Project Design Phase
Solution Architecture

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Team ID	LTVIP2026TMIDS37333
Project Name	Measuring the Pulse of Prosperity: An Index of Economic Freedom Analysis

Solution Architecture:

Objective

The architecture below outlines how our solution bridges the gap between business needs (interactive national-level economic comparisons) and technology implementation—using a modern, scalable, and secure stack with embedded analytics.

Architecture Overview

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[1. Data Layer]
  └── Heritage Index CSV/XLS → Stored in SQL (MySQL or SQL Server)

[2. Tableau Integration]
  └── Tableau Desktop connects to SQL data → builds visualizations
(dashboards, stories)
  └── Dashboards published to Tableau Public/Server

[3. Web Application Layer]
  └── Frontend: HTML + Bootstrap web app
  └── Embeds dashboards via Tableau's JavaScript Embedding API v3
(viz_v1.js)

[4. Hosting & Delivery]
  └── Hosted via GitHub Pages / Netlify (static site hosting)
  └── HTTPS-secured access
  └── Authentication/security managed via Tableau
```

```
(guest/SSO) :contentReference[oaicite:2]{index=2}

[5. User Interaction]
  └── Users (policymakers/investors) access site → interactive
dashboards load via iframe/API
  └── Filters + dynamic loading based on user input
```

🔍 Key Components

1. Data Layer

- The raw Heritage dataset is stored relationally in MySQL/SQL Server and optionally in Excel/CSV.

2. Tableau Layer

- Data connects live (or via extracts) using Tableau's data engine.
- Visualizations are published to **Tableau Public/Server**, making them shareable and embeddable tableau.comtableau.com+7help.tableau.com+7datacamp.com+7upgrad.com.

3. Web Integration Layer

- The HTML + Bootstrap site embeds dashboards using the JavaScript embedding API (`viz_v1.js`).
- This enables filters, toolbar control, responsive resizing, and custom user interactions help.tableau.com+1tableau.com+1.

4. Hosting & Security Layer

- Static assets are deployed via **GitHub Pages** or **Netlify**.
- Tableau view access is governed by embedded licensing and viewer permissions (guest or SSO) help.tableau.com.

5. User Access & Experience

- Dashboards are interactive, supporting country, pillar, and time filters.

- The intuitive frontend interface ensures broad stakeholder adoption and ease of use.

📈 Benefits s Justification

- **Scalable s Maintainable:** Architecture supports future data additions and new dashboards.
- **Performance-Driven:** Combines SQL + Tableau data extracts for high-speed visualization.
- **Secure s User-Friendly:** Public deployment with features like filtering and embedded analytics ensure a seamless experience.
- **Rapid Deployment:** Tableau and static hosting enable fast go-to-market without extensive backend development.

📄 References s Architecture Inspiration

- Tableau Desktop-to-Server pipeline and data engine architecture tableau.com+6datacamp.com+6intellipaat.com+6upgrad.com
- JavaScript API-based web embedding for customization tableau.com+1help.tableau.com+1
- Tableau Embedded Analytics solution components datacamp.com+8tableau.com+8guru99.com+8

🔜 Next Step: Diagram

Convert this architecture into a visual diagram (e.g., PowerPoint, Lucidchart, or Word SmartArt) showing the data flow between:

```
pgsql
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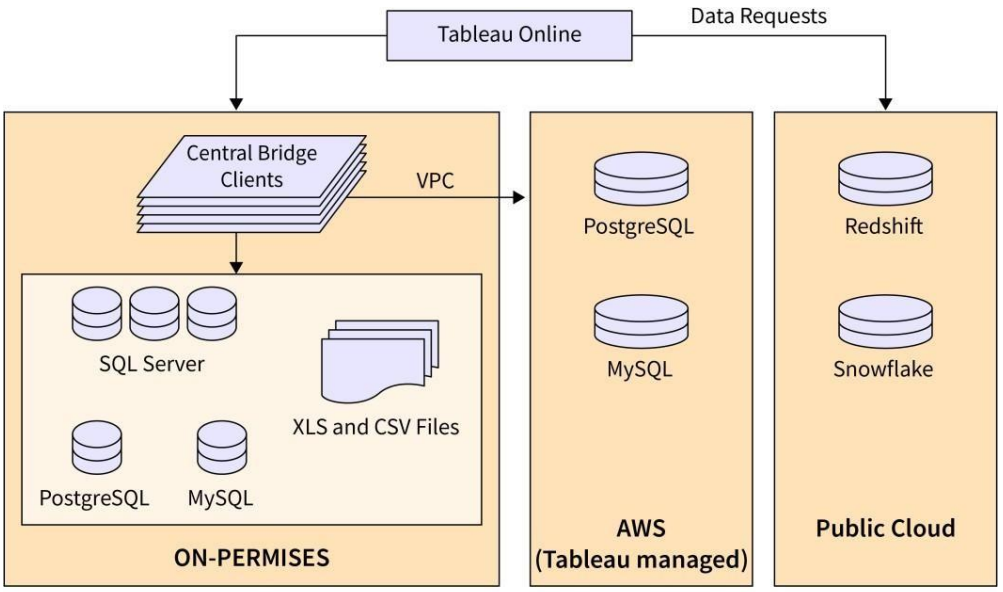
SQL Database → Tableau → Tableau Public → Web App → User Browser
```

Label each component and annotate filters, embedding API, and hosting layers.

Example - Solution Architecture Diagram:



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