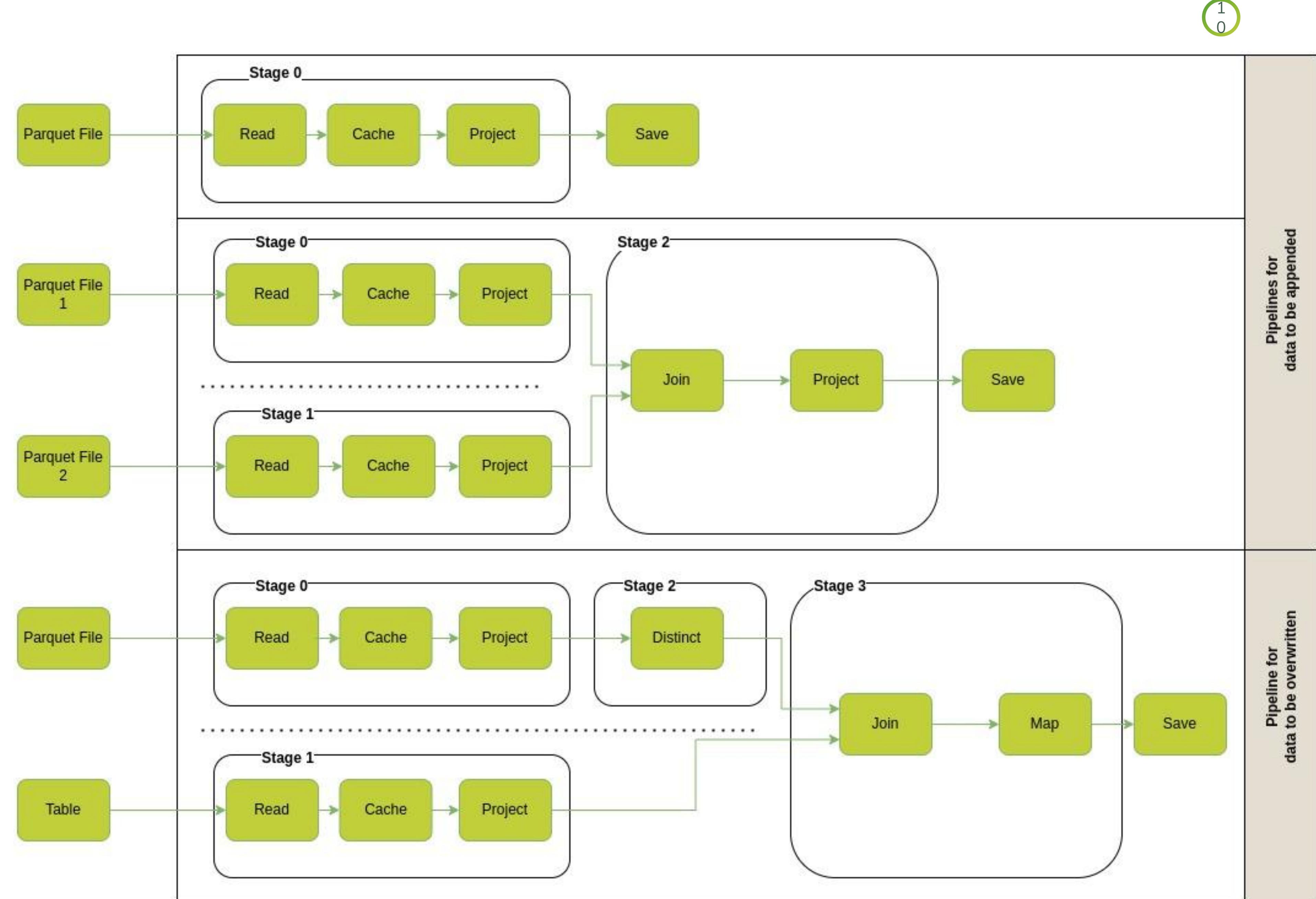


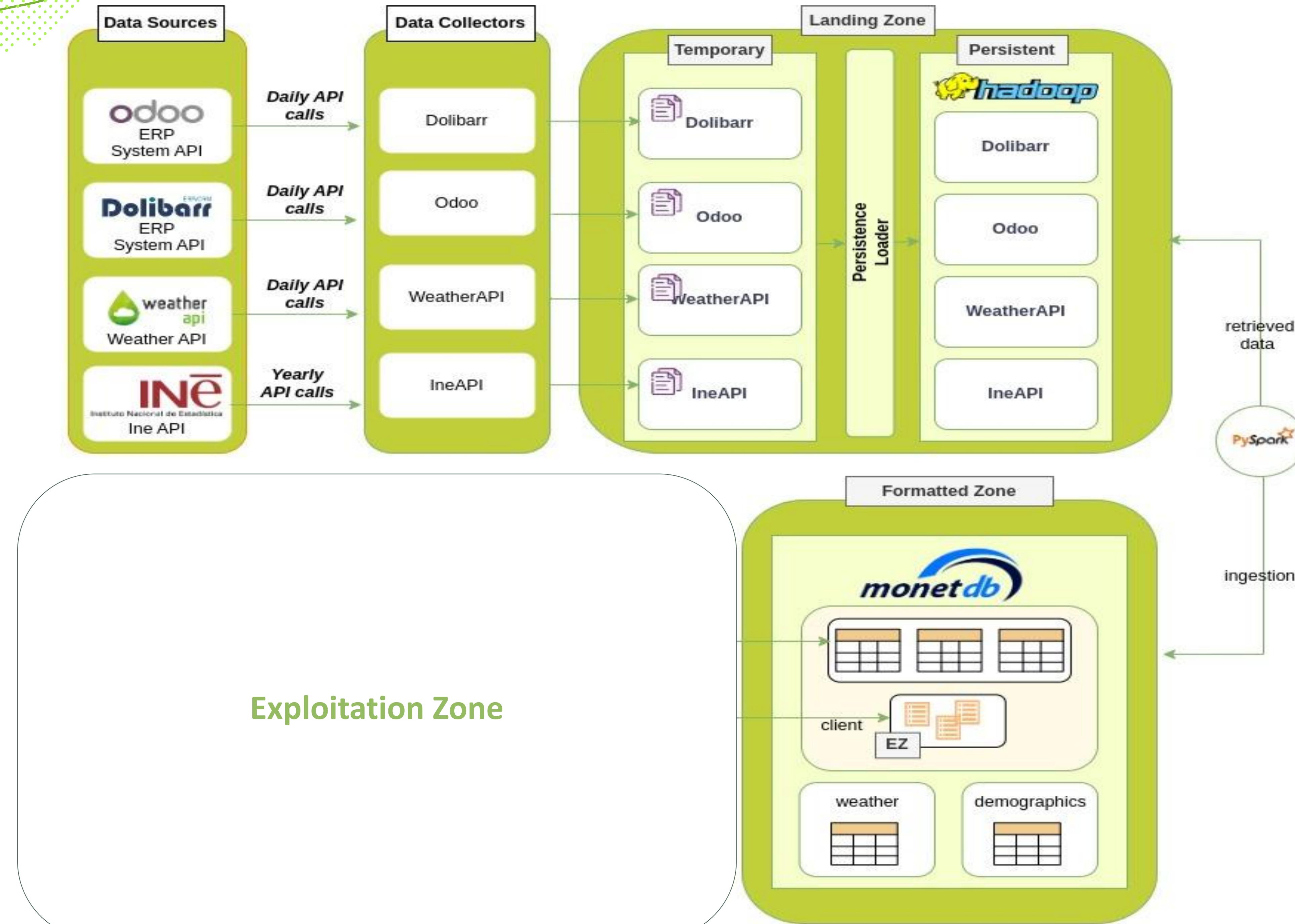
FORMATTED ZONE

9



LANDING ZONE TO FORMATTED ZONE





EXPLORATION ZONE

1
2

PREDICTIVE

Market Basket Analysis
with
Community Detection

Dynamic Pricing
with
Heuristics

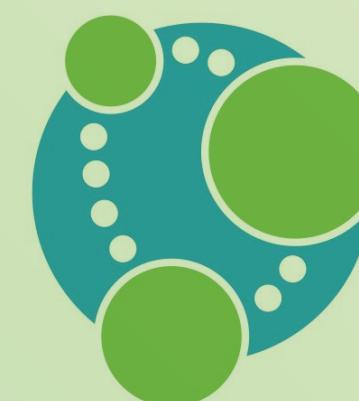
DESCRIPTIVE

KPI Dashboard
Provide an overview
of profit margin
improvements and
waste reduction

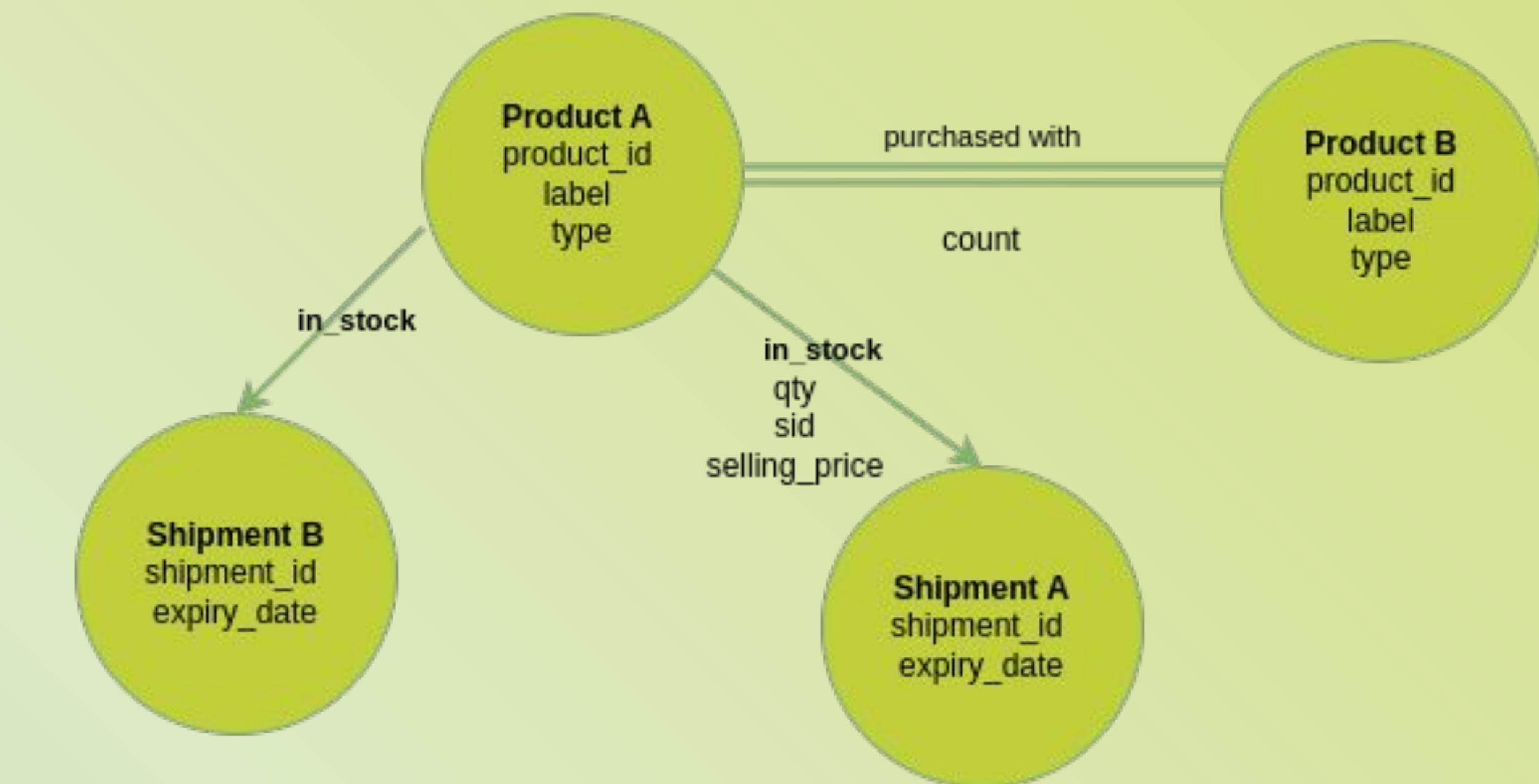
Operational Dashboard
Monitor price
movements that are
deduced by our
algorithm and tracking
the product
communities

GRAPH DATA MODEL

1
3



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MONETDB VIEWS

1
4



MonetDB Views

stock_waste

shipment_id
stock_in
expiry_date
product_id
product_label
product_type
shelf_life
original_qty
stock_wasted
proportion_wasted
selling_price
revenue_lost
branch_id

offers_sales

offer
sales

duration_to_expiry

shipment_id
product_id
product_label
expiry_date
qty_remaining
days_to_expiry
less_than_3days
less_than_1week
less_than_1month
more_than_1month

avg_shelf_life

product_type
avg_shelf_life

remaining_stock

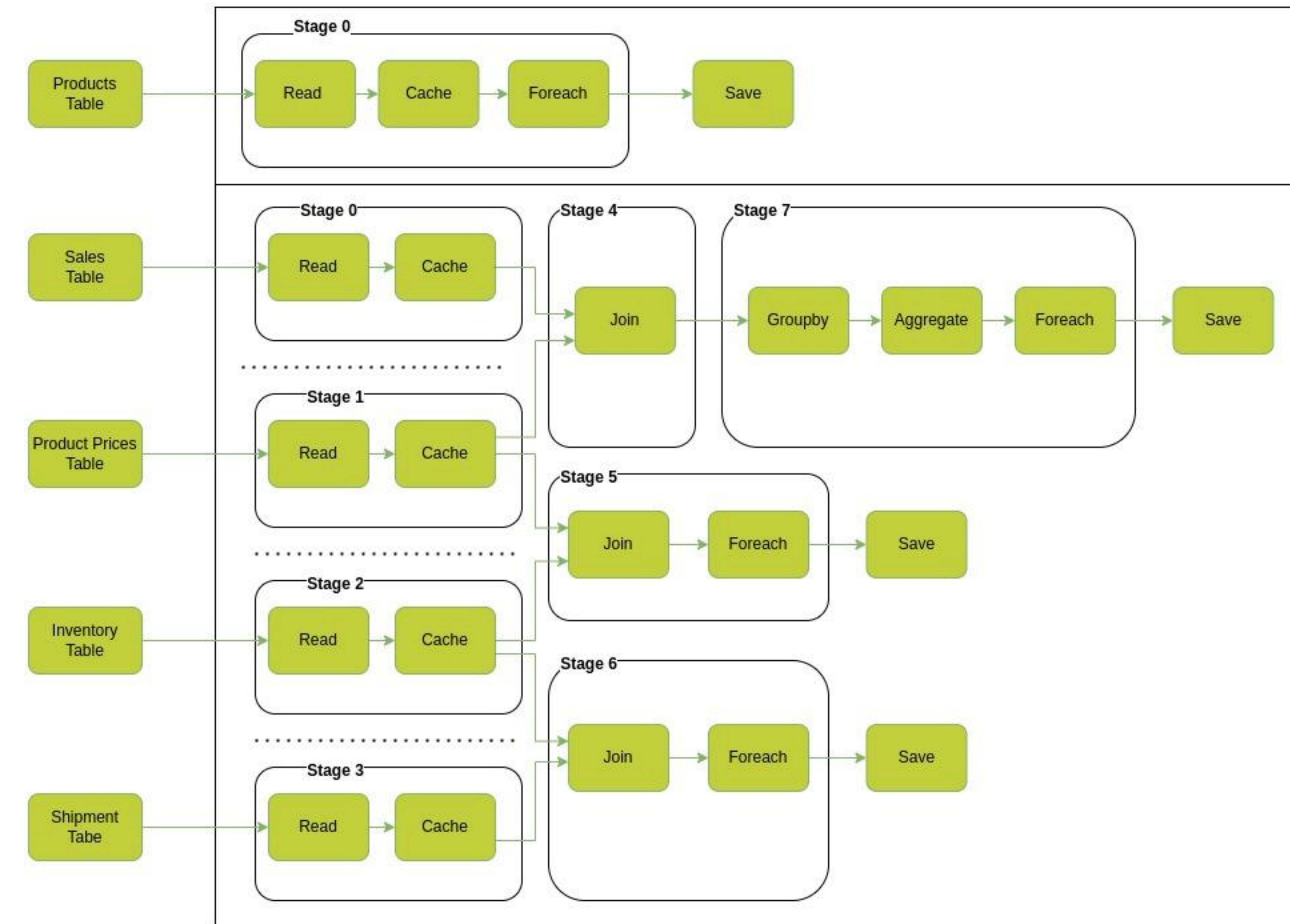
shipment_id
product_id
product_label
stock_remaining
branch_id

profits

type
month
revenue
total_rev
total_sales
profits
total_profits
prop_close_to_expiry
perishable
prop_sold
prop_wasted
prop_remaining
sales

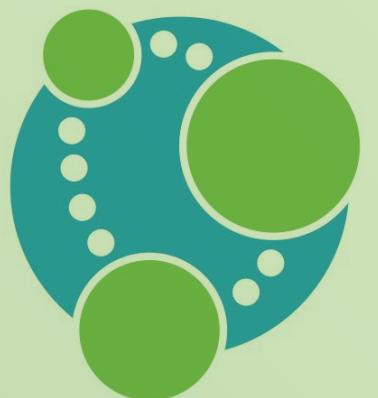
FORMATTED ZONE TO EXPLOITATION ZONE

PySpark

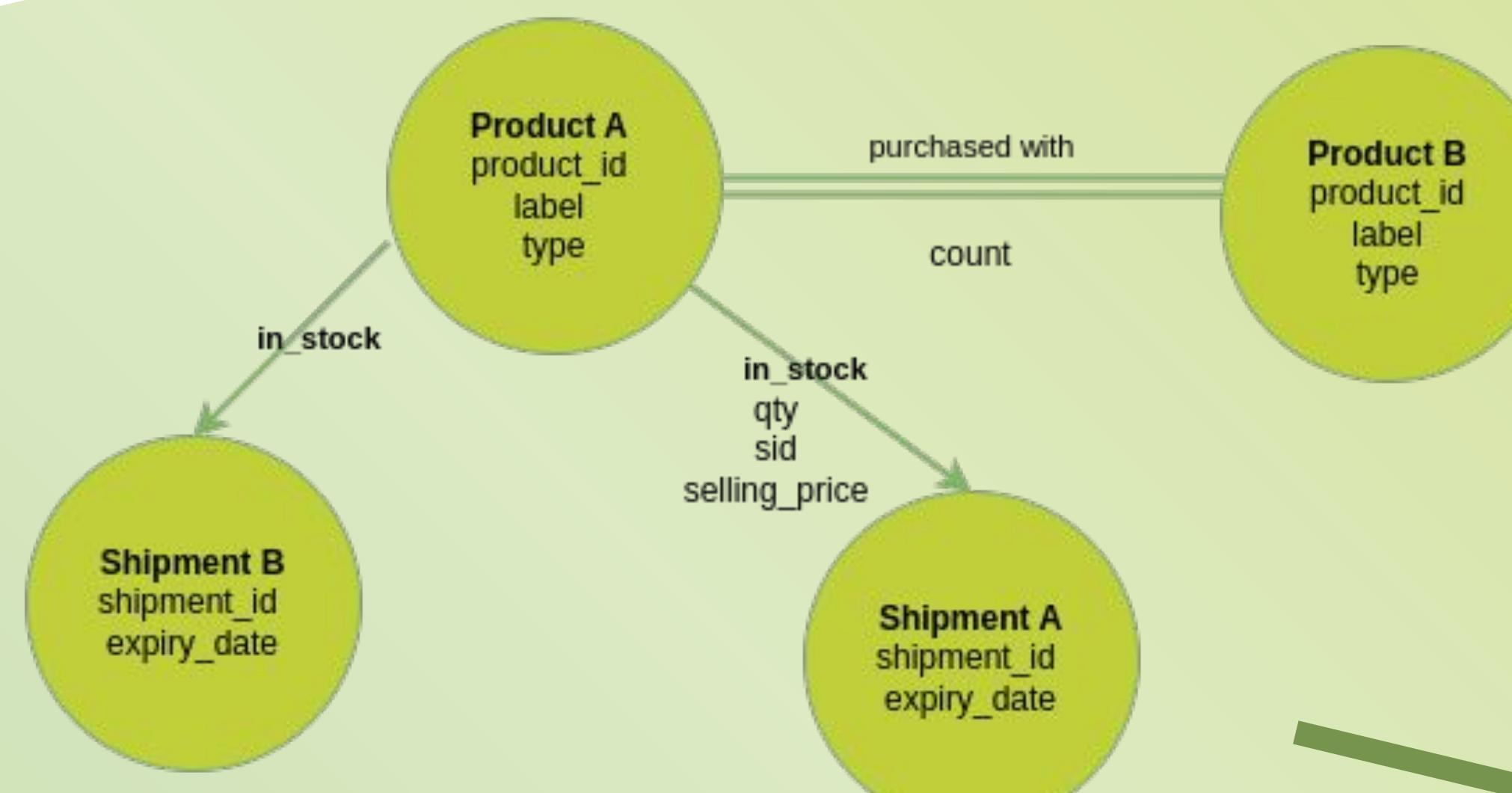


PREDICTIVE ANALYTICS

1
6



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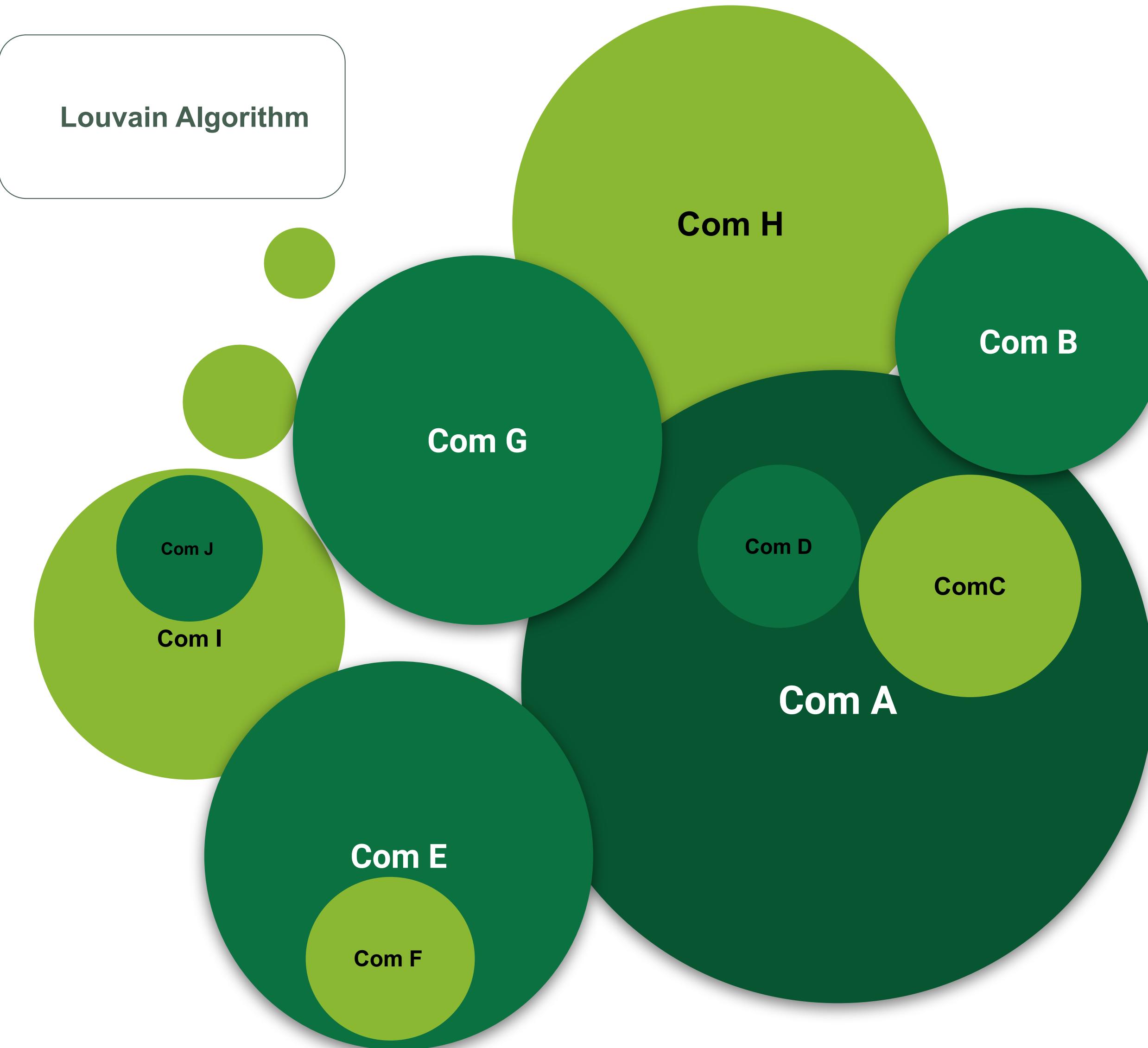
Community
Detection



Dynamic Pricing
with
Heuristics



MBA WITH COMMUNITY DETECTION

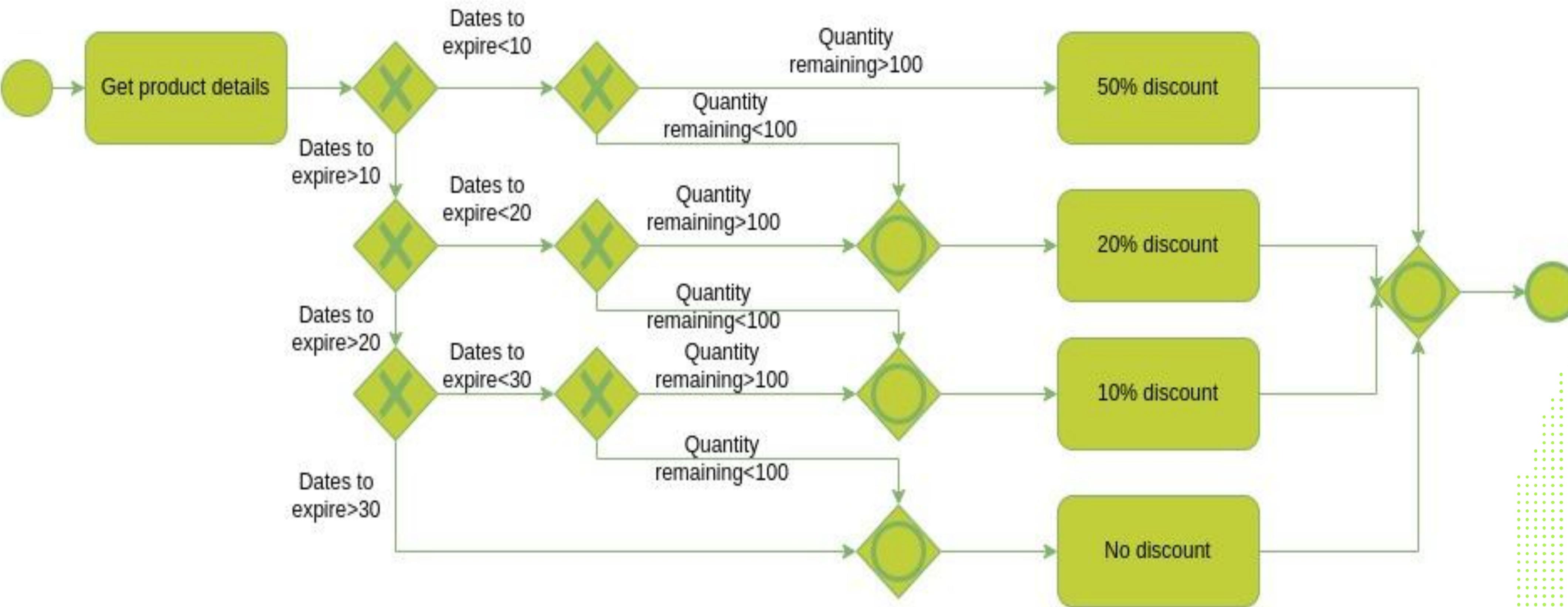


Louvain Algorithm

Hierarchical
Community Detection

Modularity Check
Algorithm

DYNAMIC PRICING HEURISTICS



DASHBOARD





Q&A