

Project Design Phase-II
Technology Stack (Architecture & Stack)

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| Date | 20 Jun 2025 |
| Team ID | LTVIP2025TMID49390 |
| Project Name | Cosmetic Insights : Navigating Cosmetics Trends and Consumer Insights |
| Maximum Marks | 4 Marks |

Technical Architecture:

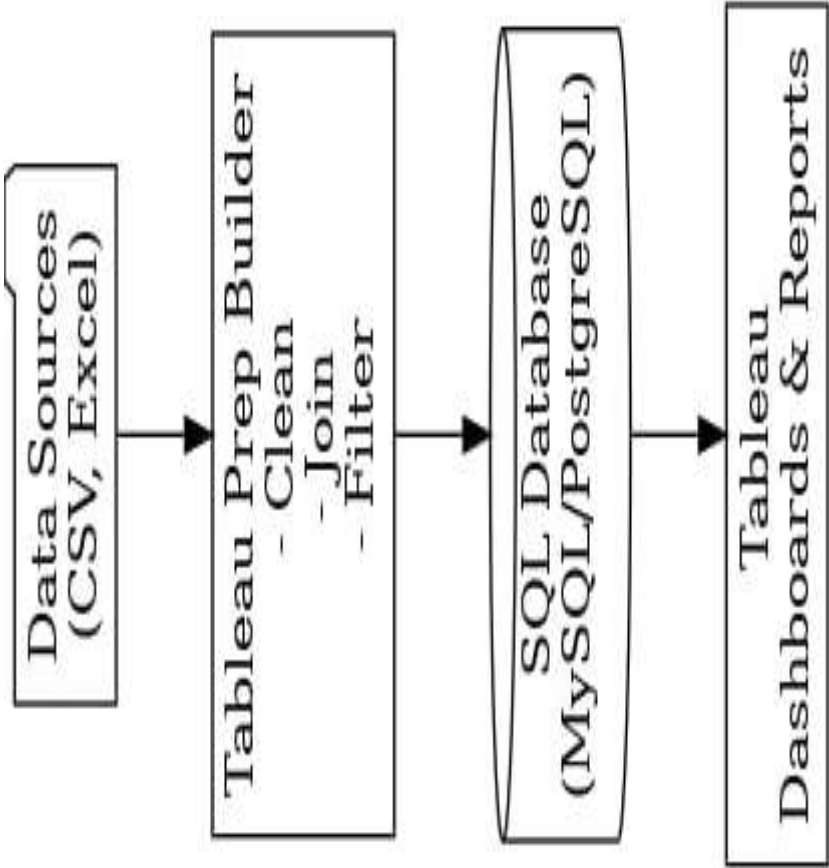


Table-1 : Components & Technologies:

| S.No | Component | Description | Technology |
|------|---------------------------------|--|--|
| 1. | User Interface | Interactive dashboard where users analyze trends and filter by region, product | Tableau Embedded Dashboard, Bootstrap Web Portal |
| 2. | Application Logic-1 | Automated data pipeline to pull sales data daily from CRM | online |
| 3. | Application Logic-2 | ETL and transformation: cleaning, aggregating, enriching data | Prep Builder |
| 4. | Application Logic-3 | Custom logic to calculate KPIs, YOY trends, and seasonal analytics | SQL Scripts / Tableau Calculated Fields |
| 5. | Database | Stores sales, customer segmentation, pricing tier, and feedback data | PostgreSQL |
| 6. | Cloud Database | Hosted database that syncs with Tableau | SQL ,Excel |
| 7. | File Storage | Raw datasets (CSV, Excel) and exported reports (PDF, PNG) | Drives |
| 8. | External API-1 | Retrieves public skincare trend data from online sources | None |
| 9. | External API-2 | Integrates demographic or social influence data for target segmentation | None |
| 10. | Machine Learning Model | Forecast product demand, predict user preferences | None |
| 11. | Infrastructure (Server / Cloud) | Entire solution deployed as microservices with CI/CD pipelines | GitHub |

Table-2: Application Characteristics:

| S.No | Characteristics | Description | Technology |
|------|--------------------------|---|--------------------------|
| 1. | Open-Source Frameworks | Tableau is a proprietary tool, so no open-source frameworks are used. | Not applicable |
| 2. | Security Implementations | Tableau provides user authentication, row-level security , and data encryption for dashboards | Tableau User Permissions |

| S.No | Characteristics | Description | Technology |
|------|-----------------------|--|--------------------------------|
| 3. | Scalable Architecture | Tableau dashboards can connect to live data sources | Tableau Cloud / Tableau Server |
| 4. | Availability | Tableau Cloud ensures high availability , auto backups | Tableau Online |
| 5. | Performance | Tableau optimizes performance via Hyper Extracts, Dashboard Performance | Tableau Hyper Engine, Extracts |