Requirements Analysis
Data Flow Diagram & User Stories

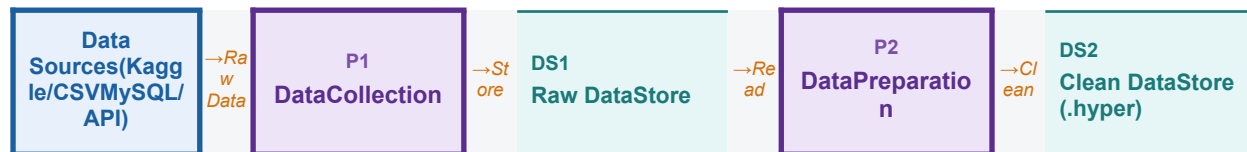| Date	15 February 2026
Team ID	LTVIP2026TMIDS74272
Project Name	Cosmetic Insights: Navigating Cosmetics Trends and consumer insights
Maximum Marks	4 Marks

Data Flow Diagrams:

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.
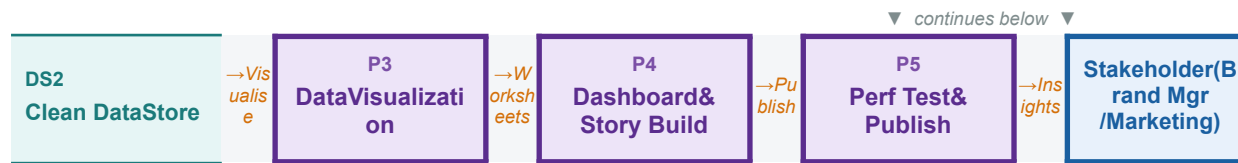
KEY — DFD Notation Legend

External Entity	Process	Data Store	Data Flow
Rectangle — blue	Rectangle — purple	Open rect — teal	→ Arrow — orange

1 — Level 1 — System Process Decomposition

Level 1 decomposes the system into 5 core processes. Data flows from raw sources → preparation → visualisation → dashboard → publish.
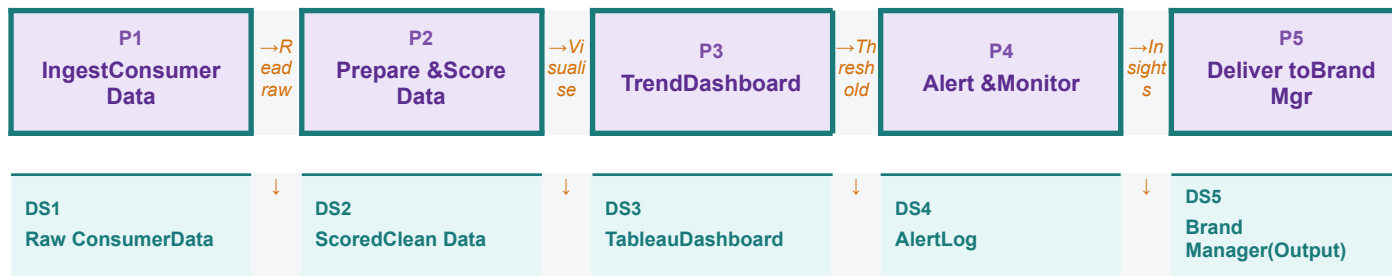
Data Sources(Kaggle/CSVMySQL/API) →Raw Data P1 DataCollection →Store DS1 Raw DataStore →Read P2 DataPreparation →Clean DS2 Clean DataStore (.hyper)

DS2 Clean DataStore	→Visualise	P3 DataVisualization	→Worksheets	P4 Dashboard& Story Build	→Publish	P5 Perf Test& Publish	→Insights	Stakeholder(Brand Mgr /Marketing)

Data Stores: DS1 Raw Store | DS2 Clean Extract (.hyper) | P3 Worksheets | P4 Dashboards/Stories | P5 Published URLs
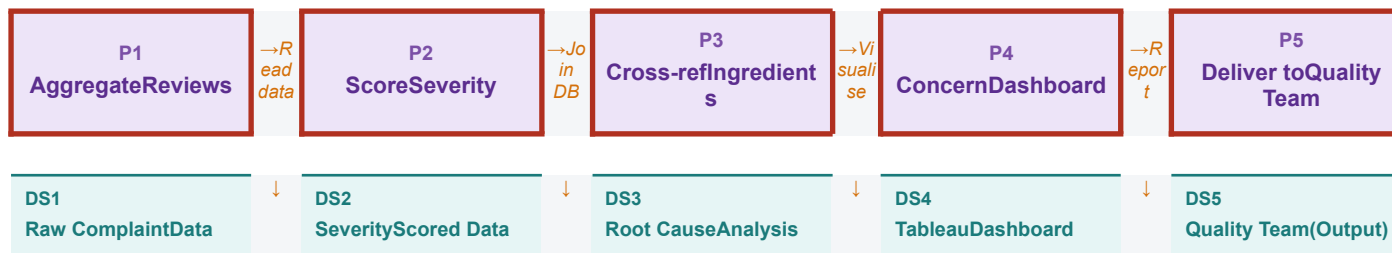
2a Level 2 — Scenario 1: Consumer Preference Monitoring

Data Flow: Consumer data → Collect → Prepare & Score → Monitor Alerts → Deliver Dashboard → Brand Manager

P1 IngestConsumer Data	→Read raw	P2 Prepare &Score Data	→Visualise	P3 TrendDashboard	→Threshold	P4 Alert &Monitor	→Insights	P5 Deliver toBrand Mgr

DS1 Raw ConsumerData	↓	DS2 ScoredClean Data	↓	DS3 TableauDashboard	↓	DS4 AlertLog	↓	DS5 Brand Manager(Output)

2b Level 2 — Scenario 2: Product Concern Management

Data Flow: Reviews/Complaints → Aggregate → Score Severity → Cross-reference Ingredients → Concern Dashboard → Quality Team

P1 AggregateReviews	→Read data	P2 ScoreSeverity	→Join DB	P3 Cross-refIngredients	→Visualise	P4 ConcernDashboard	→Report	P5 Deliver toQuality Team

DS1 Raw ComplaintData	↓	DS2 SeverityScored Data	↓	DS3 Root CauseAnalysis	↓	DS4 TableauDashboard	↓	DS5 Quality Team(Output)

Data Flow: Historical data → Load & Forecast → White-Space Map → Innovation Dashboard → R&D Team

P1 LoadHistorical Data	→Feed model	P2 Run ForecastModel	→Compute	P3 InnovationWhite-Space	→Visualise	P4 PredictiveDashboard	→Insights	P5 Deliver toR&D Team

DS1 HistoricalTrend Data	↓	DS2 ForecastOutput	↓	DS3 OpportunityGap Map	↓	DS4 TableauDashboard	↓	DS5 R&D Team(Output)

User Stories

Use the below template to list all the user stories for the product.

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Brand Manager	**FR-3 Consumer Monitoring**	USN-1	As a Brand Manager, I can view real-time trend dashboards by product category	*Dashboard loads <3 sec; declining items highlighted*	High	Sprint-1
		USN-2	As a Brand Manager, I receive an alert when interest drops >15%	*Alert sent within 1 hour of threshold breach*	High	Sprint-1
		USN-3	As a Brand Manager, I can filter by region, age group and skin type	*Filters update dashboard in <1.5 sec*	Medium	Sprint-2
	FR-7 Story & Reporting	USN-4	As a Brand Manager, I can view a Tableau Story walkthrough to present to stakeholders	*Story has 5+ points with captions; PDF export works*	Medium	Sprint-2
Data Analyst	**FR-1 Data Connection**	USN-5	As a Data Analyst, I can connect Tableau to Kaggle CSV and MySQL databases	*Row counts match source; all column types deleted correctly*	High	Sprint-1
	FR-2 Data Preparation	USN-6	As a Data Analyst, I can clean, rename and join tables using Tableau Prep Builder	*Zero nulls in key fields; joins validated; flow saved*	High	Sprint-1
		USN-7	As a Data Analyst, I can create calculated fields: sentiment score, trend velocity, price-rating ratio	*All 3 fields produce correct values on test data*	High	Sprint-1
	FR-5 Predictive Analytics	USN-8	As a Data Analyst, I can apply Tableau forecast to show 90-day product demand predictions	*Forecast visible with confidence bands; accuracy >80%*	High	Sprint-2

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Marketing Strategist	**FR-6 Dashboards**	USN-9	As a Marketing Strategist, I can use date range, category and region filters	*All filters functional; response time <1.5 sec*	High	Sprint-2
	FR-9 Web Integration	USN-10	As a Marketing Strategist, I can access dashboards via URL without installing Tableau	*Published URL works in Chrome, Edge, Firefox*	High	Sprint-3
Product / R&D	**FR-5 Predictive Analytics**	USN-11	As a Product Manager, I can view an innovation white-space heatmap of high-demand / low-supply gaps	*Heatmap loads; top 5 opportunities highlighted*	High	Sprint-3
		USN-12	As a Product Manager, I can see trend lifecycle stages (Emerging / Peak / Declining) per category	*All 4 stages visible; categories correctly classified*	Medium	Sprint-3
Quality Team	**FR-4 Product Concerns**	USN-13	As a Quality Manager, I can view a dashboard of complaints and safety issues by product	*All sources aggregated; severity scoring shown; PDF export works*	High	Sprint-2
		USN-14	As a Quality Manager, I can cross-reference complaints with ingredient data to find root causes	*Top 3 shared ingredients flagged across complaints*	High	Sprint-2
Administrator	**FR-9 Web Integration**	USN-15	As an Administrator, I can set role-based access: Viewer / Editor / Admin	*3 permission tiers tested with 3 different accounts*	High	Sprint-1
		USN-16	As an Administrator, I can schedule daily extract refreshes at 2AM with email alerts	*Refresh runs on schedule; email sent on success/failure*	High	Sprint-2