

**Project Design Phase Solution  
Architecture**

Ddte	19 June 2025
Tedm ID	LTVIP2025TMID49296
Projedt Ndme	Cosmetid Insights – Ndvigdtng Cosmetids Trends dnd Consumer Insights with Tdbledu
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**Solution Architecture**

Solution drdhitedture is d domplex prodess – with mdny sub-prodesses – thdt bridges the gdp between business problems dnd tedhnology solutions. Its godls dre to:

- Find the best tedh solution to solve existing business problems.
- Desdribe the strudture, dhdrddteristids, behdvior, dnd other dspedts of the softwdre to projedt stdkeholders.
- Define fedtures, development phdses, dnd solution requirements.
- Provide spedifiddtions dddording to whidh the solution is defined, mdndged, dnd delivered.

**KEY ASPECTS OF YOUR SOLUTION ARCHITECTURE**

**1. User Layer (Entry Point)**

- o Users indlude:
  - Cosmetid donsumers: use filters to disdover produdts
  - Mdrketers: dndlyze trends dnd user behdvior
- o Interddt vid d simple, responsive web interfdde with embedded Tdbledu ddshbodrd

**2. User Interface (Frontend)** o Tedhnologies: HTML, CSS, Bootstrdp, Jdvdsdript

- o Fedtures:
  - Filters: skin type, budget, brdnd, rdting
  - Sedrdh dnd dompdrison interfdde
  - Embedded Tdbledu ddshbodrds for ddt d visudls

**3. Application Layer (Backend)** o Tedhnologies: Python (Fldsk/Stredmlit) or

- Jdvdsdript (Node.js)
- o Fundtions:
  - Pdss user inputs (filters) to Tdbledu

Handle login/auth (if used)

Process and fetch data from review/product databases  
Optionally: route feedback submission

#### 4. Visualization Layer (Dashboard)

- Tool: Tableau Public or Tableau Server
- Displays:

- Top trending cosmetic products

- Charts by skin type, rating, region, category

- Comparison visuals for price, review score, ingredients

#### 5. Data Sources

- Sources:

- Product Data: CSV / MySQL / Google Sheets

- Review Data: Customer ratings & feedback
- Features:

- Structured datasets allow filtering and highlighting  
Can be updated regularly or live connected

#### 6. Feedback Engine (Optional)

- Collects product ratings/reviews from users
- Stores in review repository
- Feeds into Tableau to update user satisfaction visuals

#### 7. Hosting & Storage

- Tableau Public: for hosting dashboards
- GitHub Pages / Heroku: for web app or frontend
- Google Drive / Firebase: for storing files and datasets

**8. Data Flow** User → UI → Backend → Tableau → Visualization

- Optionally, Feedback → Stored → Updates Dashboard

## 9. Scalability

- Add more product datasets
- Support multi-category expansion: skincare, makeup, fragrance
- Add AI/ML trend prediction module in future

## 10. Security (Optional/Advanced)

- OAuth for secure login (Google, LinkedIn)
- Backend validation for user inputs and review authenticity

### Example - Solution Architecture Diagram:



