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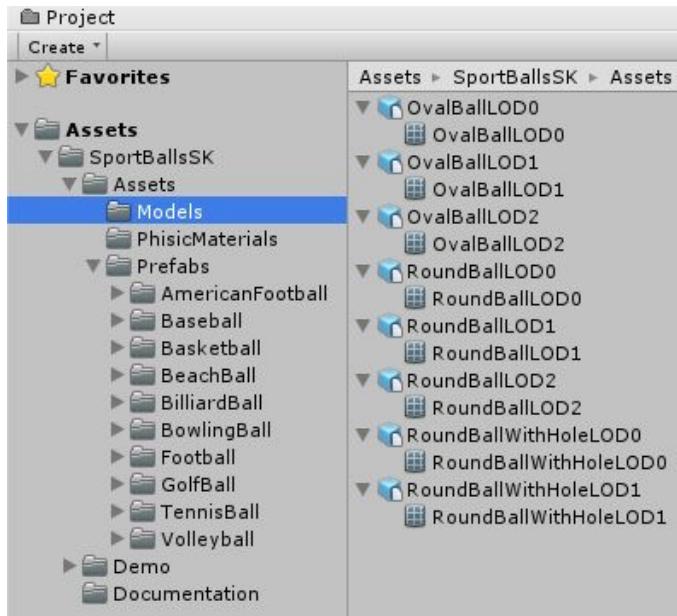
[Contacts](#)

Folder Structure

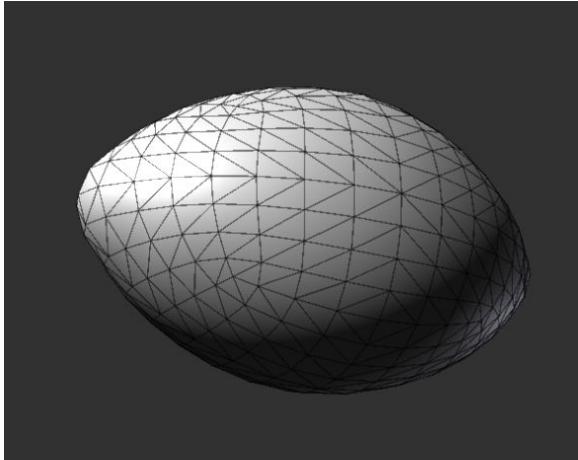


Assets(SportBallsSK/Assets)

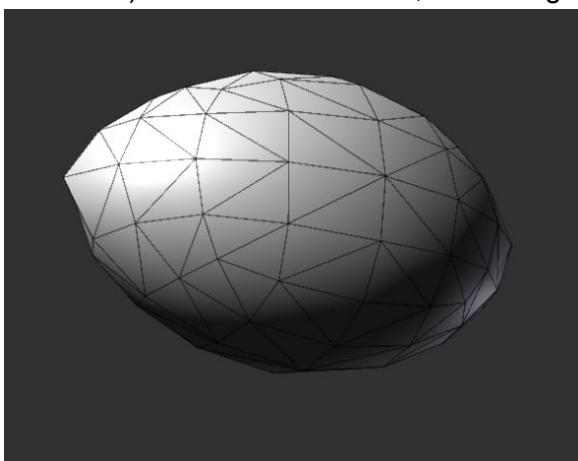
Models



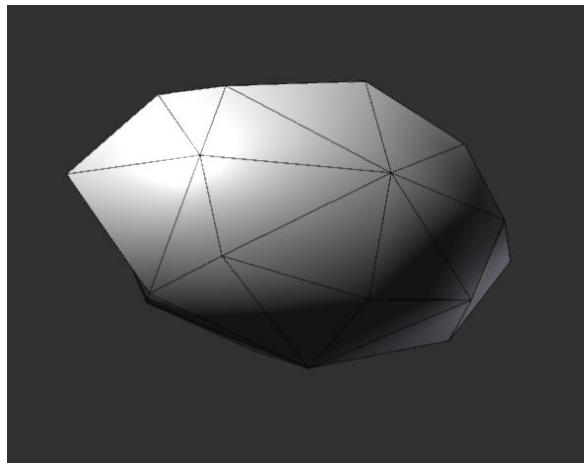
- ❑ OvalBallLOD0.fbx with the OvalBallLOD0 mesh, used in the AmericanFootball prefab, as the LOD0 (Level Of Details). Contains 450 vertex, 768 triangles.



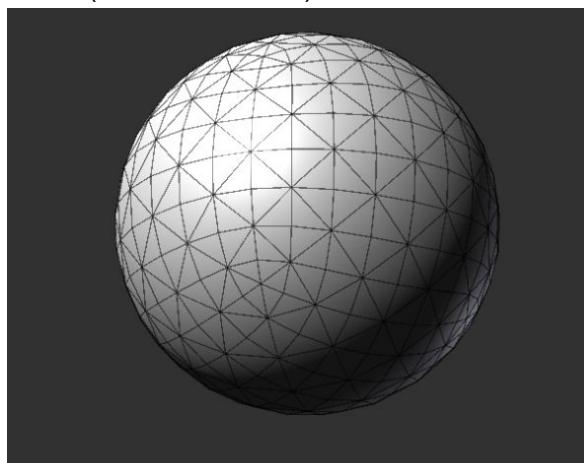
- ❑ OvalBallLOD1.fbx with the OvalBallLOD1 mesh, used in the AmericanFootball prefab, as the LOD1 (Level Of Details). Contains 130 vertex, 192 triangles.



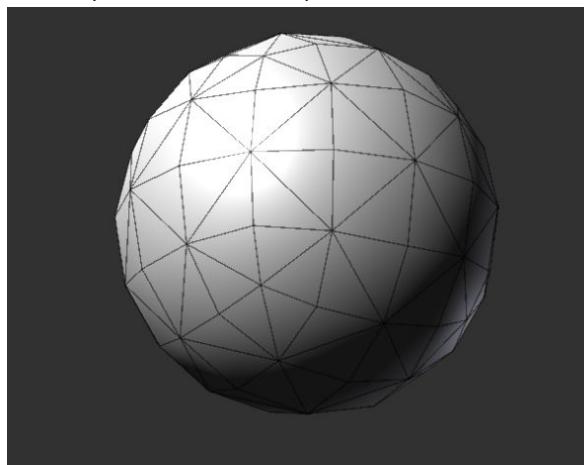
- ❑ OvalBallLOD2.fbx with the OvalBallLOD2 mesh , used in the AmericanFootball prefab, as the LOD2 (Level Of Details). Contains 42 vertex, 48 triangles.



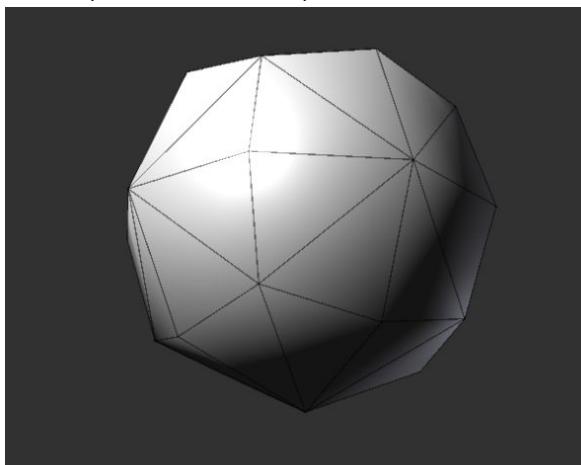
- ❑ RoundBallLOD0.fbx with the RoundBallLOD0 mesh, used in all round (spherical) ball prefabs, as the LOD0 (Level Of Details). Contains 450 vertex, 768 triangles.



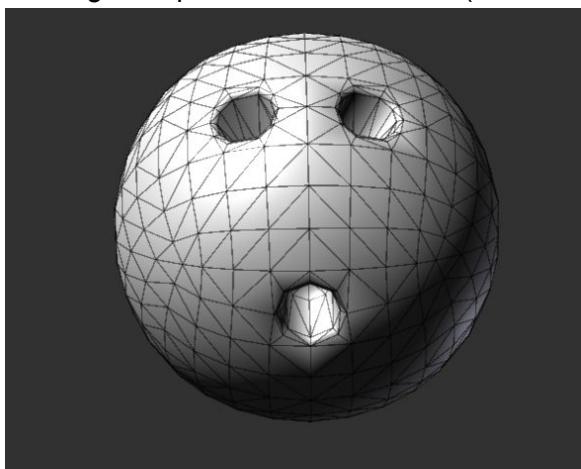
- ❑ RoundBallLOD1.fbx with the RoundBallLOD1 mesh, used in all round (spherical) ball prefabs, as the LOD1 (Level Of Details). Contains 130 vertex, 192 triangles.



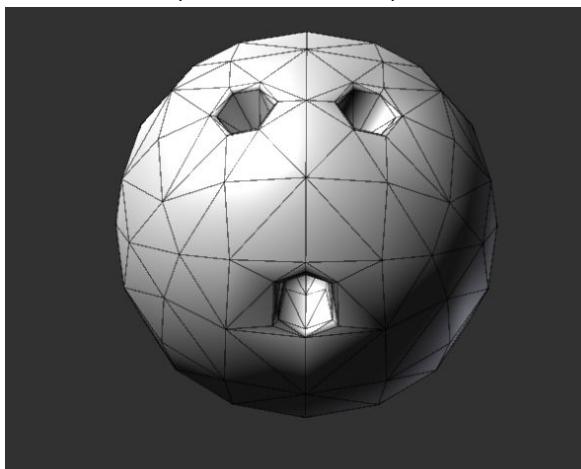
- ❑ RoundBallLOD2.fbx with the RoundBallLOD2 mesh, used in all round (spherical) ball prefabs, as the LOD2 (Level Of Details). Contains 42 vertex, 48 triangles.



- ❑ RoundBallWithHoleLOD0.fbx with the RoundBallWithHoleLOD0 mesh, used in the BowlingBall1 and BowlingBall2 prefabs, as the LOD0 (Level Of Details). Contains 531 vertex, 930 triangles.

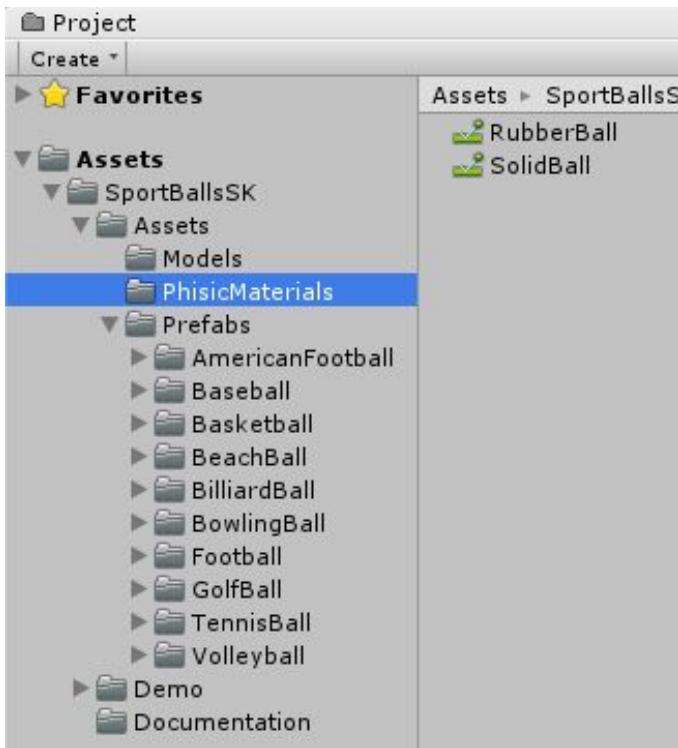


- ❑ RoundBallWithHoleLOD1.fbx with the RoundBallWithHoleLOD1 mesh, used in the BowlingBall1 prefab, as the LOD1 (Level Of Details). Contains 181 vertex, 294 triangles.



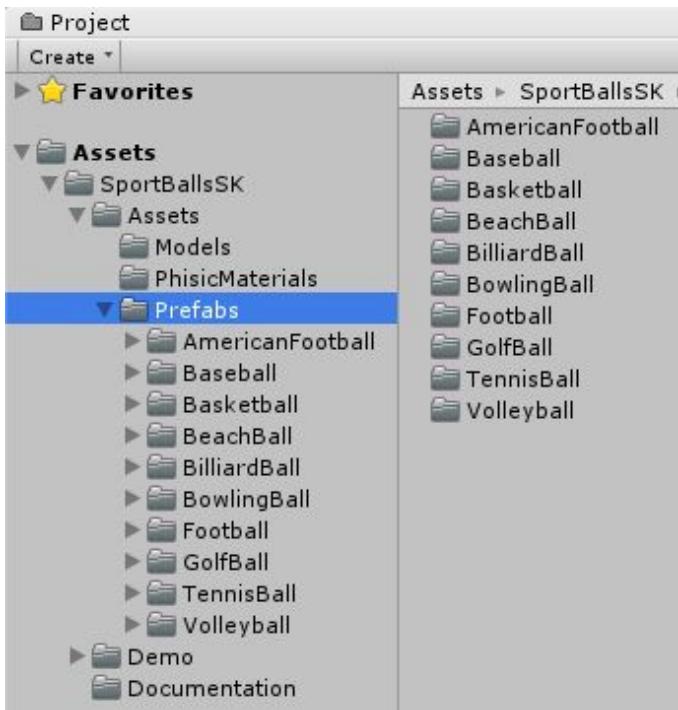
PhisicMaterials

PhisicMaterials folder contains two physic materials (physic materials are simplified and do not correspond to real physical materials).



- RubberBall - simulates a rubber ball. Applied to the AmericanFootball, Baseball, Basketball(1 - 3), BeachBall(1 - 6), Football, GolfBall, TennisBall, Volleyball(1 - 3) and their variations.
- SolidBall - simulates a solid body. Applied to the BilliardBallColored(01 - 16), BilliardBallOneColor(01 - 16), BowlingBall(1 - 3).

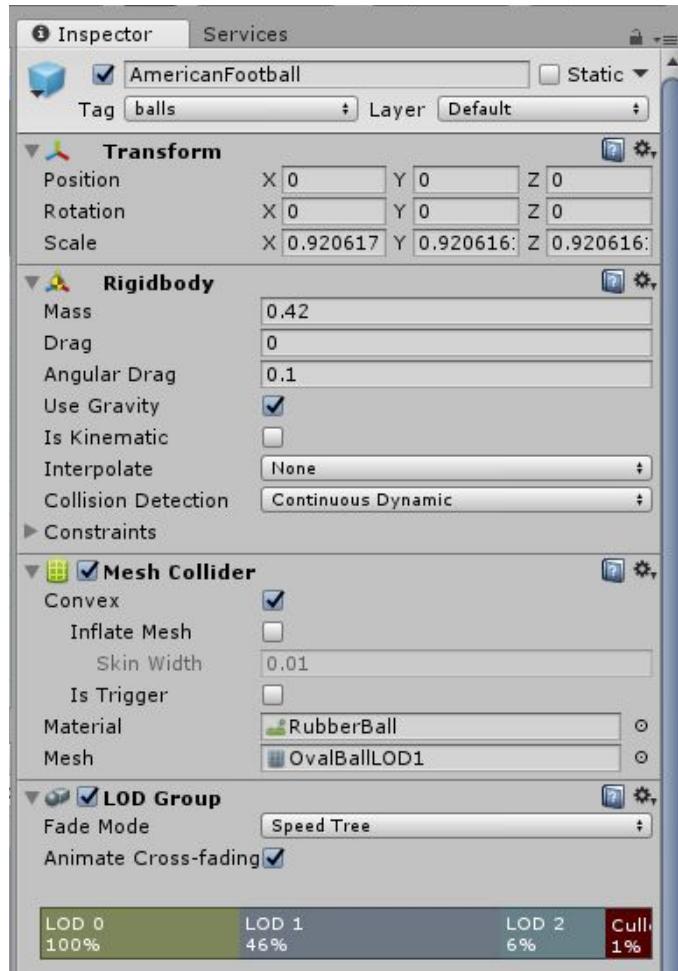
Prefabs



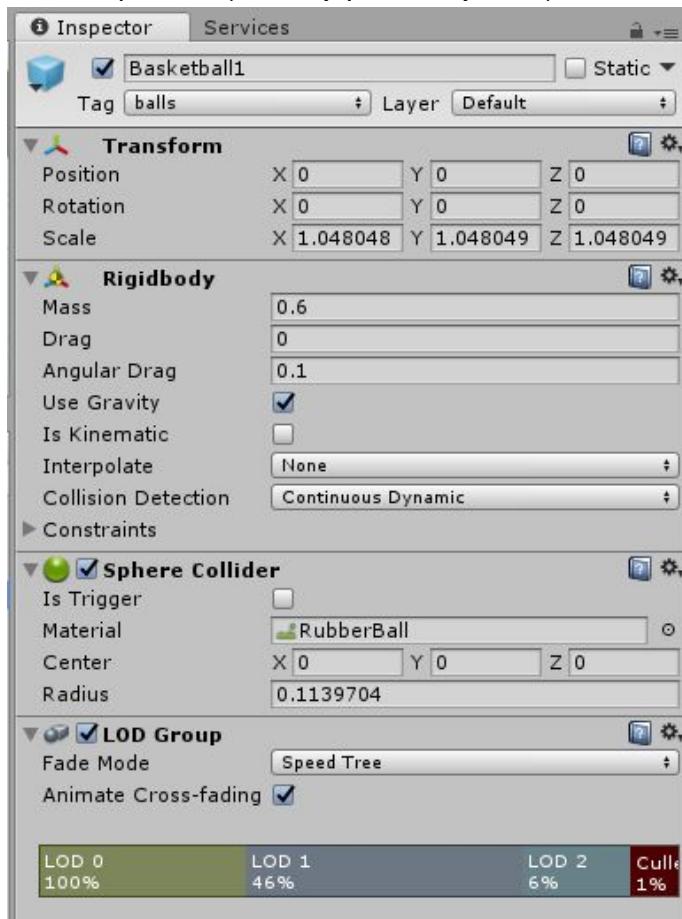
All balls have size and weight parameters approximately equal to a real.

Collider settings

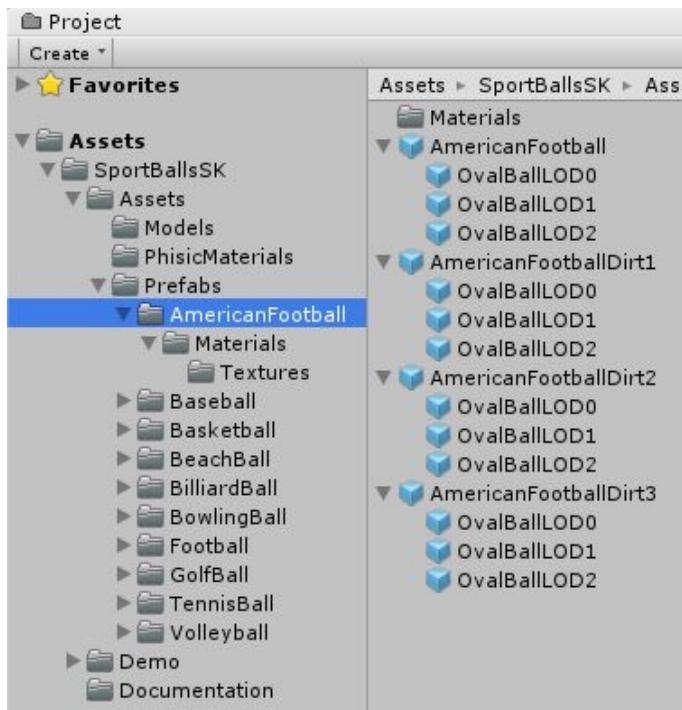
AmericanFootball prefab (and variations), have the Mesh Collider component, with the OvalBallLOD1 mesh(130 vertex, 192 triangles).



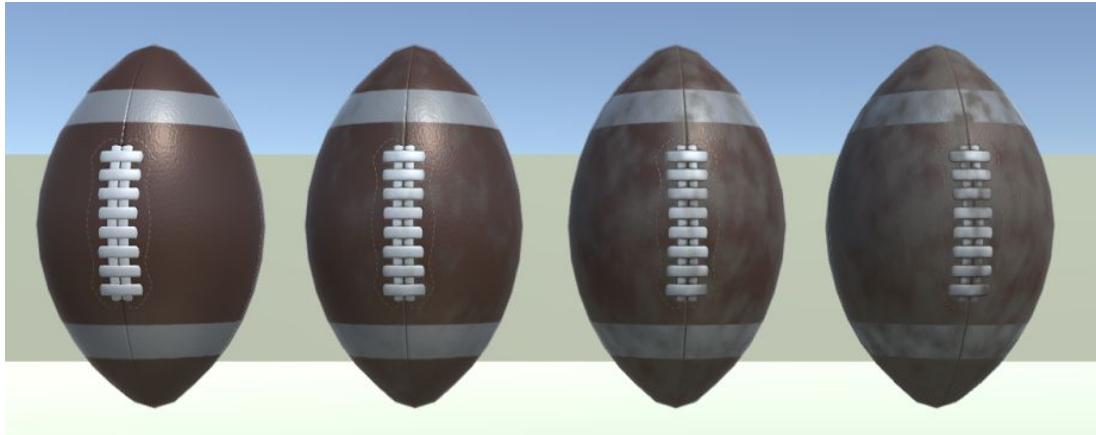
All other prefabs (round (spherical) balls), have the Sphere Collider component.



AmericanFootball



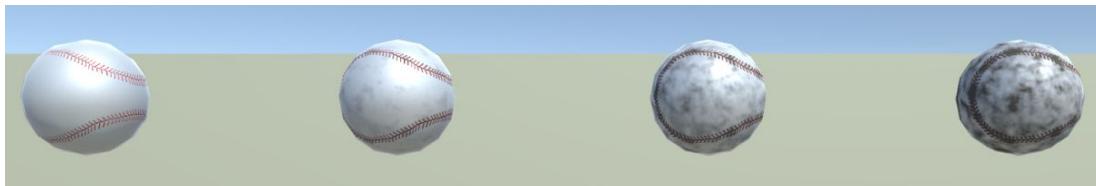
AmericanFootball folder, contains four prefabs that have the same settings but different materials.



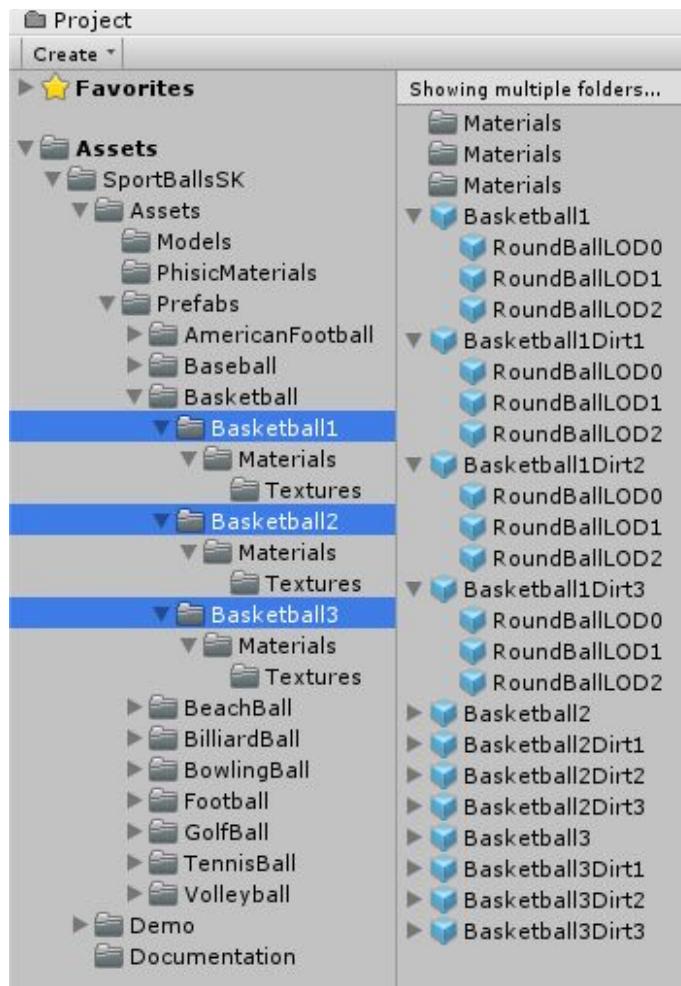
Baseball

The Unity Project Manager interface showing the asset structure for the SportBallsSK project. The left pane shows a tree view of assets under the Assets folder, including SportBallsSK, Assets, Prefabs, and a selected Baseball folder. The right pane shows the contents of the selected Baseball folder, which contains Materials, sub-folders for Baseball, BaseballDirt1, BaseballDirt2, and BaseballDirt3, and LOD0, LOD1, and LOD2 versions of each material.

Baseball folder, contains four prefabs that have the same settings but different materials.



Basketball



Folders Basketball1, Basketball2, Basketball3 contains different variations of basketball balls.
Prefabs in these folders have the same settings but different materials.

Basketball1

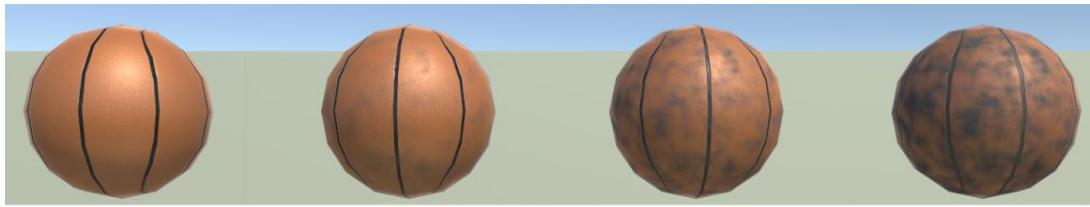


Basketball2



Basketball3





Beachball

Project Create ▾

▶ ★ Favorites

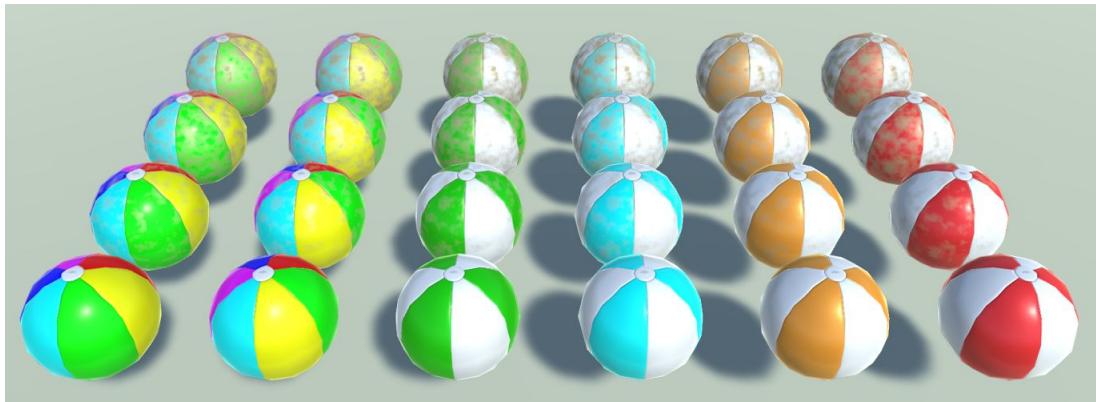
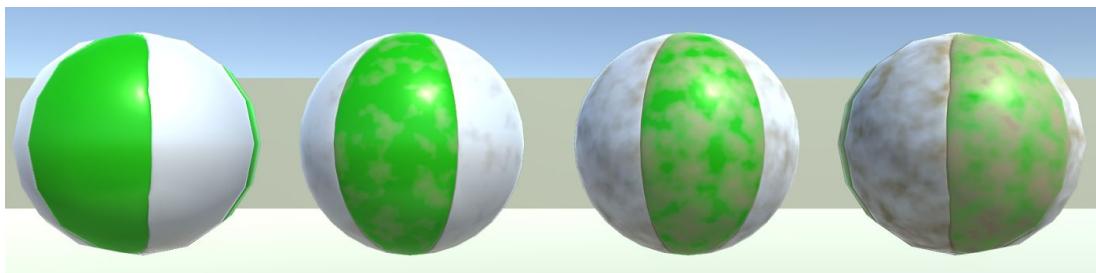
▼ Assets

- ▶ SportBallsSK
 - ▼ Assets
 - Models
 - PhisicMaterials
 - ▼ Prefabs
 - ▶ AmericanFootball
 - ▶ Baseball
 - ▶ Basketball
 - ▼ BeachBall
 - ▶ BeachBall1
 - ▼ Materials
 - Textures
 - ▶ BeachBall2
 - ▼ Materials
 - Textures
 - ▶ BeachBall3
 - ▼ Materials
 - Textures
 - ▶ BeachBall4
 - ▼ Materials
 - Textures
 - ▶ BeachBall5
 - ▼ Materials
 - Textures
 - ▶ BeachBall6
 - ▼ Materials
 - Textures
 - BilliardBall
 - BowlingBall
 - Football
 - GolfBall
 - TennisBall
 - Volleyball
 - ▶ Demo
 - Documentation

Showing multiple folders...

- Materials
- Materials
- Materials
- Materials
- Materials
- ▼ BeachBall1
 - RoundBallLOD0
 - RoundBallLOD1
 - RoundBallLOD2
- ▼ BeachBall1Dirt1
 - RoundBallLOD0
 - RoundBallLOD1
 - RoundBallLOD2
- ▼ BeachBall1Dirt2
 - RoundBallLOD0
 - RoundBallLOD1
 - RoundBallLOD2
- ▼ BeachBall1Dirt3
- BeachBall2
- BeachBall2Dirt1
- BeachBall2Dirt2
- BeachBall2Dirt3
- BeachBall3
- BeachBall3Dirt1
- BeachBall3Dirt2
- BeachBall3Dirt3
- BeachBall4
- BeachBall4Dirt1
- BeachBall4Dirt2
- BeachBall4Dirt3
- BeachBall5
- BeachBall5Dirt1
- BeachBall5Dirt2
- BeachBall5Dirt3
- BeachBall6
- BeachBall6Dirt1
- BeachBall6Dirt2
- BeachBall6Dirt3

Folders BeachBall(1 - 6) contain different variations of beach balls.
Prefabs in these folders have the same settings but different materials.



“SportBallsSK/Assets/Prefabs/BeachBall/Textures” folder contain common textures for all beach balls.

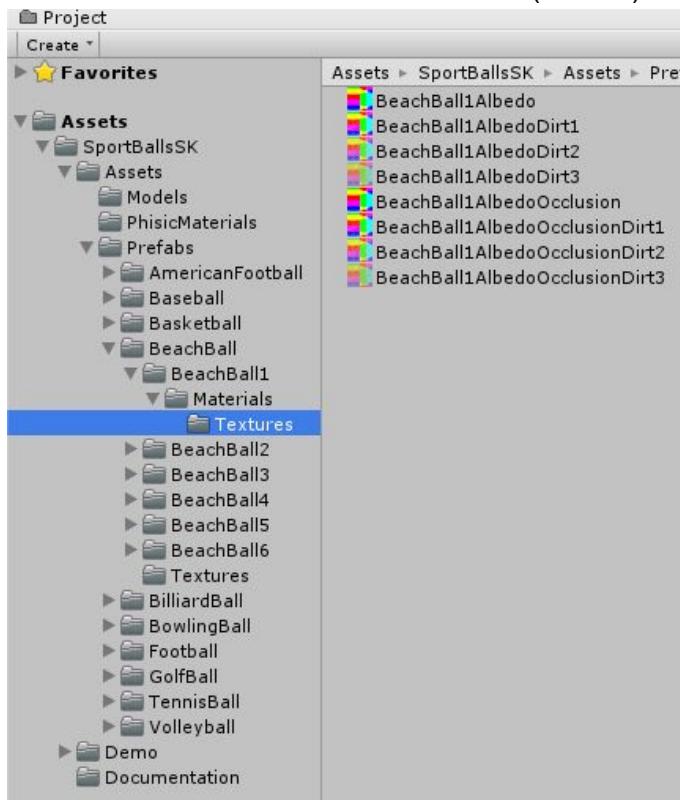
The screenshot shows the Unity Project Manager interface. The left pane displays the project structure:

- Assets
- SportBallsSK
- Assets
- Models
- PhisicMaterials
- Prefabs
 - AmericanFootball
 - Baseball
 - Basketball
 - BeachBall
 - BeachBall1
 - BeachBall2
 - BeachBall3
 - BeachBall4
 - BeachBall5
 - BeachBall6
- Textures
 - BilliardBall
 - BowlingBall
 - Football
 - GolfBall
 - TennisBall
 - Volleyball
- Demo
- Documentation

The right pane shows the contents of the "Textures" folder under "Assets > SportBallsSK > Assets":

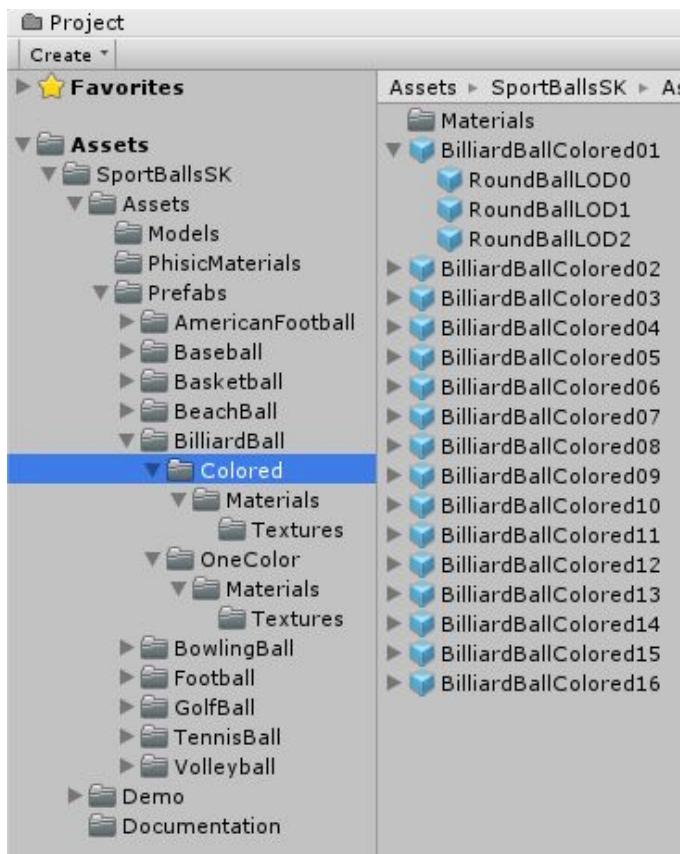
- BeachBallNor
- BeachBallOcclusion
- BeachBallSpecRougDirt1
- BeachBallSpecRougDirt2
- BeachBallSpecRougDirt3

"SportBallsSK/Assets/Prefabs/BeachBall/**BeachBall(1 - 6)**/Materials/Textures" folders contains individual textures for each ball (Albedo).

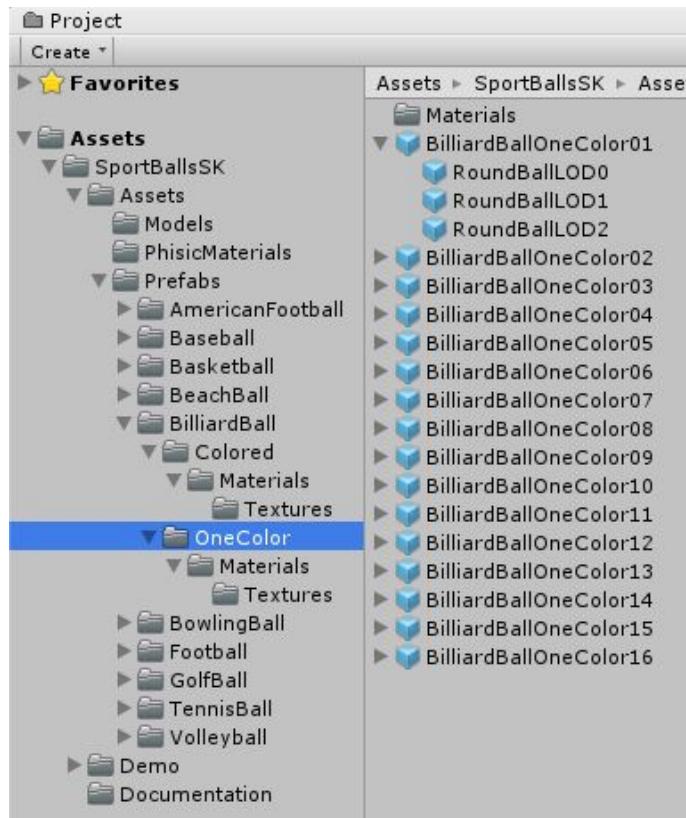


BilliardBall

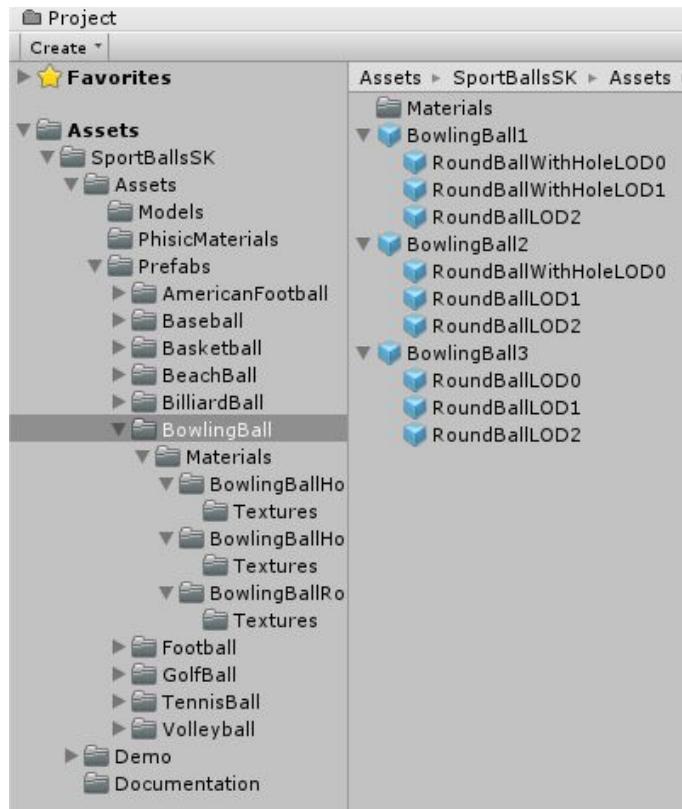
"Colored" folder contains colored billiard balls.



"OneColor" folder contains one-color billiard balls.



BowlingBall



BowlingBall folder, contains three variations of the billiard ball.

BowlingBall1

RoundBallWithHoleLOD0 (531 vertex, 930 triangles)
RoundBallWithHoleLOD1 (181 vertex, 294 triangles)
RoundBallLOD2 (42 vertex, 48 triangles)

BowlingBall2

RoundBallWithHoleLOD0 (531 vertex, 930 triangles)
RoundBallLOD1 (130 vertex, 192 triangles)
RoundBallLOD2 (42 vertex, 48 triangles)

BowlingBall3

RoundBallLOD0 (450 vertex, 768 triangles)
RoundBallLOD1 (130 vertex, 192 triangles)
RoundBallLOD2 (42 vertex, 48 triangles)

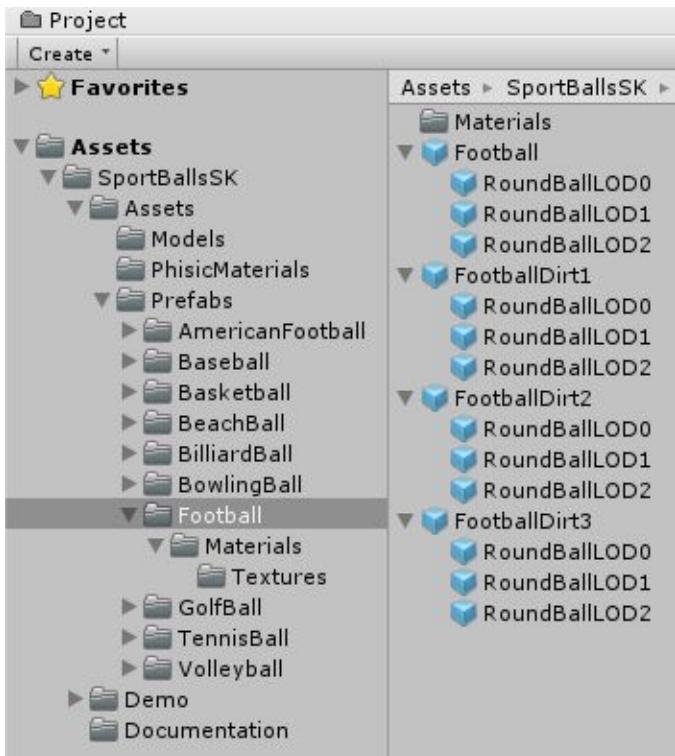
RoundBallWithHoleLOD0



RoundBallLOD0



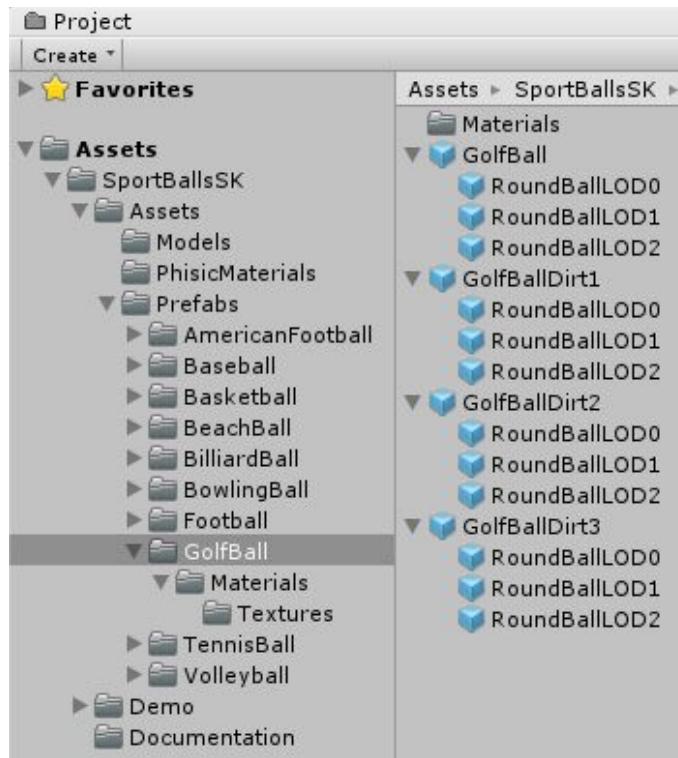
Football



Football folder, contains four prefabs that have the same settings but different materials.



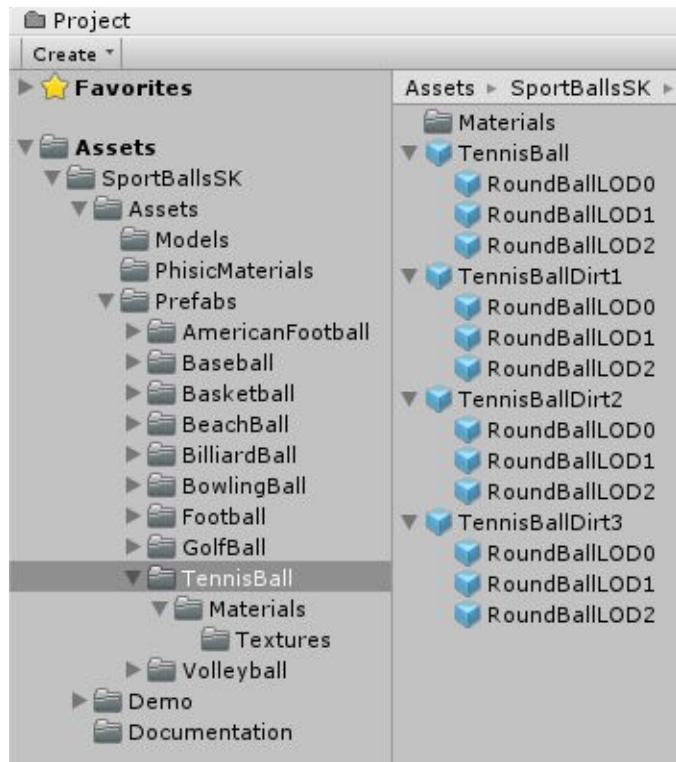
GolfBall



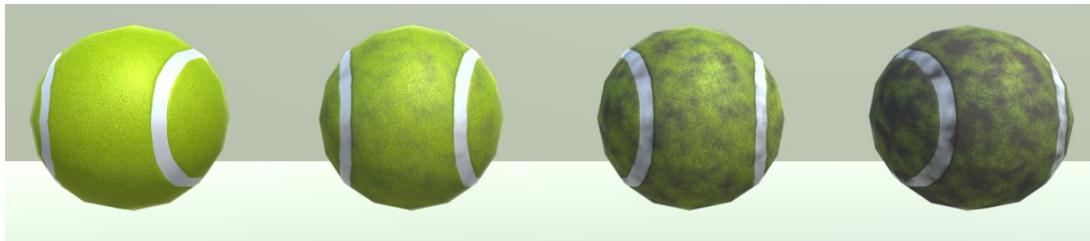
GolfBall folder, contains four prefabs that have the same settings but different materials.



TennisBall



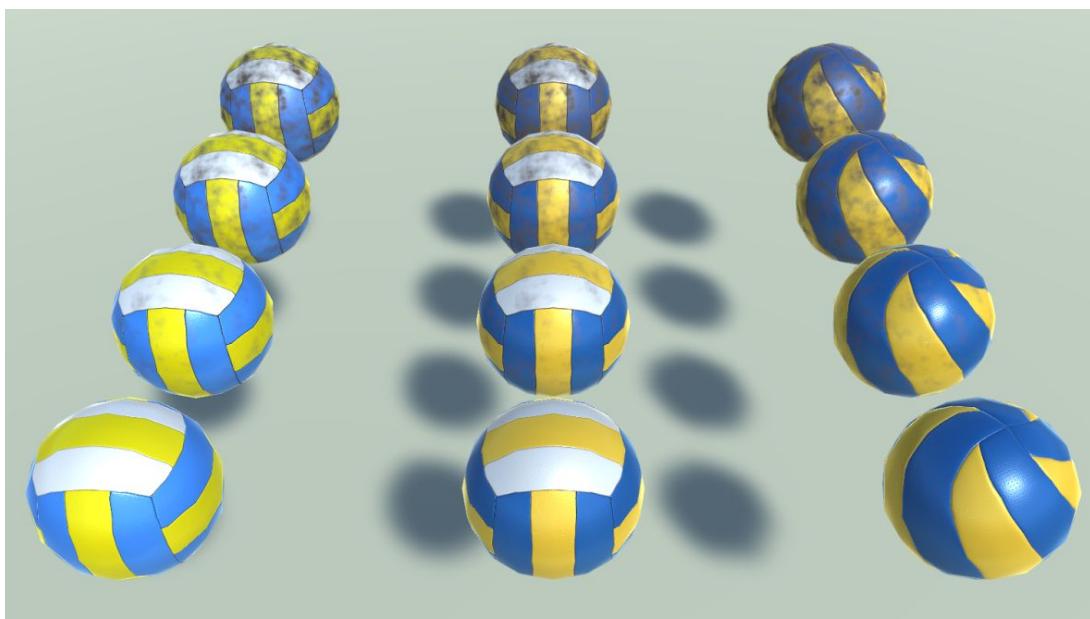
TennisBall folder, contains four prefabs that have the same settings but different materials.

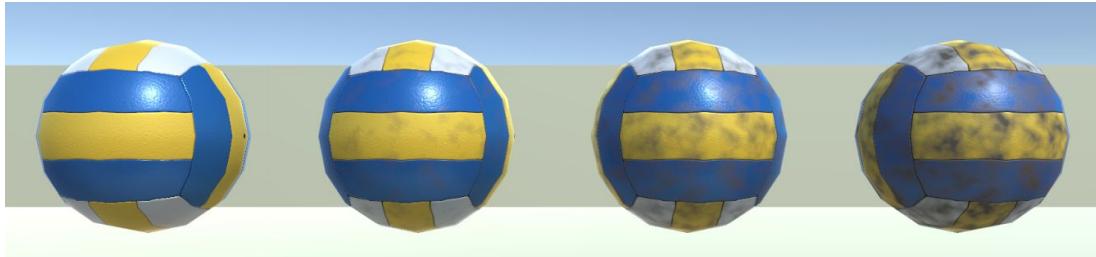


Volleyball



Volleyball(1 - 3) folders contain different variations of the volleyball balls.
Prefabs in these folders have the same settings but different materials.

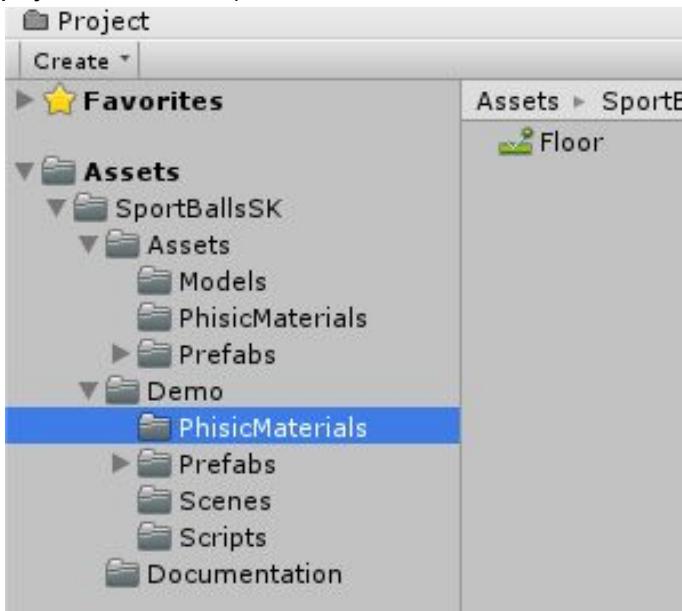




Demo

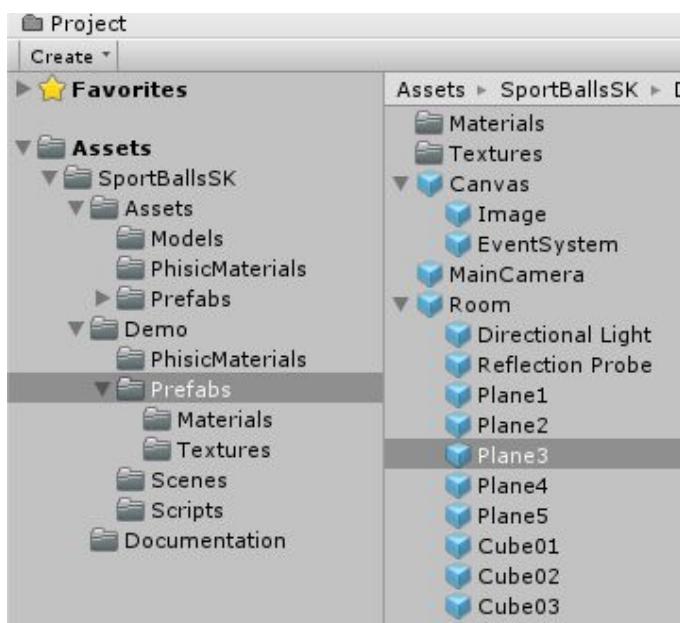
PhisicMaterials

PhisicMaterials folder contains one physic materials (physic materials are simplified and do not correspond to real physical materials).



- Floor - applied to the floor and walls on the demo scene.

Prefabs



Contains prefabs for the demo scene.

Scenes

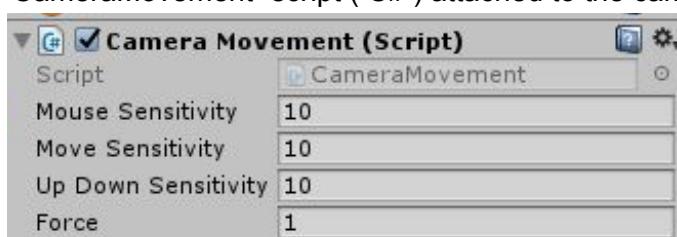
DemoScene

The DemoScene contains the game room and balls. After starting the game, you can navigate the scene with the keys: W - forward, S - back, A - left, D - right, R - up, F - down, rotate camera with the mouse. Move the crosshair at the ball and press the left mouse button, you will accelerate ball.

Scripts

CameraMovement

“CameraMovement” script (C#) attached to the camera, allows to the camera move and “shoot” on balls.



- Mouse Sensitivity - responsible for the sensitivity of the camera rotation with the mouse.
- Move Sensitivity - responsible for the sensitivity of the camera movement.
- Up Down Sensitivity - responsible for the sensitivity of the camera movement up and down.
- Force - the force acting on the ball.

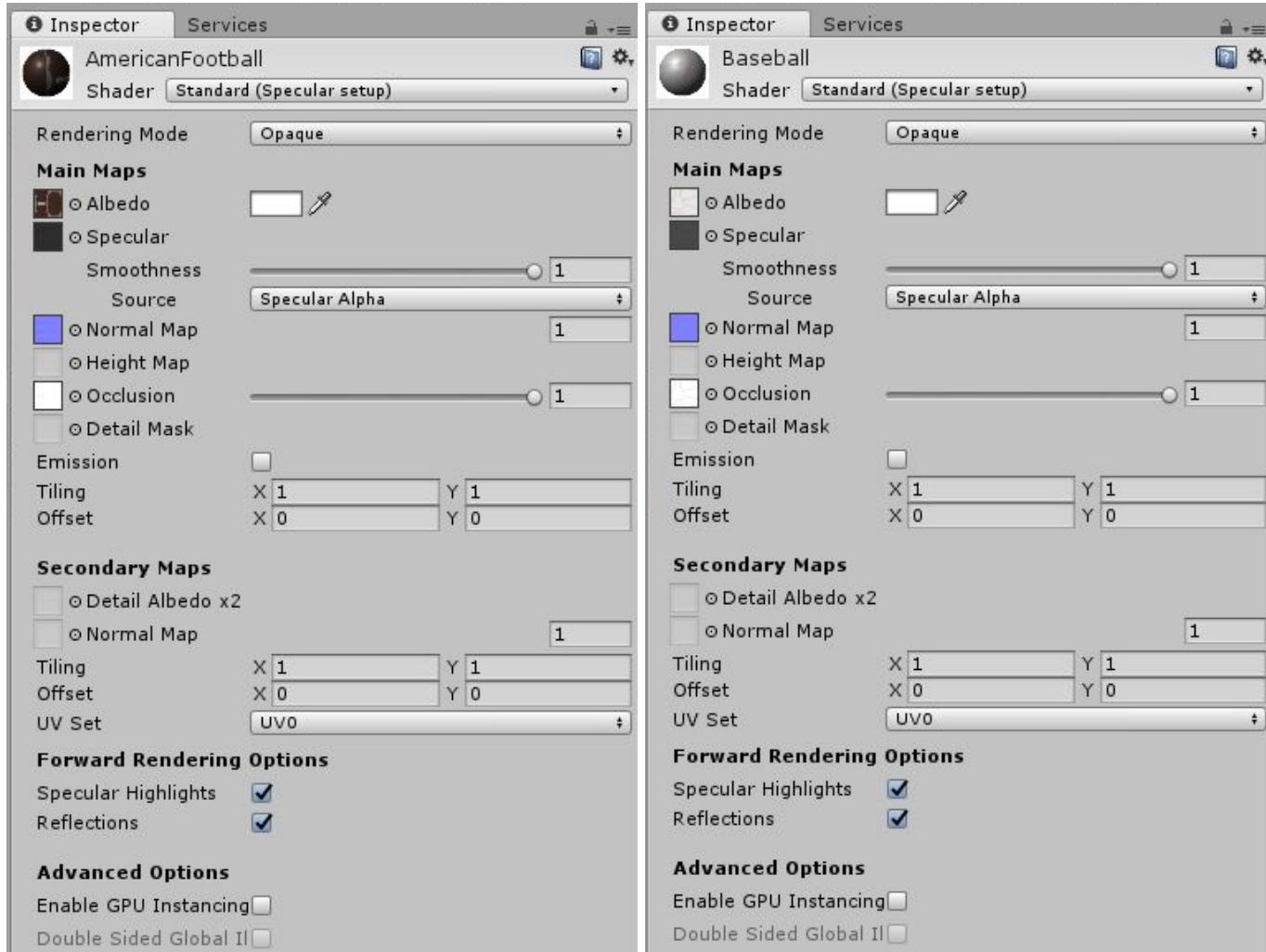
Documentation

“Documentation” folder contains this documentation.

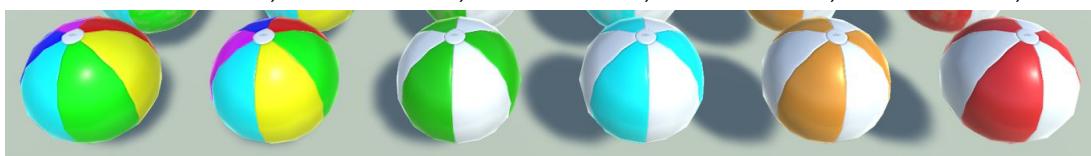
Materials

Naming rules

- ❑ “ball name” - materials of clean balls, for example, “AmericanFootball”, “Baseball”, “GolfBall”, etc.



- ❑ “ball name(number)” - different variations of the same clean ball, for example, “Basketball1”, “Basketball2”, “Basketball3”, “BeachBall1”, “BeachBall2”, “BeachBall3”, etc.



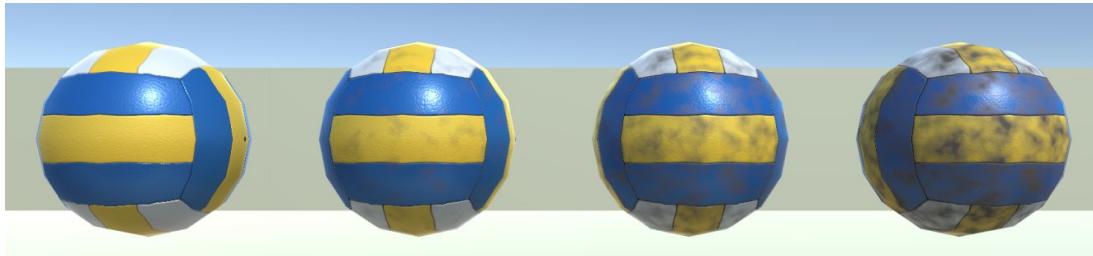
- ❑ “ball name(number)”+”Dirt(1,2,3)” - materials with different levels of dirt, for example, “AmericanFootballDirt1”, “AmericanFootballDirt2”, “AmericanFootballDirt3”, “Basketball1Dirt1”, “Basketball1Dirt2”, “Basketball1Dirt3”, “BeachBall4Dirt1”, “BeachBall4Dirt2”, “BeachBall4Dirt3”, etc.

Volleyball2

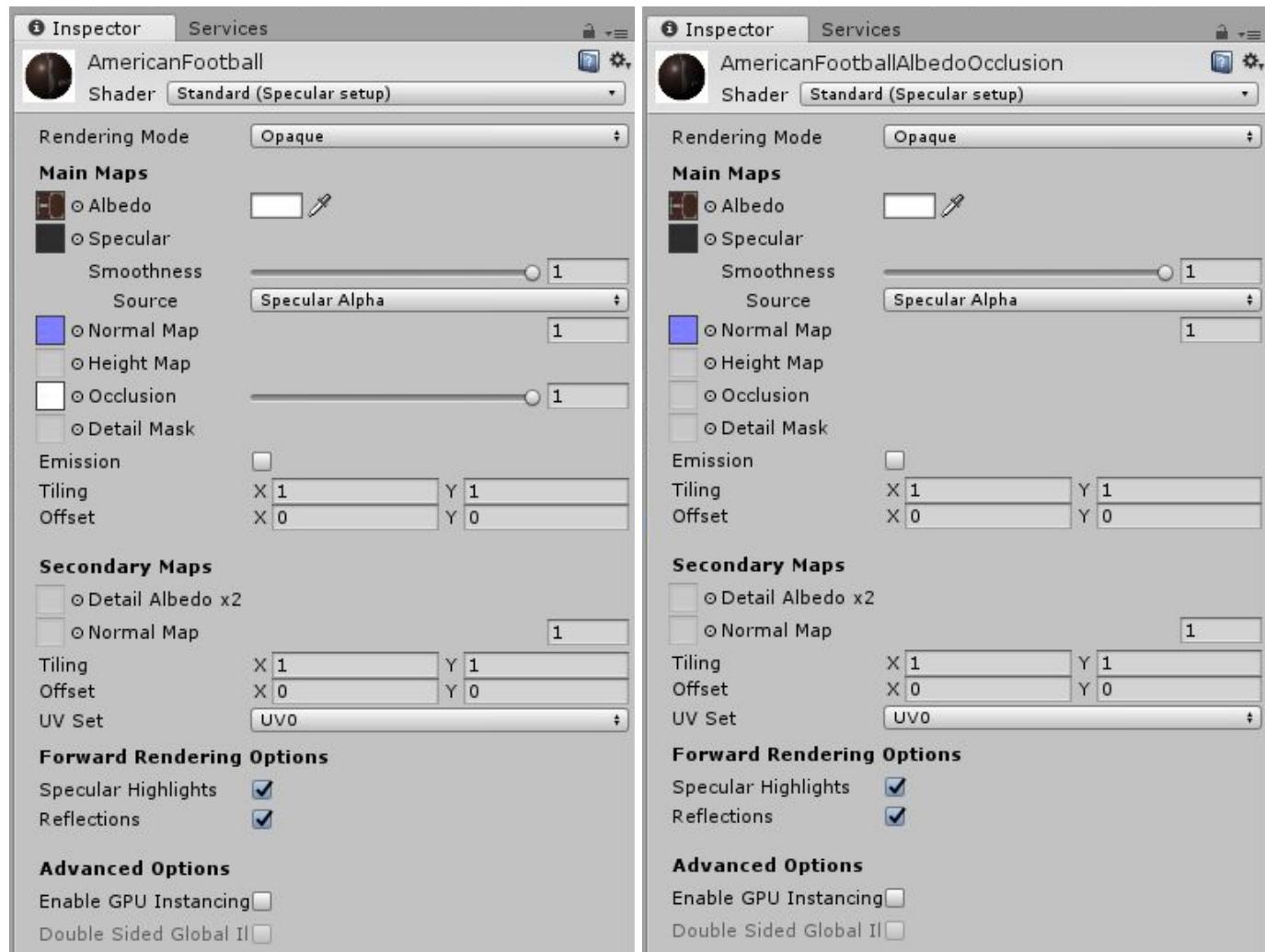
Volleyball2Dirt1

Volleyball2Dirt2

Volleyball2Dirt3



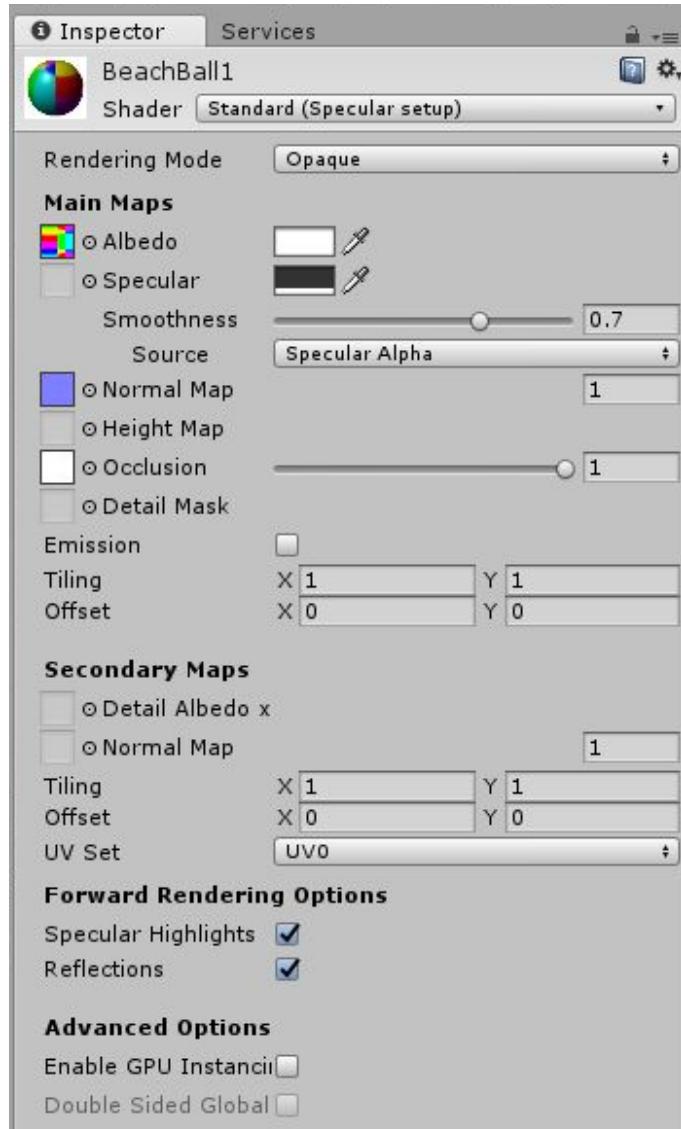
- "ball name(number)"+"AlbedoOcclusion"+("Dirt(1,2,3)") - materials in which Albedo texture is multiplied with Occlusion texture for saving resources, for example, "BeachBall4AlbedoOcclusion", "BeachBall4AlbedoOcclusionDirt1", "AmericanFootballAlbedoOcclusion", "AmericanFootballAlbedoOcclusionDirt3" etc.



Exceptions

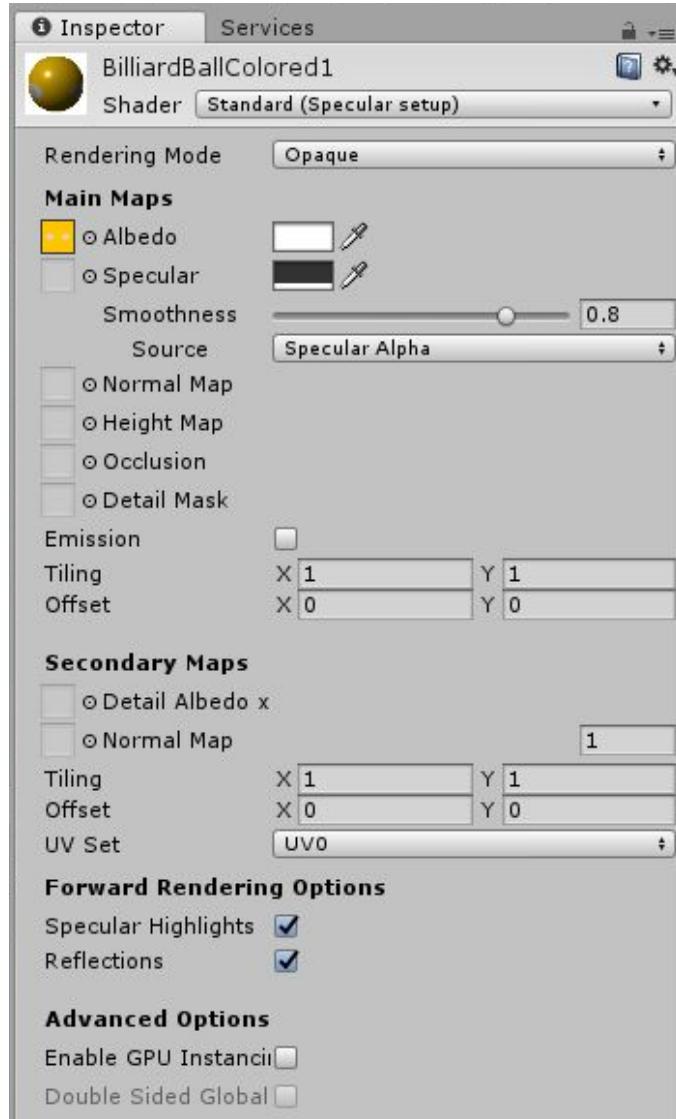
Beach ball

Beach balls (BeachBall(1 - 6), BeachBall(1 - 6)AlbedoOcclusion) do not contain Specular texture, instead, Specular color set to (R = 50, G = 50, B = 50) and Smoothness set to 0.7.



Billiard ball

Billiard balls contain only Albedo texture, Specular color set to (R = 40, G = 40, B = 40) and Smoothness set to 0.8.



Bowling ball

A bowling ball has separate materials for each LOD level.

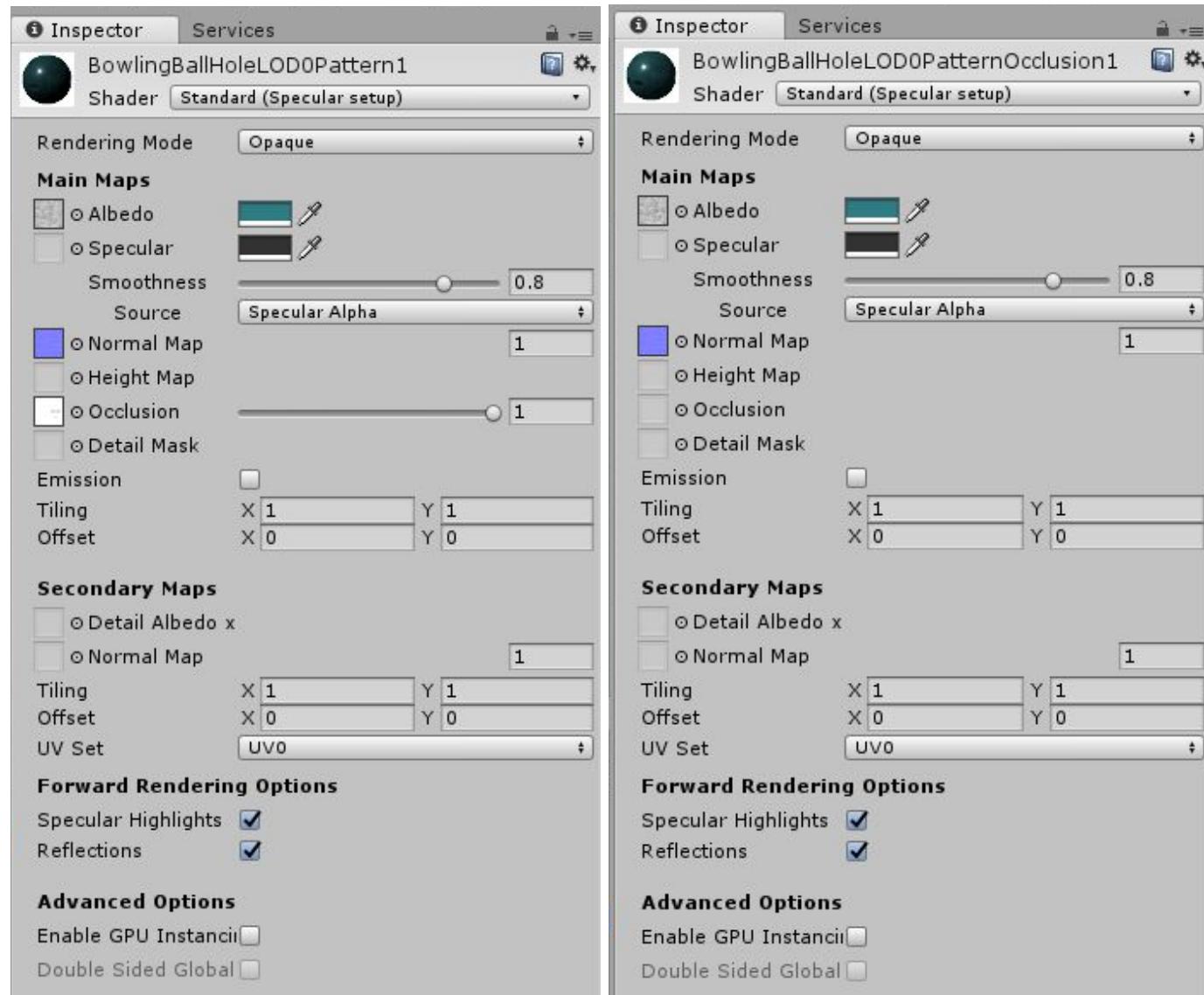
- BowlingBallHoleLOD0Pattern1 - first material for LOD0 (RoundBallWithHoleLOD0)
- BowlingBallHoleLOD0Pattern2 - second material for LOD0 (RoundBallWithHoleLOD0)
- BowlingBallHoleLOD0Pattern3 - third material for LOD0 (RoundBallWithHoleLOD0)

- BowlingBallHoleLOD1Pattern1 - first material for LOD1 (RoundBallWithHoleLOD1)
- BowlingBallHoleLOD1Pattern2 - second material for LOD1 (RoundBallWithHoleLOD1)
- BowlingBallHoleLOD1Pattern3 - third material for LOD1 (RoundBallWithHoleLOD1)

- BowlingBallRoundPattern1 - first material for LOD(0, 1, 2) (RoundBallLOD0, RoundBallLOD1, RoundBallLOD2)
- BowlingBallRoundPattern2 - second material for LOD(0, 1, 2) (RoundBallLOD0, RoundBallLOD1, RoundBallLOD2)

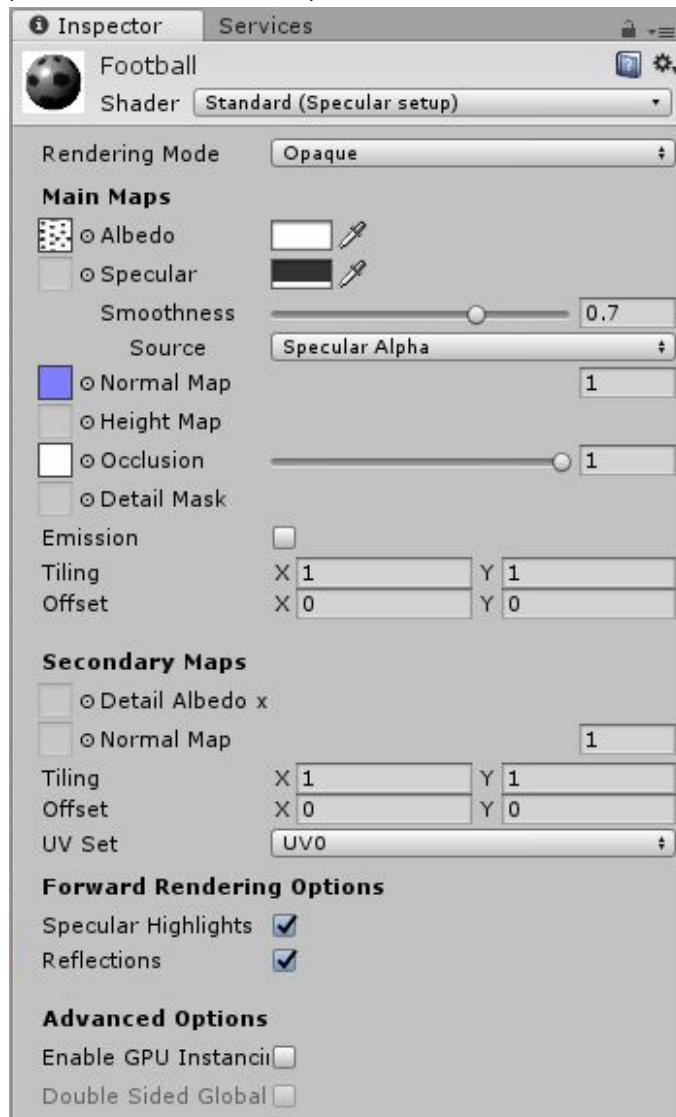
- ❑ BowlingBallRoundPattern3 - third material for LOD(0, 1, 2) (RoundBallLOD0, RoundBallLOD1, RoundBallLOD2)

In materials with a prefix “PatternOcclusion”, for exemple, “BowlingBallHoleLOD0PatternOcclusion1”, “BowlingBallHoleLOD1PatternOcclusion2”, “BowlingBallRoundPatternOcclusion3”, Pattern (Albedo) texture is multiplied with Occlusion texture for saving resources.



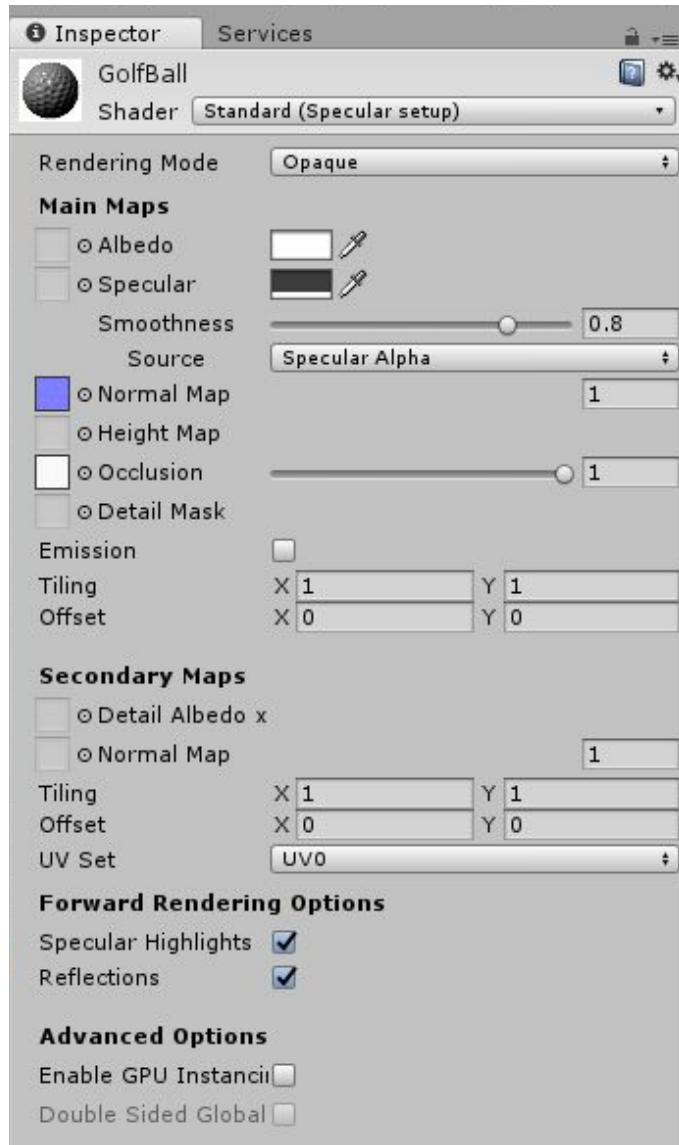
Football

Football balls (Football, FooballAlbedoOcclusion) do not contain Specular texture, instead, Specular color set to (R = 50, G = 50, B = 50) and Smoothness set to 0.7.



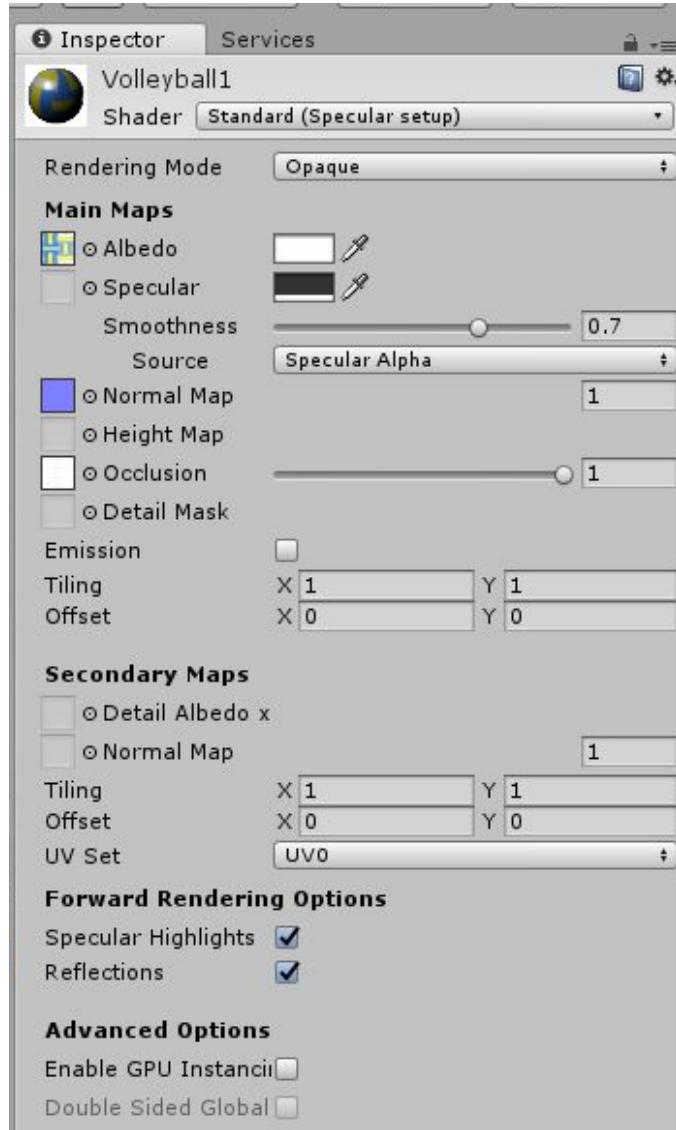
GolfBall

Golf ball (GolfBall) do not contain Albedo and Specular texture, instead, Albedo color set to white (R = 255, G = 255, B = 255), Specular color set to (R = 50, G = 50, B = 50) and Smoothness set to 0.8.



Volleyball

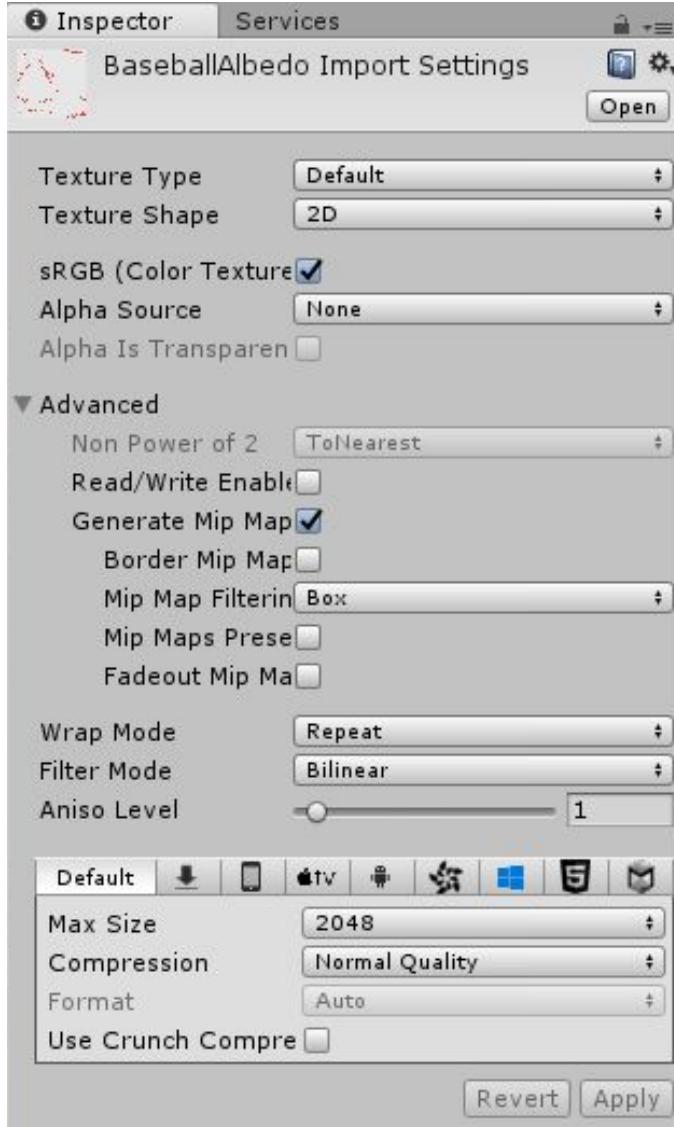
Volleyball balls (Volleyball(1 - 3), Volleyball(1 - 3)AlbedoOcclusion) do not contain Specular texture, instead, Specular color set to (R = 50, G = 50, B = 50) and Smoothness set to 0.7.



Textures

Overview

All textures for balls have resolution 2048 x 2048 px.



Naming rules

- “ball name(number)”+Albedo - Albedo texture, for example, “BaseballAlbedo”, “Basketball1Albedo”, “FootballAlbedo”.
 - “ball name(number)”+Albedo+Dirt(1,2,3) - Albedo texture with dirt, for example, “BaseballAlbedoDirt1”, “Basketball1AlbedoDirt2”, “FootballAlbedoDirt3”.
 - “ball name(number)”+Albedo+Occlusion - Texture where Albedo multiplied with Occlusion, for example, “BaseballAlbedoOcclusion”, “Basketball1AlbedoOcclusion”, “FootballAlbedoOcclusion”.
 - “ball name(number)”+Albedo+Occlusion+Dirt(1,2,3) - Texture where, Albedo with dirt,multiplied with Occlusion, for example, “BaseballAlbedoOcclusionDirt1”, “Basketball1AlbedoOcclusionDirt2”, “FootballAlbedoOcclusionDirt3”.
 - “ball name(number)”+Nor - Normal map texture, for example, “BaseballNor”, “Basketball1Nor”, “FootballNor”, “Volleyball3Nor”.

- "ball name(number)" + Occlusion - Occlusion texture, for example, "BaseballOcclusion", "Basketball1Occlusion", "FootballOcclusion", "Volleyball3Occlusion".
- "ball name(number)" + SpecRoug - Specular(RGB) + Smoothness(A) texture, for example, "BaseballSpecRoug", "Basketball1SpecRoug", "TennisBallSpecRoug".
- "ball name(number)" + SpecRoug + Dirt(1, 2, 3) - Specular(RGB) + Smoothness(A) dirt texture, for example, "BaseballSpecRougDirt1", "Basketball1SpecRougDirt2", "TennisBallSpecRougDirt3".

Exceptions

BeachBall

- BeachBallNor - Normal map texture for BeachBall(1 - 6), BeachBall(1 - 6)Dirt(1, 2, 3) materials.
- BeachBallOcclusion - Occlusion texture for BeachBall(1 - 6), BeachBall(1 - 6)Dirt(1, 2, 3) materials.
- BeachBallSpecRougDirt(1, 2, 3) - Specular(RGB) + Smoothness(A) dirt texture, for BeachBall(1 - 6)Dirt(1, 2, 3) materials.

BilliardBall

- BilliardBallColored(01 - 16) - Albedo textures for BilliardBallColored(01 - 16).
- BilliardBallOneColor(01 - 15) - Albedo textures for BilliardBallOneColor(01 - 15).

BowlingBall

- BowlingBallHoleLOD0Nor - Normal map texture for BowlingBallHoleLOD0Pattern(1, 2, 3), BowlingBallHoleLOD0PatternOcclusion(1, 2, 3) materials.
- BowlingBallHoleLOD0Occlusion - Occlusion texture for BowlingBallHoleLOD0Pattern(1, 2, 3) materials.
- BowlingBallHoleLOD0Pattern(1, 2, 3) - Three textures with different patterns for BowlingBallHoleLOD0Pattern(1, 2, 3) materials, color is selected in albedo color box.
- BowlingBallHoleLOD0PatternOcclusion(1, 2, 3) - Three textures with different patterns which multiplied with BowlingBallHoleLOD0Occlusion texture for BowlingBallHoleLOD0PatternOcclusion(1, 2, 3) materials, color is selected in albedo color box.
- BowlingBallHoleLOD1Nor - Normal map texture for BowlingBallHoleLOD1Pattern(1, 2, 3), BowlingBallHoleLOD1PatternOcclusion(1, 2, 3) materials.
- BowlingBallHoleLOD1Occlusion - Occlusion texture for BowlingBallHoleLOD1Pattern(1, 2, 3) materials.
- BowlingBallHoleLOD1Pattern(1, 2, 3) - Three textures with different patterns for BowlingBallHoleLOD1Pattern(1, 2, 3) materials, color is selected in albedo color box.
- BowlingBallHoleLOD1PatternOcclusion(1, 2, 3) - Three textures with different patterns which multiplied with BowlingBallHoleLOD1Occlusion texture for BowlingBallHoleLOD1PatternOcclusion(1, 2, 3) materials, color is selected in albedo color box.
- BowlingBallRoundNor - Normal map texture for BowlingBallRoundPattern(1, 2, 3), BowlingBallRoundPatternOcclusion(1, 2, 3) materials.
- BowlingBallRoundOcclusion - Occlusion texture for BowlingBallRoundPattern(1, 2, 3) materials.
- BowlingBallRoundPattern(1, 2, 3) - Three textures with different patterns for BowlingBallRoundPattern(1, 2, 3) materials, color is selected in albedo color box.
- BowlingBallRoundPatternOcclusion(1, 2, 3) - Three textures with different patterns which multiplied with BowlingBallRoundOcclusion texture for BowlingBallRoundPatternOcclusion(1, 2, 3) materials, color is selected in albedo color box.
- BowlingBallRoundSpecRoug - Specular(RGB) + Smoothness(A) texture for BowlingBallRoundPattern(1, 2, 3), BowlingBallRoundPatternOcclusion(1, 2, 3) materials.

Troubleshooting

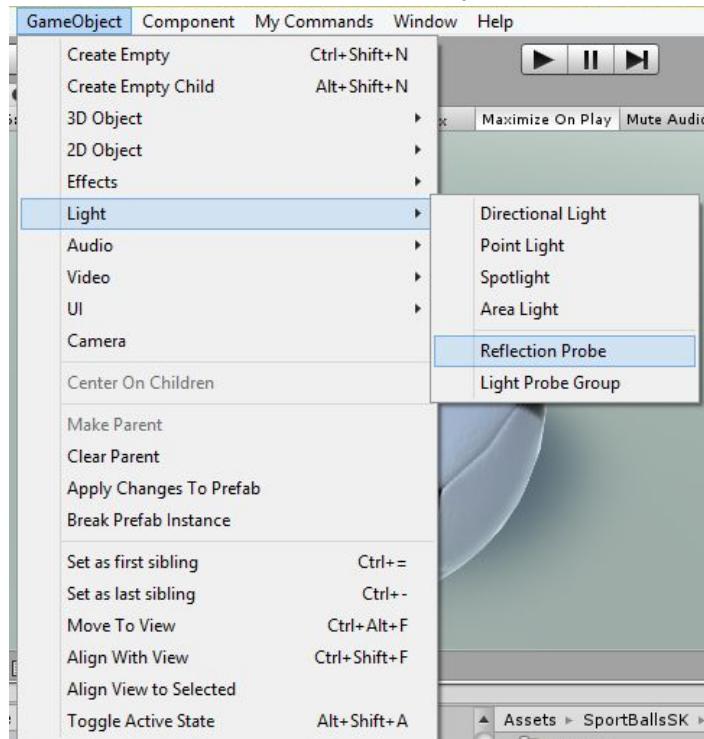
Strange reflection

Normal reflection

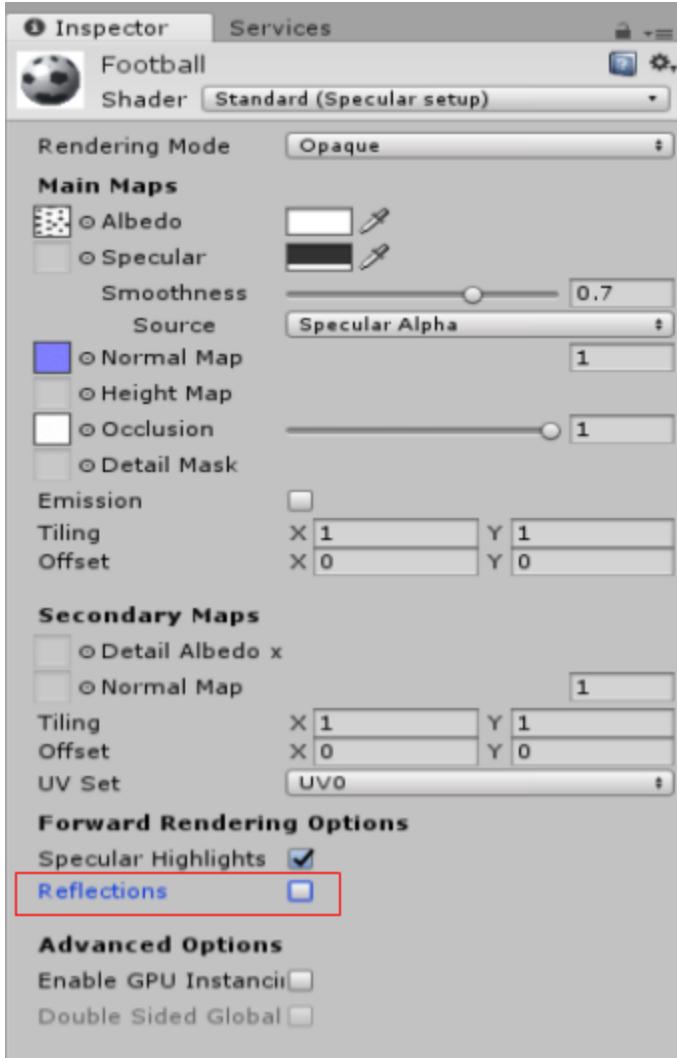
Strange reflection



You must add a reflection probe to your scene.



Or turn off reflections in the material settings.



Contacts

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Url : <https://connect.unity.com/u/59dd041c03b00200179a39f7>