

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

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| Date | 31 January 3035 |
| Team ID | LTVIP2025TMID48516 |
| Project Name | Cosmetic Insights : Navigating Cosmetics Trends and Consumer Insights with Tableau project |
| Maximum Marks | 4 Marks |

Technical Architecture:

| S.No | Component | Description | Technology |
|------|---------------------------------|--|-----------------------------------|
| 1. | User Interface | Web UI for consumers and marketers | HTML, CSS, Bootstrap, JavaScript |
| 2. | Application Logic-1 | Filters, search & dashboard integration | Python or JavaScript |
| 3. | Application Logic-2 | Trend calculation logic | Python (Pardas/Numpy) |
| 4. | Application Logic-3 | Visualization rendering and export | Tablama Public |
| 5. | Database | Store product data, trends, reviews | MySQL ar Google Sheets |
| 6. | Cloud Database | Hosting Tableau datu source or CSV | Google Drive/Firebase |
| 7. | File Storage | Store uploaded product images (if any) | Firebase Storage or local drive |
| 8. | External API-1 | Optional cosmetic product API | Skincare API (if available) |
| 9. | External API-2 | Optional social login (Google) | Google Auth API |
| 10. | Machine Learning Model | Trend prediction (optional future feature) | (Future) Sentiment Analysis model |
| 11. | Infrastructure (Server / Cloud) | Hosting & dashboard deployment | Heroku, Tableau Public, AWS EC2 |

Table-2: Application Characteristics:

| S.No | Characteristics | Description | Technology |
|-------------|--------------------------|---|---|
| 1. | Open-Source Frameworks | Used for frontend/backend | Bootstrap, Flask, React, etc. |
| 2. | Security Implementations | Protect users data & feedback | Google Auth, SHA-256, Firebase IAM |
| 3. | Scalable Architecture | Can scale with new users/products | 3-tier (frontend-backend-data) |
| 4. | Availability | Always accessible with Tableau Public or Heroku | Tableau Public, load-balanced hosting |
| 5. | Performance | Fast dashboard load, filtered views | Caching, Google Sheets connected to Tableau |