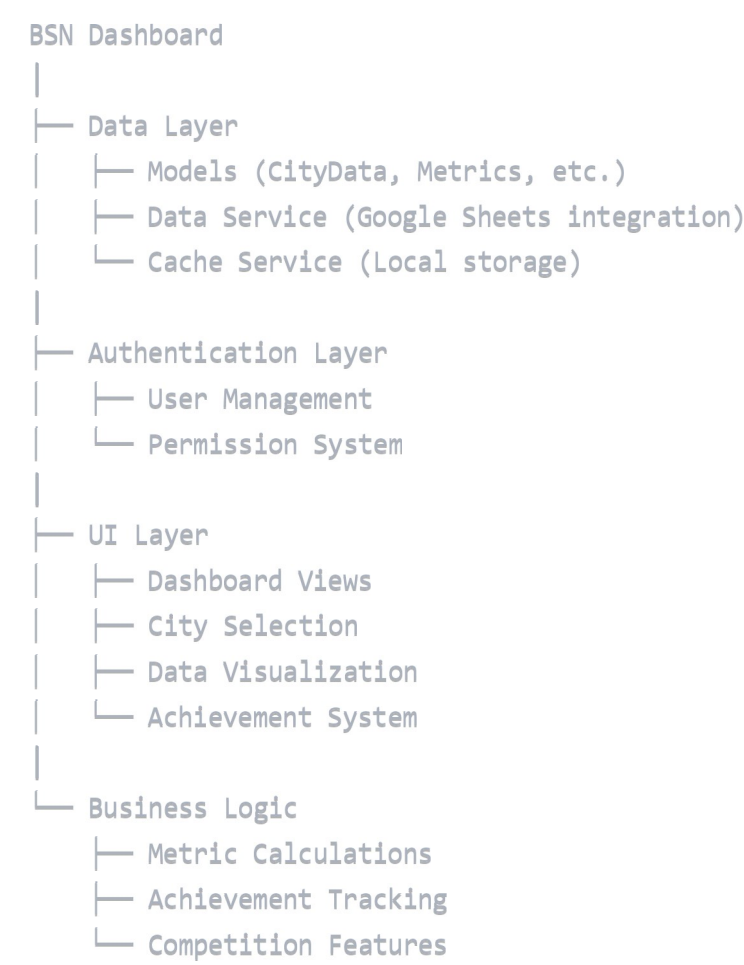


BSN Dashboard - Project Structure Overview

This document provides a high-level overview of the BSN Dashboard project architecture and component organization to maintain continuity across development sessions.

Project Architecture

Core Components



Key Relationships

- **Authentication** → **Data Layer**: User permissions determine which cities they can access
- **Data Layer** → **UI Layer**: City data populates UI components
- **Business Logic** → **UI Layer**: Achievements and competitions update UI elements

Folder Structure

```
Assets/
├── Scripts/
│   ├── Models/           # Data structures
│   ├── Services/         # API integrations
│   ├── UI/               # UI components
│   ├── Auth/             # Authentication
│   └── Utilities/        # Helper functions
│
├── Prefabs/
│   ├── UI/               # Reusable UI elements
│   └── Effects/          # Visual effects
│
├── Resources/
│   ├── Textures/         # Images, icons
│   ├── Fonts/            # Text fonts
│   ├── Animations/       # UI animations
│   └── Cities/           # City-specific assets
│
├── Scenes/               # Unity scenes
│   ├── Login.unity
│   ├── Dashboard.unity
│   └── Settings.unity
│
└── StreamingAssets/      # Runtime data files
    └── Config/           # Configuration files
```

Data Flow

1. **Authentication Flow:**
 - User enters credentials
 - System verifies against user database
 - User granted access to authorized cities
2. **Data Retrieval Flow:**
 - Request city data from Google Sheets
 - Parse and store in data models
 - Cache locally for offline access
 - Update UI with retrieved data
3. **Achievement System Flow:**
 - Monitor metrics for achievement criteria
 - Trigger achievement unlocks when criteria met
 - Show visual notification
 - Update achievement progress UI

Technology Stack

- **Unity 2021.3 LTS:** Core engine
- **Google Sheets API:** Data source
- **PlayerPrefs/JSON:** Local caching
- **TextMeshPro:** UI text rendering
- **UniTask:** Async operations

Key Scripts Reference

Script Name	Purpose
DataManager.cs	Central data access point
GoogleSheetsService.cs	Google Sheets integration
CityData.cs	Core data model
DashboardController.cs	Main UI controller
AuthManager.cs	User authentication
AchievementManager.cs	Achievement tracking
ChartController.cs	Data visualization

This structure provides a foundation for development while allowing flexibility for improvements as the project evolves.

