

# Unity Mobile Card Game Project Structure

## Root Directory Structure

```
L5RCardGame/
├── Assets/..... # Unity Assets folder
│   ├── Client/... # Client-side game logic
│   ├── Server/... # Server-side logic (for local testing)
│   ├── Shared/... # Code shared between client/server
│   ├── Media/... # All media assets
│   ├── Data/... # Game data (cards, packs, etc.)
│   ├── Plugins/... # Third-party plugins
│   ├── StreamingAssets/... # Runtime loadable assets
│   └── Resources/... # Unity Resources folder
├── ProjectSettings/... # Unity project settings
├── Packages/... # Unity Package Manager
├── Server/... # Standalone server project (C#)
├── Tools/... # Development tools & scripts
├── Documentation/... # Project documentation
├── .gitattributes... # Git LFS configuration
├── .gitignore... # Git ignore rules
└── README.md... # Project overview
```

## Detailed Client Structure

```
Assets/Client/
├── Scripts/
│   ├── Core/..... # Core game systems
│   │   ├── Game.cs..... # Main game controller
│   │   ├── GamePipeline.cs..... # Game flow management
│   │   ├── EffectEngine.cs..... # Effect processing
│   │   └── NetworkManager.cs..... # Client networking
│   ├── Players/..... # Player management
│   │   ├── Player.cs
│   │   ├── Spectator.cs
│   │   └── PlayerActions.cs
│   ├── Cards/..... # Card system
│   │   ├── BaseCard.cs
│   │   ├── DrawCard.cs
│   │   ├── ProvinceCard.cs
│   │   └── CardAbilities/
│   ├── GameSteps/..... # Game phase management
│   │   ├── SetupPhase.cs
│   │   ├── DynastyPhase.cs
│   │   ├── ConflictPhase.cs
│   │   └── FatePhase.cs
│   ├── UI/..... # User interface
│   │   ├── MainMenu/
│   │   ├── GameBoard/
│   │   ├── CardViews/
│   │   ├── Dialogs/
│   │   └── Mobile/..... # Mobile-specific UI
│   ├── Input/..... # Input handling
│   │   ├── TouchManager.cs
│   │   ├── CardInteraction.cs
│   │   └── GestureHandler.cs
│   ├── Rendering/..... # Rendering & effects
│   │   ├── CardRenderer.cs
│   │   ├── ParticleManager.cs
│   │   └── AnimationController.cs
│   └── Utils/..... # Utility scripts
│       ├── Extensions/
│       ├── Helpers/
│       └── Constants.cs
└── Prefabs/..... # Unity prefabs
    ├── UI/
    ├── Cards/
    ├── GameBoard/
    └── Effects/
└── Scenes/..... # Unity scenes
    └── MainMenu.unity
```

```
| ... └── GameBoard.unity  
| ... └── DeckBuilder.unity  
| └── LoadingScreen.unity  
└── Materials/ ..... # Unity materials  
└── Shaders/ ..... # Custom shaders
```

## Server Structure

```
Assets/Server/  
| └── Scripts/  
|   | └── Core/ ..... # Server core systems  
|   |   | └── GameServer.cs ..... # Main server controller  
|   |   | └── RoomManager.cs ..... # Game room management  
|   |   | └── AuthenticationManager.cs # Player authentication  
|   |   | └── DatabaseManager.cs ..... # Data persistence  
|   | └── Network/ ..... # Networking layer  
|   |   | └── MessageHandlers/  
|   |   | └── ClientConnection.cs  
|   |   | └── ServerNetworkManager.cs  
|   | └── GameLogic/ ..... # Server-side game rules  
|   |   | └── ServerGame.cs ..... # Server game instance  
|   |   | └── GameRules.cs ..... # Rule validation  
|   |   | └── AntiCheat.cs ..... # Cheat detection  
|   | └── Data/ ..... # Data access layer  
|   |   | └── PlayerData.cs  
|   |   | └── GameData.cs  
|   |   | └── StatisticsManager.cs  
|   | └── Utils/ ..... # Server utilities  
|   |   | └── ServerConstants.cs  
|   |   | └── Logging.cs  
└── Config/ ..... # Server configuration  
  | └── ServerSettings.asset  
  └── DatabaseConfig.asset
```

## Shared Code Structure

```
Assets/Shared/
|   └── Scripts/
|       |   └── Models/..... # Data models
|       |       |   └── CardModel.cs
|       |       |   └── PlayerModel.cs
|       |       |   └── GameStateModel.cs
|       |       └── NetworkMessages.cs
|       |   └── Enums/..... # Shared enumerations
|       |       |   └── GamePhases.cs
|       |       |   └── CardTypes.cs
|       |       └── ConflictTypes.cs
|       |   └── Interfaces/..... # Shared interfaces
|       |       |   └── ICard.cs
|       |       |   └── IPlayer.cs
|       |       └── IGameStep.cs
|       |   └── Extensions/..... # Extension methods
|       |   └── Utilities/..... # Shared utilities
|       |       |   └── JsonUtility.cs
|       |       └── ValidationHelper.cs
|       |   └── Constants/..... # Game constants
|       |       |   └── GameConstants.cs
|       |       └── NetworkConstants.cs
|       └── IronPython/..... # Python scripting
|           └── CardScripts/..... # Dynamic card scripts
|               |   └── Characters/
|               |       |   └── Events/
|               |       |   └── Holdings/
|               |       └── Provinces/
|               └── Effects/..... # Reusable effects
|                   └── Templates/..... # Script templates
```

## Media Structure

```
Assets/Media/
├── Audio/
│   ├── Music/..... # Background music (Git LFS)
│   │   ├── MainMenu.ogg
│   │   ├── GamePlay.ogg
│   │   └── Victory.ogg
│   ├── SFX/..... # Sound effects (Git LFS)
│   │   ├── CardPlay/
│   │   ├── UI/
│   │   ├── Ambient/
│   │   └── Voice/
│   └── AudioMixers/..... # Unity Audio Mixers
├── Textures/..... # All images (Git LFS)
│   ├── Cards/
│   │   ├── Characters/..... # Character card art
│   │   ├── Events/..... # Event card art
│   │   ├── Holdings/..... # Holding card art
│   │   ├── Provinces/..... # Province card art
│   │   ├── Backs/..... # Card backs
│   │   └── Frames/..... # Card frames/borders
│   ├── UI/
│   │   ├── Buttons/
│   │   ├── Panels/
│   │   ├── Icons/
│   │   ├── Backgrounds/
│   │   └── Mobile/..... # Mobile-specific UI assets
│   ├── GameBoard/
│   │   ├── Boards/..... # Game board backgrounds
│   │   ├── Rings/..... # Ring tokens
│   │   ├── Tokens/..... # Various game tokens
│   │   └── Effects/..... # Visual effect textures
│   └── Clan/..... # Clan-specific assets
│       ├── Crab/
│       ├── Crane/
│       ├── Dragon/
│       ├── Lion/
│       ├── Phoenix/
│       ├── Scorpion/
│       └── Unicorn/
└── Videos/..... # Video assets (Git LFS)
    ├── Intro.mp4
    ├── Tutorials/
    └── Trailers/
└── Fonts/..... # Custom fonts (Git LFS)
    ├── UI/
    └── Flavor/
```

```
└─ 3D/..... # 3D models (if any) (Git LFS)
... └─ CardModels/
... └─ Tokens/
... └─ Effects/
```

## Data Structure

```
Assets/Data/
  └── Cards/          # Card definitions
    ├── CoreSet/
    |   └── Crab/
    |       ├── Characters.json
    |       ├── Events.json
    |       ├── Holdings.json
    |       └── Provinces.json
    ├── Crane/
    ├── Dragon/
    ├── Lion/
    ├── Phoenix/
    ├── Scorpion/
    ├── Unicorn/
    └── Neutral/
  └── Expansions/
    ├── ExpansionPack1/
    └── ExpansionPack2/
  └── Promos/
  └── Packs/          # Pack definitions
    ├── CoreSet.json
    ├── DynastyPacks/
    ├── ClanPacks/
    └── DeluxeExpansions/
  └── Decks/          # Pre-built decks
    ├── Starter/
    ├── Competitive/
    └── Casual/
  └── Rules/          # Game rules data
    ├── GameRules.json
    ├── Keywords.json
    ├── Timing.json
    └── Restrictions.json
  └── Localization/  # Multi-language support
    ├── English/
    ├── Japanese/
    ├── Spanish/
    └── French/
  └── Configuration/ # Game configuration
    ├── GameSettings.json
    ├── ServerConfig.json
    └── ClientConfig.json
```

## Standalone Server Structure

```

Server/..... # Separate C# server project
|   L5RServer.sln      # Visual Studio solution
|   L5RServer/
|       Program.cs..... # Server entry point
|       Controllers/.... # API controllers
|       Services/..... # Business logic services
|       Models/..... # Data models
|       Database/..... # Entity Framework models
|       Network/..... # WebSocket/SignalR hubs
|       Authentication/.. # Auth services
|       GameEngine/..... # Server game logic
|       Utils/..... # Server utilities
|   L5RServer.Tests/.... # Unit tests
|   docker-compose.yml... # Docker configuration
|   appsettings.json..... # Server configuration
|   README.md..... # Server documentation

```

## Tools Structure

```

Tools/
|   CardImporter/..... # Tool to import card data
|   AssetValidator/.... # Validate asset integrity
|   BuildScripts/..... # Automated build scripts
|   Localization/..... # Translation tools
|   Database/..... # Database management tools

```

## Git LFS Optimization by Folder

### High-frequency LFS (large, frequently updated):

- Assets/Media/Textures/Cards/ - Card artwork
- Assets/Media/Audio/ - All audio files
- Assets/Client/Prefabs/ - Unity prefabs

### Medium-frequency LFS:

- Assets/Media/Textures/UI/ - UI assets
- Assets/Media/Videos/ - Video content
- Assets/Data/Cards/ - Card data files (can be large JSON)

### Small/Text files (regular Git):

- All .cs script files
- Assets/Data/Configuration/ - Small config files

- `Assets/Shared/IronPython/` - Python scripts (unless very large)

## Mobile-Specific Considerations

### Platform Folders:

```

Assets/
└── Plugins/
    ├── Android/..... # Android-specific plugins
    └── iOS/..... # iOS-specific plugins
└── StreamingAssets/
    ├── Android/..... # Android streaming assets
    └── iOS/..... # iOS streaming assets

```

### Build Output (excluded from Git):

```

Builds/
└── Android/
    ├── L5RGame.apk..... # Development builds
    └── L5RGame.aab..... # Release builds
└── iOS/
    └── L5RGame.ipa..... # iOS builds

```

### Key Benefits of This Structure:

- 1. Clear Separation:** Client, Server, Shared code clearly separated
- 2. Git LFS Optimized:** Large assets properly organized for LFS tracking
- 3. Mobile Ready:** Platform-specific folders and mobile UI considerations
- 4. Scalable:** Easy to add new expansions, clans, and features
- 5. Team Friendly:** Clear ownership of different areas
- 6. IronPython Ready:** Dedicated space for dynamic card scripts
- 7. Build Pipeline:** Organized for CI/CD and automated builds

This structure will work excellently with your Git LFS setup and provide a solid foundation for your Unity mobile card game development!