FPS Controller Pro - Documentation
Asset Version: 2.0
Developer: ElmanGameDevTools

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1. Introduction

1.1 Overview
FPS Controller Pro is a complete first-person character solution for Unity, featuring advanced movement systems, dynamic audio, and stunning visual effects.

1.2 Key Features
- **Advanced Player Controller**: Smooth movement, crouching, jumping, head bobbing
- **RGB Material Effects**: Dynamic color animations for materials
- **Surface-based Audio**: Intelligent footstep sounds based on terrain
- **Professional Code**: Clean, commented, and easily customizable

2. Installation & Requirements

2.1 Installation
1. Import the `.unitypackage` file
2. All assets will be organized in `ElmanGameDevTools/FirstPersonControllerPro/` folder
3. Open `Scenes/Demo.unity` to see all features

2.2 Requirements
- **Unity Version**: 2019.4 LTS or later
- **Render Pipeline Support**:
  - ✅ **Built-in RP**: Full support
  - ⚠️ **URP/HDRP**: Scripts work 100%, materials require manual conversion

3. Quick Start Guide

3.1 Using Prefabs
1. Navigate to `Player/Prefab/` folder
2. Drag the player prefab into your scene
3. Delete the default Main Camera
4. Press Play!

Alternative Prefab: Check `Prefab_polygon/` for additional character model.

Default Controls:
- Movement: WASD
- Look: Mouse
- Jump: Space
- Run: Left Shift
- Crouch: Left Control

4. Detailed Setup

4.1 Player Controller Setup
Select the player and configure in Inspector:
- `Speed` / `Run Speed`: Movement velocities
- `Jump Height`: Jump capability
- `Sensitivity`: Mouse look sensitivity
- `Crouch Height`: Crouch parameters

4.2 Footstep Audio Setup
Audio files are located in `Player/Song/` folder.

In `PlayerMusic` component:
1. Add surface tags to `Surface Tags` array
2. Assign corresponding audio clips from `Player/Song/` folder
3. Adjust pitch settings for different movement states

4.3 Standing Height Marker (Important!)
For proper crouching:
1. Create empty GameObject named "StandingMarker"
2. Position it at player's full standing height
3. Assign to `Standing Height Marker` field

5. RGB Visual Effects

5.1 RGB Material Effects
Add dynamic color animations to any material:

Quick Setup:
1. Add `RGBMaterialEffect` script to GameObject
2. Assign target material from `Materials/` folder
3. Choose color mode and adjust speed

Color Modes:
- **Sine Wave**: Smooth color cycling
- **Linear**: Continuous color transition
- **Ping Pong**: Back-and-forth animation

6. Customization & Script Reference

6.1 PlayerController Script

Location: `Scripts/PlayerSystem/PlayerController.cs`

Key Methods:
- `bool IsCrouching()` - Returns crouch state
- Automatic head bobbing and camera control

6.2 PlayerMusic Script
Location: `Scripts/PlayerSystem/PlayerMusic.cs`

Key Features:
- Surface detection via raycasting
- Dynamic pitch adjustment for movement states
- Automatic audio management

6.3 RGBMaterialEffect Script
Location: `Scripts/VisualEffects/RGBMaterialEffect.cs`

Key Methods:
- `SetSpeed(float)` - Adjust animation speed
- `SetColorMode(ColorMode)` - Change animation style
- `SetColorChannels(bool, bool, bool)` - Control RGB channels

7. Asset Contents

Folder Structure:
- `Documentation/` - This manual and guides
- `Materials/` - Custom materials for effects
- `Mesh/` - 3D models and meshes
- `Player/` - Main player assets
  - `Prefab/` - Player prefab
  - `Song/` - Footstep audio files
- `Prefab_polygon/` - Alternative character model
- `Scenes/` - Demo scene
- `Scripts/` - All C# scripts
  - `PlayerSystem/` - Player controller and audio
  - `VisualEffects/` - RGB effects system
- `Textures/` - Textures and images

8. Troubleshooting (FAQ)

Q: Materials appear pink in URP/HDRP?
A: This is normal. Manually assign URP/HDRP shaders to materials after import.

Q: Player can't stand up from crouch?
A: Check Standing Height Marker setup and ensure no obstacles above player.

Q: No footstep sounds?

A: Verify surface tags match your scene objects and audio clips are assigned from `Player/Song/` folder.

Q: Which prefab should I use?
A: Start with `Player/Prefab/` - use `Prefab_polygon/` for low-poly style.

Support
For technical support, contact through Unity Asset Store messaging system.

Documentation version 2.0 - Updated for actual folder structure