Backgammon
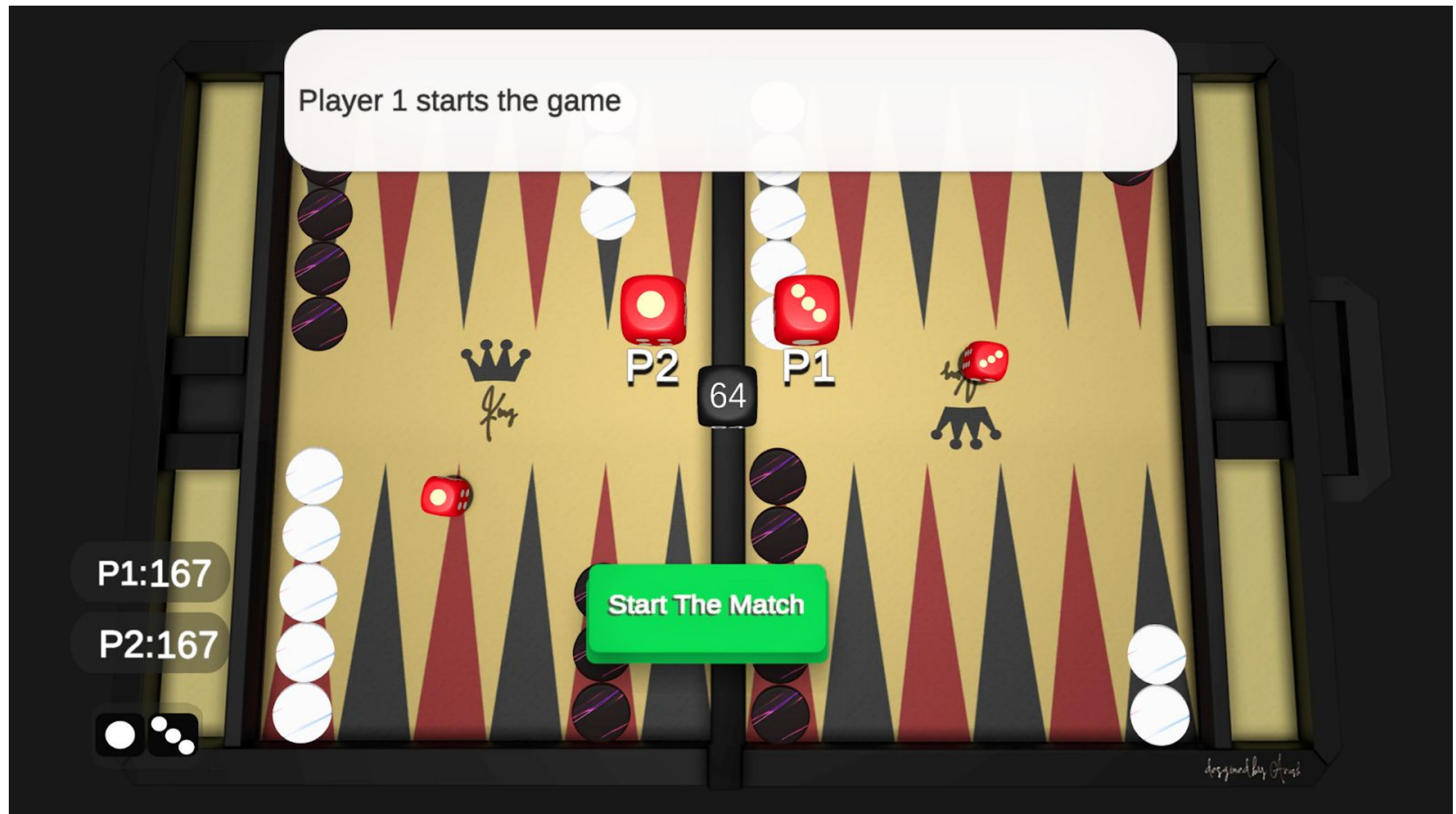
Thank you for purchasing the "**Backgammon**" game which is a complete game with Strong AI.

Content
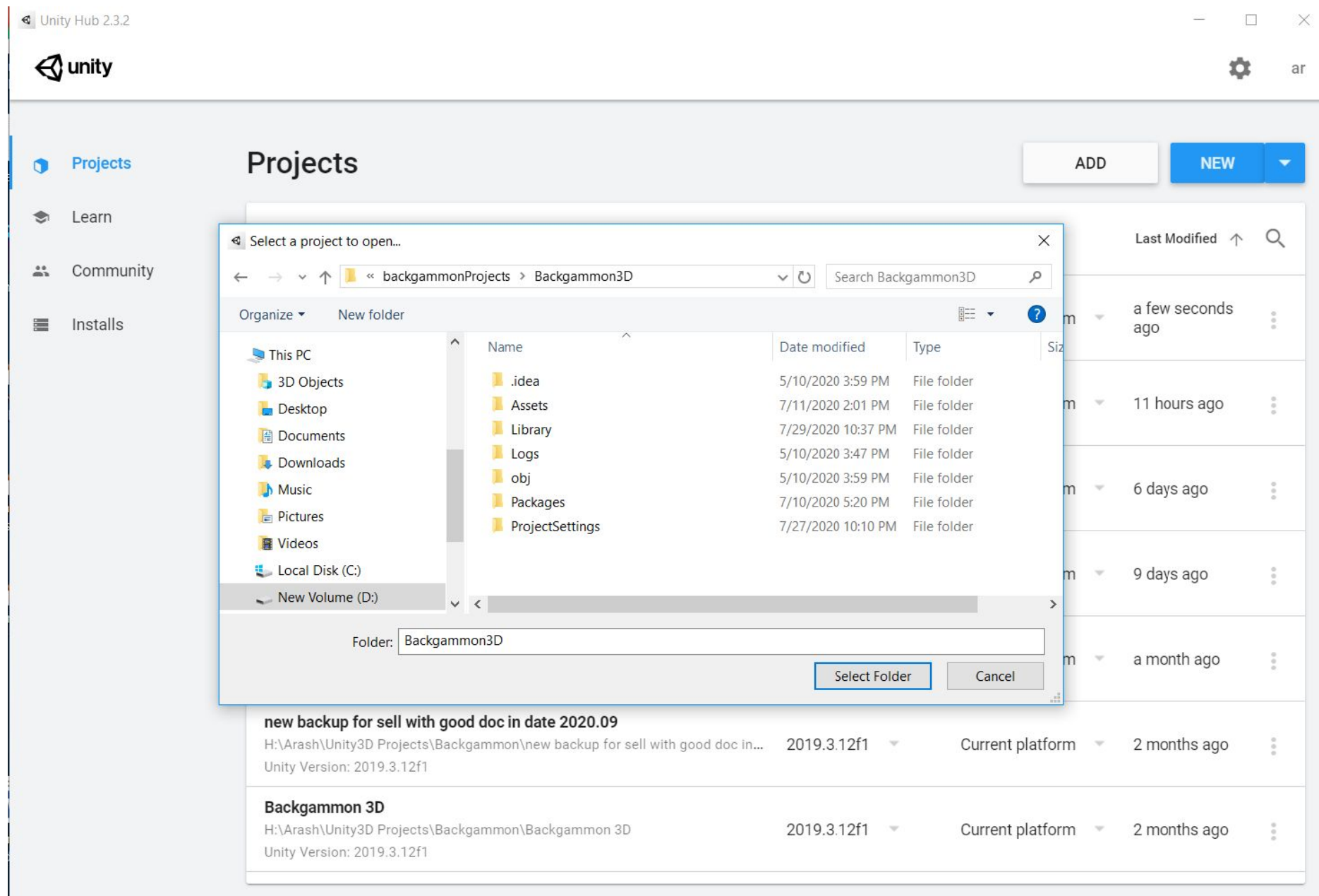
Version History

Version 1.0
- Initial release.

Requirements

Unity 3D version 2019.3.12f1 or higher.

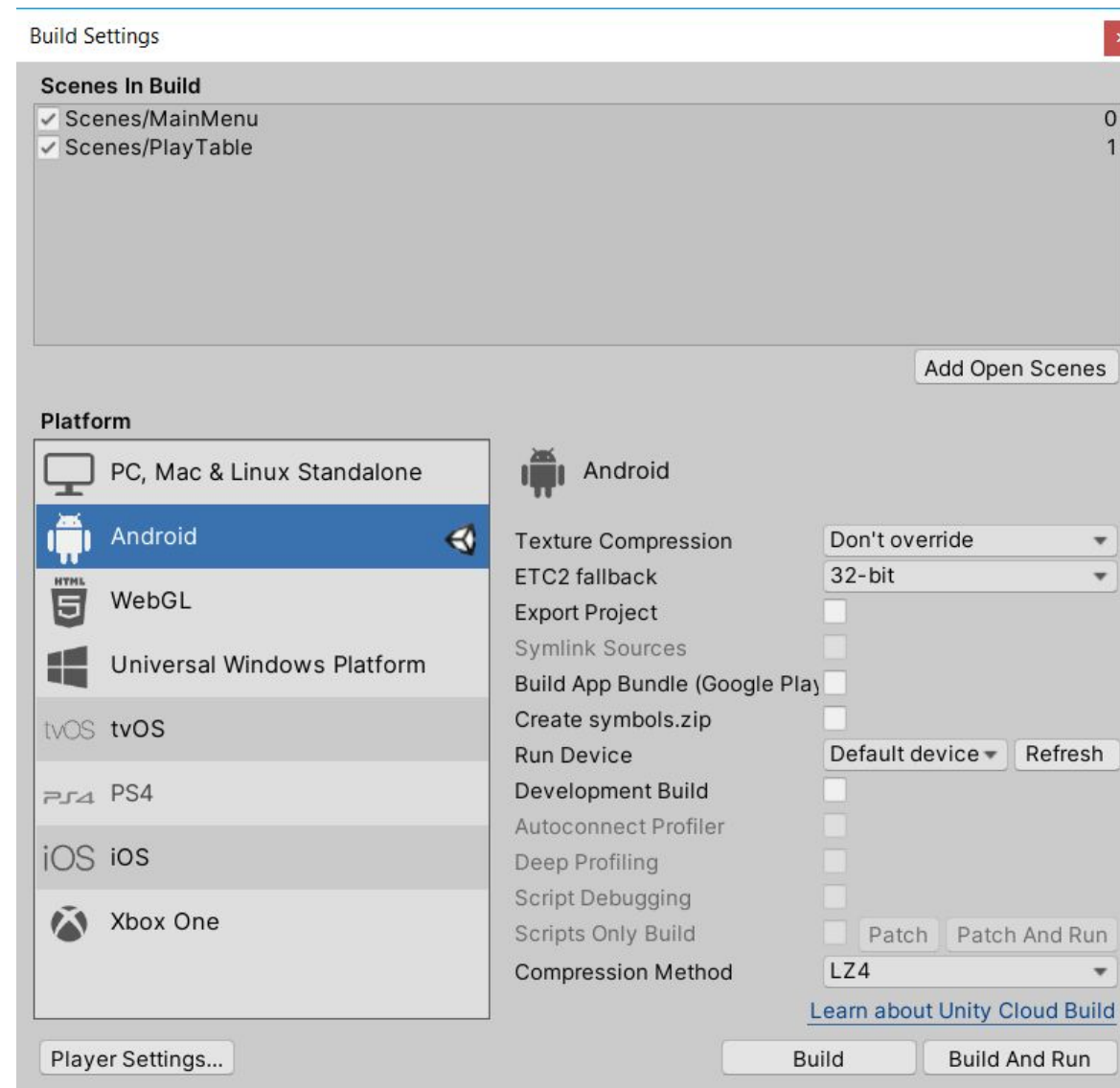# How to Open the Project

Install **Unity Hub** and add the project in Unity Hub like the below image. Then click on the project name to open the project.
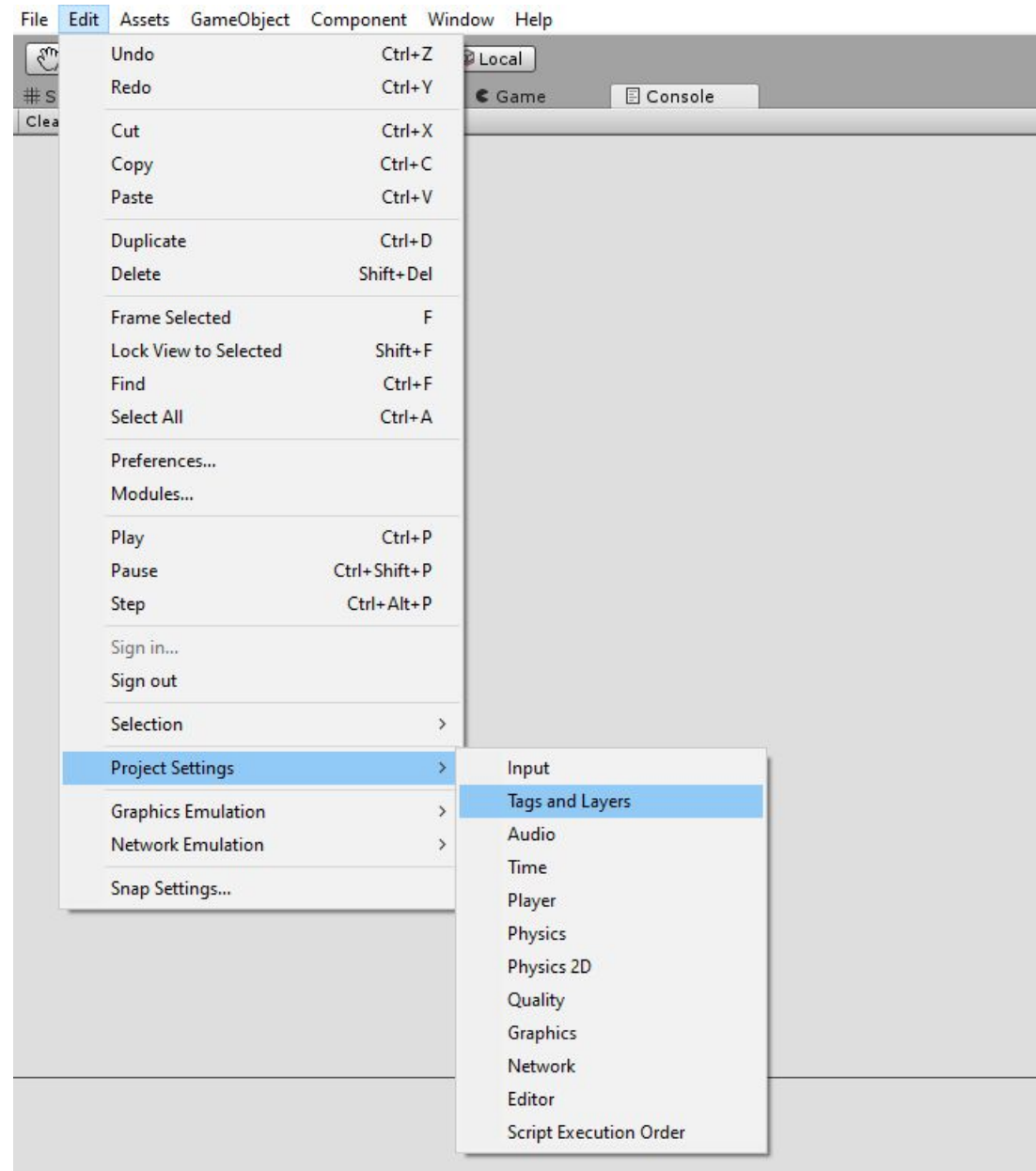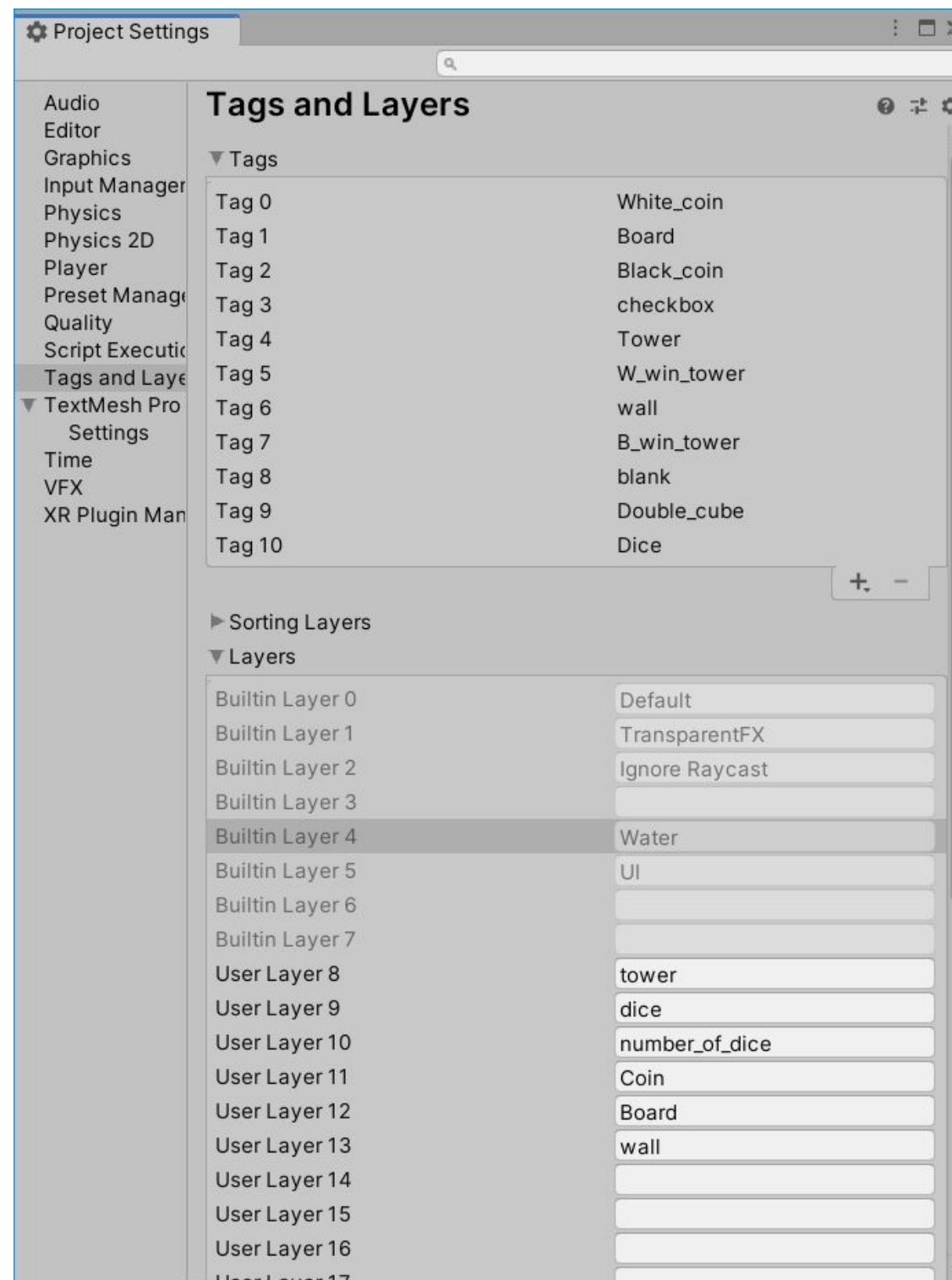
Build Settings

If the scenes are not in build settings, make sure you have added these scenes.
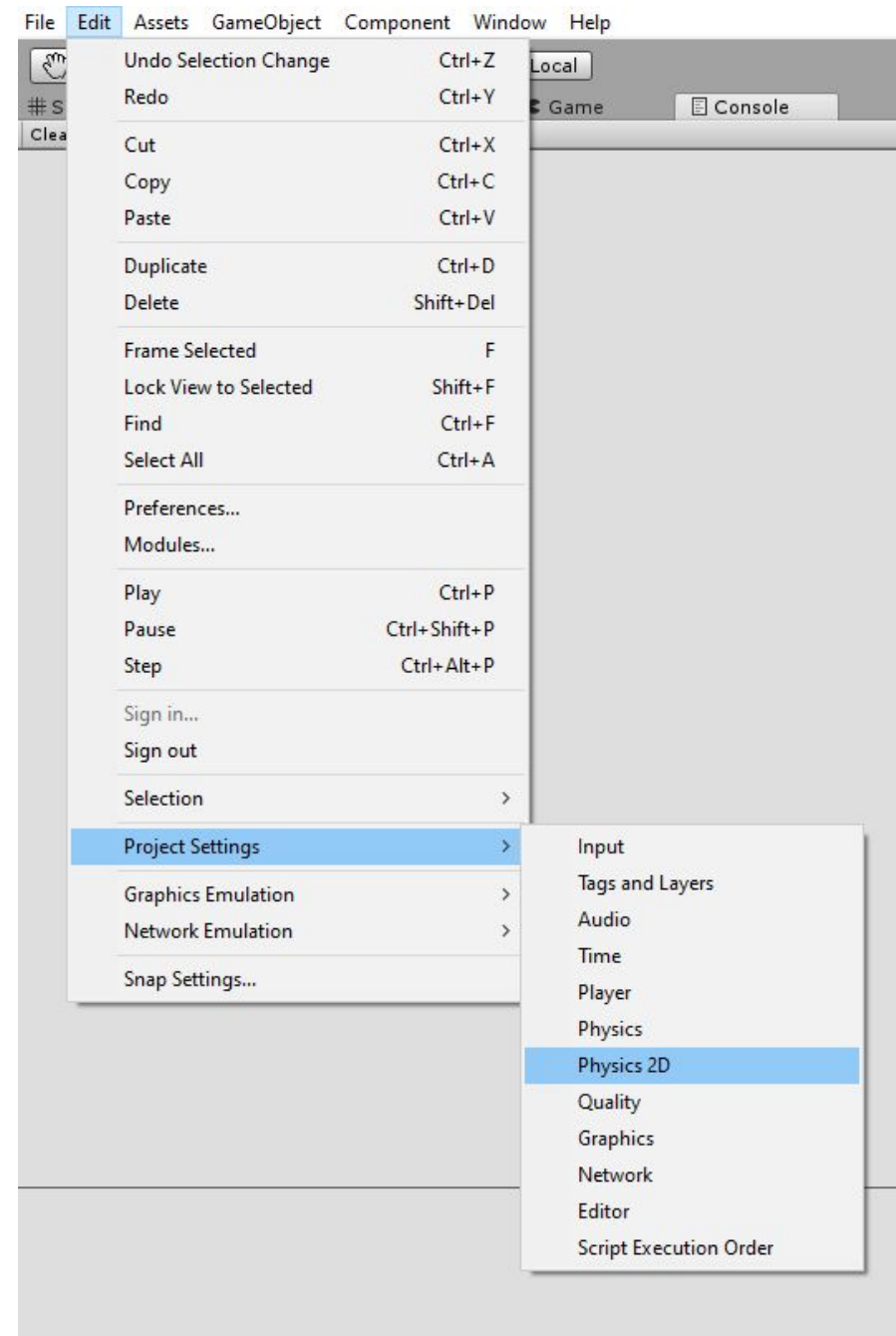
Important Notes

1- Make sure that the tags and layers section in Project Settings is set as shown in the below images.

Tags and Layers

▼ Tags

Tag 0	White_coin
Tag 1	Board
Tag 2	Black_coin
Tag 3	checkbox
Tag 4	Tower
Tag 5	W_win_tower
Tag 6	wall
Tag 7	B_win_tower
Tag 8	blank
Tag 9	Double_cube
Tag 10	Dice

▶ Sorting Layers

▼ Layers

Builtin Layer 0	Default
Builtin Layer 1	TransparentFX
Builtin Layer 2	Ignore Raycast
Builtin Layer 3	
Builtin Layer 4	Water
Builtin Layer 5	UI
Builtin Layer 6	
Builtin Layer 7	
User Layer 8	tower
User Layer 9	dice
User Layer 10	number_of_dice
User Layer 11	Coin
User Layer 12	Board
User Layer 13	wall
User Layer 14	
User Layer 15	
User Layer 16	
User Layer 17	

Project Settings

Audio
Editor
Graphics
Input Manager
Physics
Physics 2D
Player
Preset Manage
Quality
Script Executic
Tags and Laye
▼ TextMesh Pro
   Settings
Time
VFX
XR Plugin Man

2- In Project Settings, Physics 2D configurations should be set like below images.

Project Settings

Physics

Contacts Generation	Persistent Contact Manifold ▾
Auto Simulation	☑
Auto Sync Transforms	☐
Reuse Collision Callbacks	☐
Cloth Gravity	X 0 Y -9.81 Z 0
Contact Pairs Mode	Default Contact Pairs ▾
Broadphase Type	Sweep And Prune Broadphas ▾
World Bounds	

	Center	X 0	Y 0		Z 0	
	Extent	X 250	Y 250		Z 250	

World Subdivisions	8

> How many grid cells to create along X and Z axis. Effective only with the Multi-box pruning broadphase. [1, 16].

Solver Type	Projected Gauss Seidel ▾
Default Max Angular Speed	7

▼ Layer Collision Matrix

	Default	TransparentFX	Ignore Raycast	Water	UI	tower	dice	number_of_dice	Coin	Board	wall
Default	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
TransparentFX	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	
Ignore Raycast	☑	☑	☑	☑	☑	☐	☑	☐	☑		
Water	☑	☑	☑	☑	☑	☑	☑	☑			
UI	☑	☑	☑	☑	☑	☑	☑				
tower	☐	☑	☑	☐	☐	☑					
dice	☑	☑	☐	☐	☑						
number_of_dice	☐	☐	☐	☐							
Coin	☐	☐	☑								
Board	☑	☑									
wall	☑										

Cloth Inter-Collision	☐

Sidebar

Audio
Editor
Graphics
Input Manager
Physics
Physics 2D
Player
Preset Manage
Quality
Script Executic
Tags and Laye
▼ TextMesh Pro
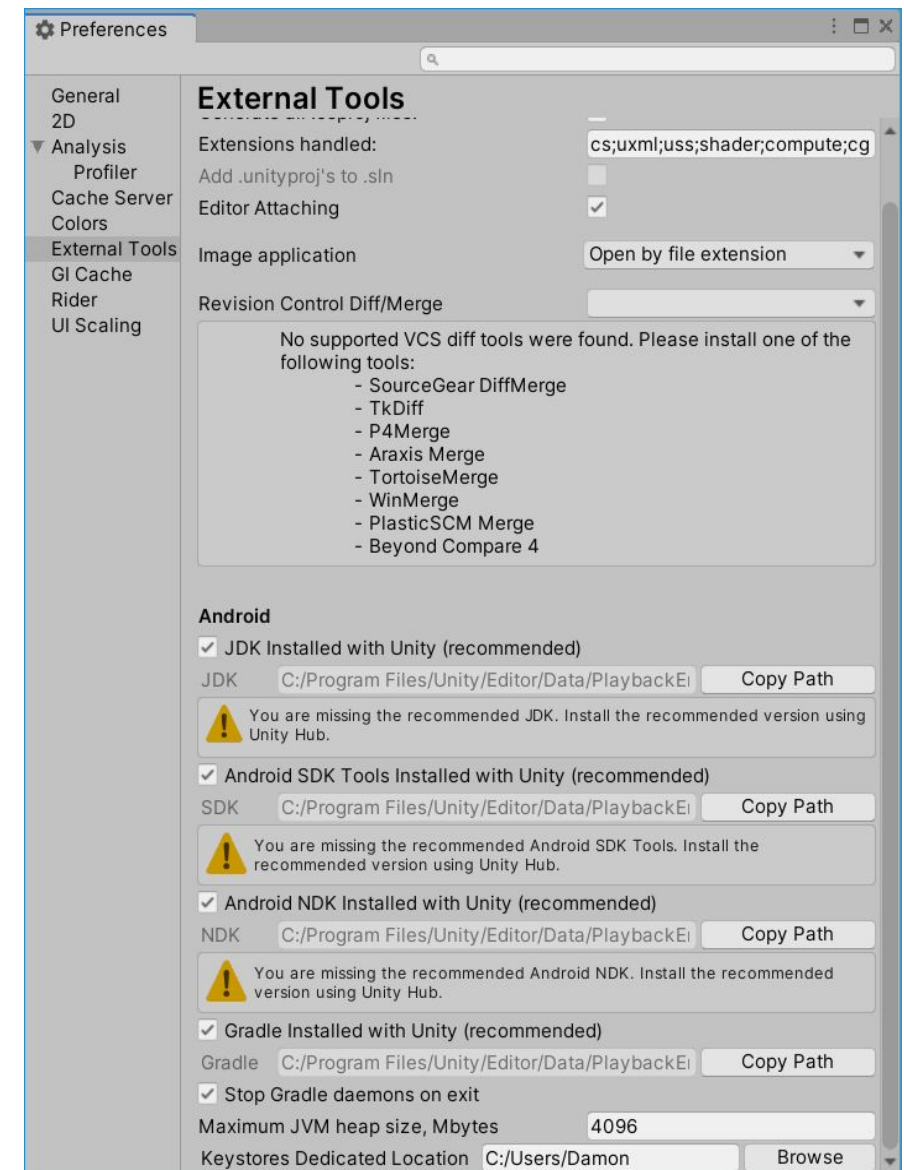 Settings
Time
VFX
XR Plugin Man

How to Export

Prerequisites

Android and Java SDK

Like the below image, click on Preferences from the Edit menu in Unity so that Unity Preferences window is shown and then enter the installation folder address of Android SDK, Java SDK and NDK in their places (you need to have Android SDK and Java SDK installed on your system beforehand).
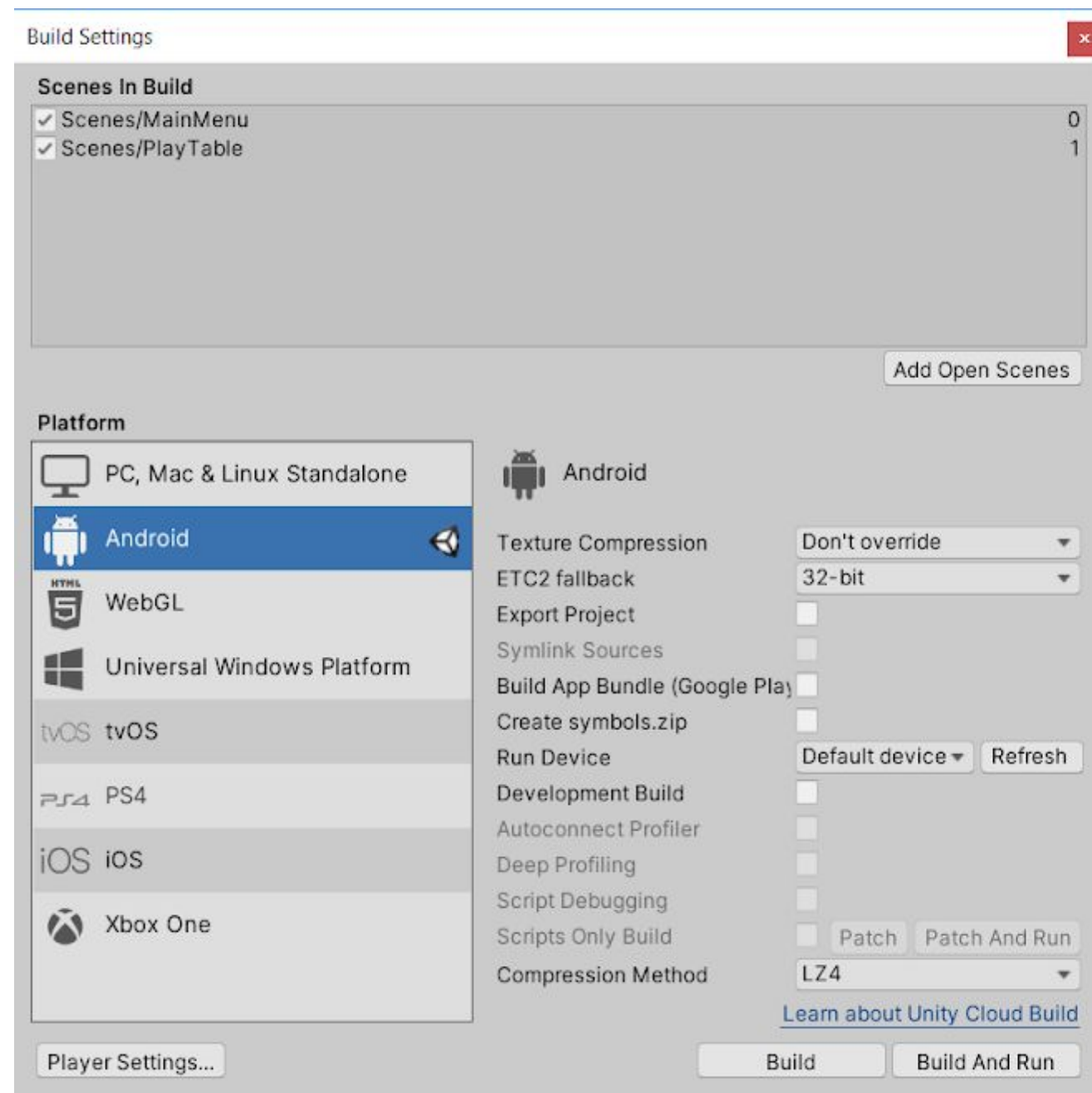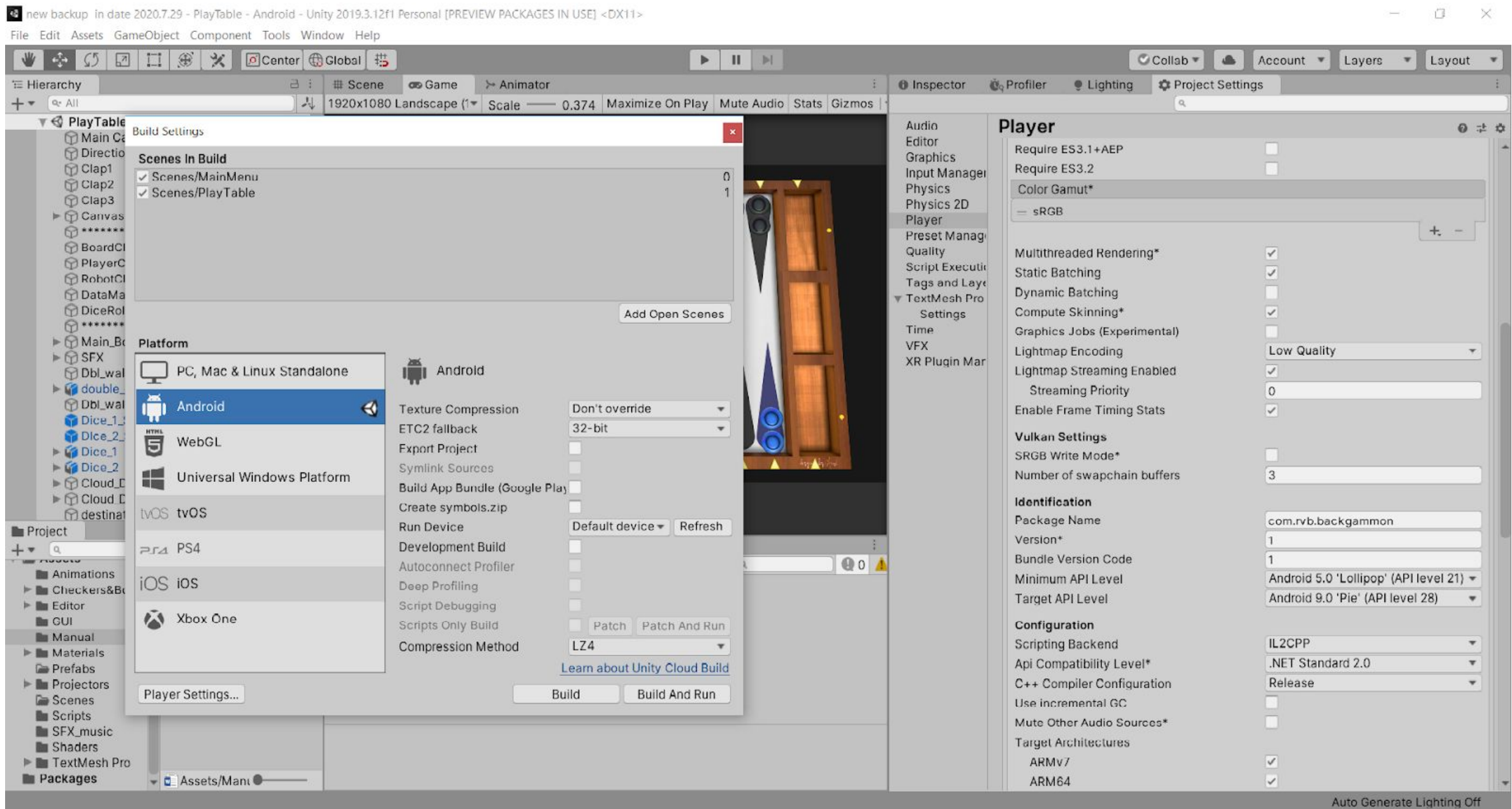
Export to Android

After the project is opened, click on Build Settings in the File menu like the below image.
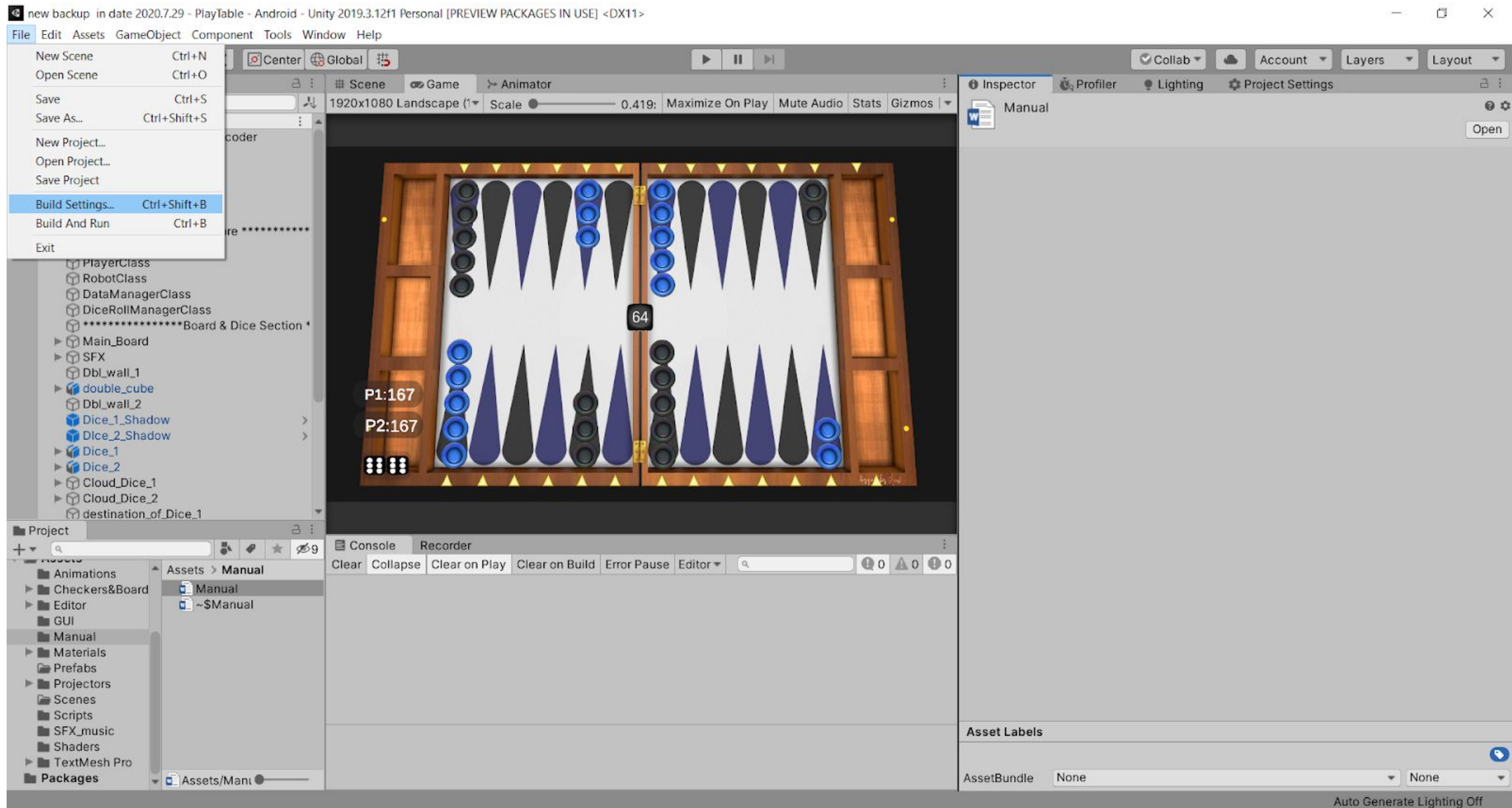
Then in the newly opened window, click on Android platform and then on Player settings.

Then like the below image, select the desired name for the game and its package name in the Inspector section (if you like).

And finally, you have to sign the exported version with your keystore like the below image and then click on the Build button so that Unity starts making the exported version for Android.
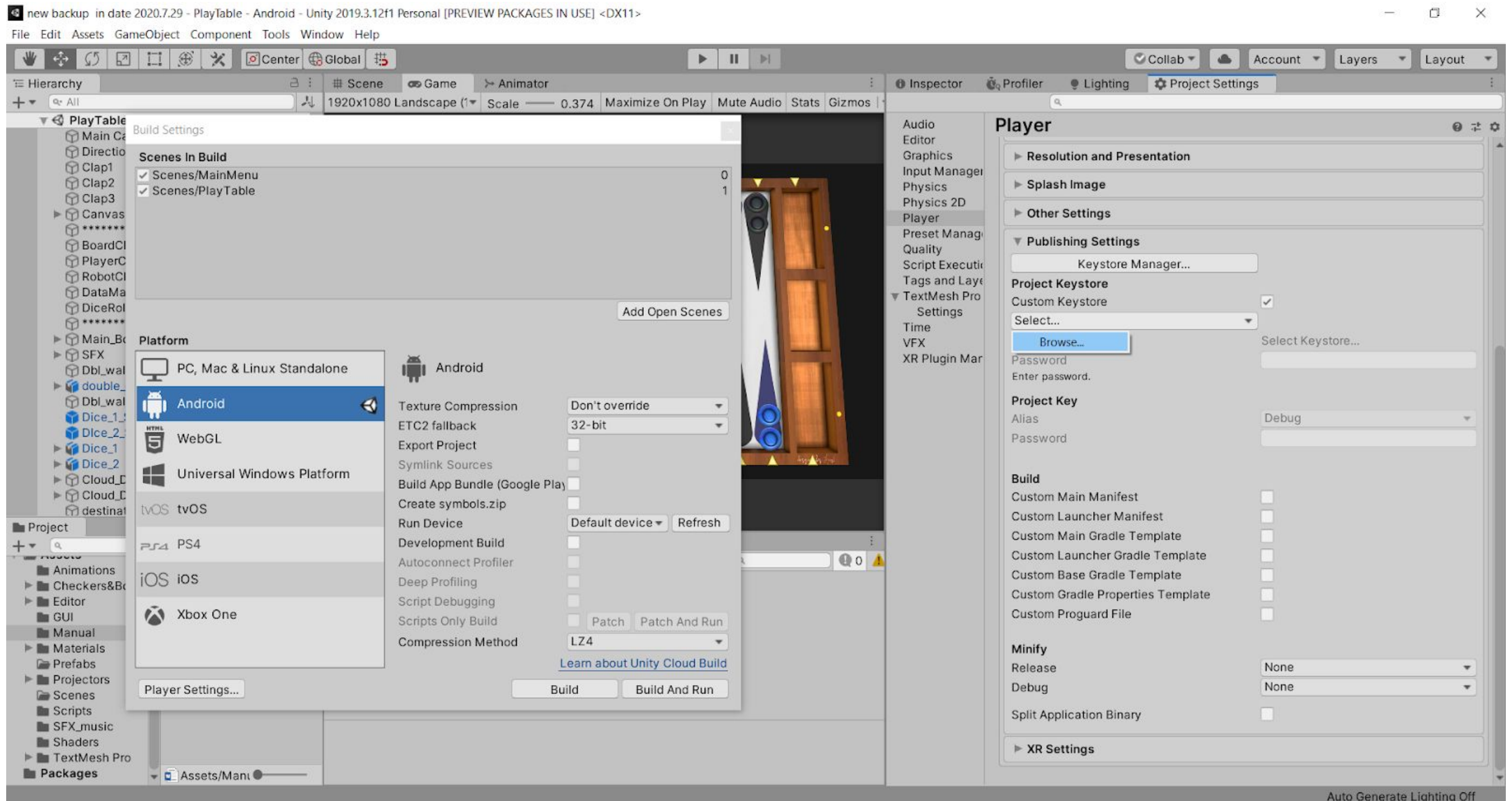
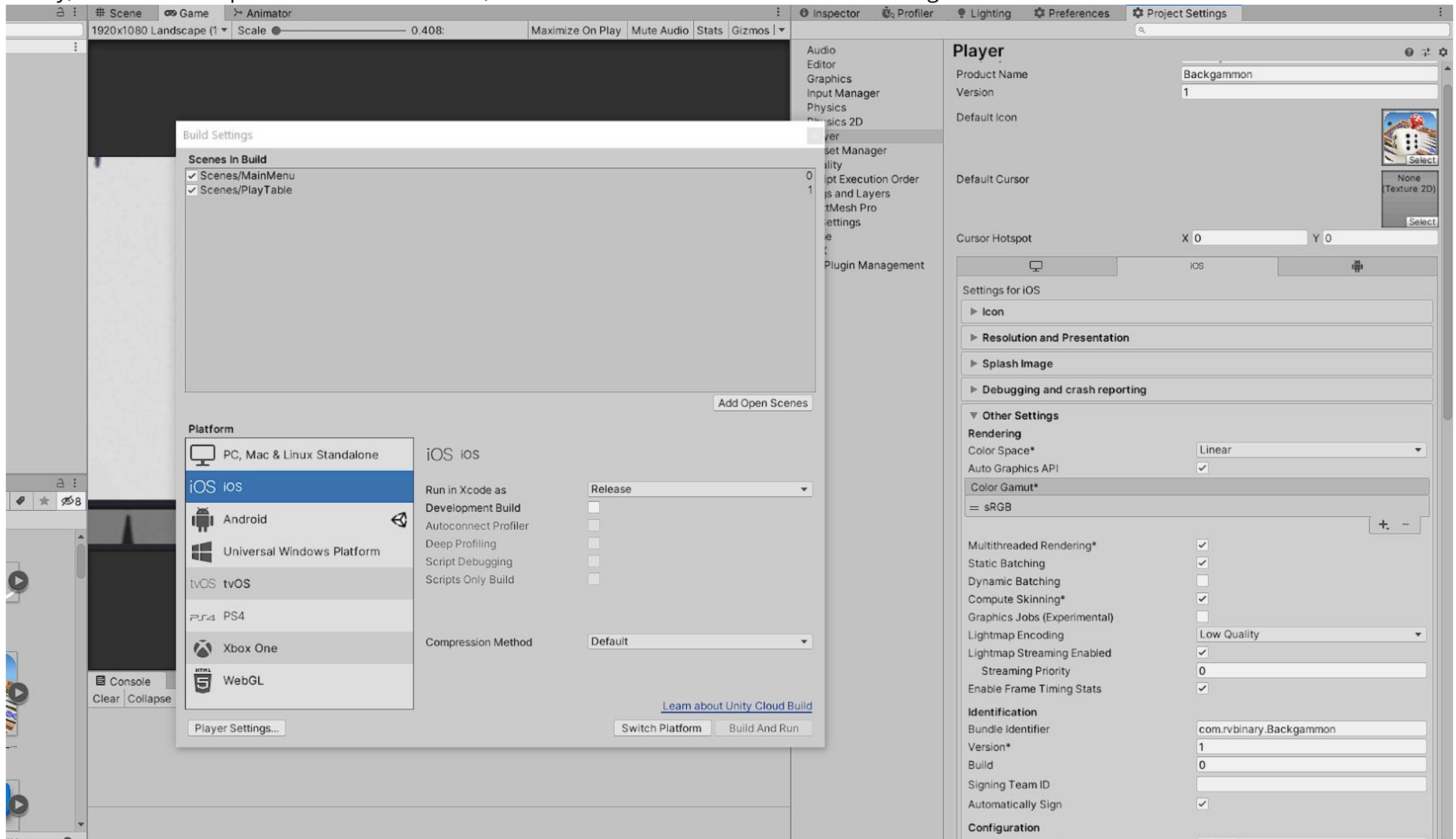Here is a guide from Unity website about making Android version:
https://learn.unity.com/tutorial/how-to-publish-to-android

Export for XCode (iOS)

Click on Build Settings from the File menu in Unity.
In the newly opened window, first click on iOS and then Switch Platform button like the below image.
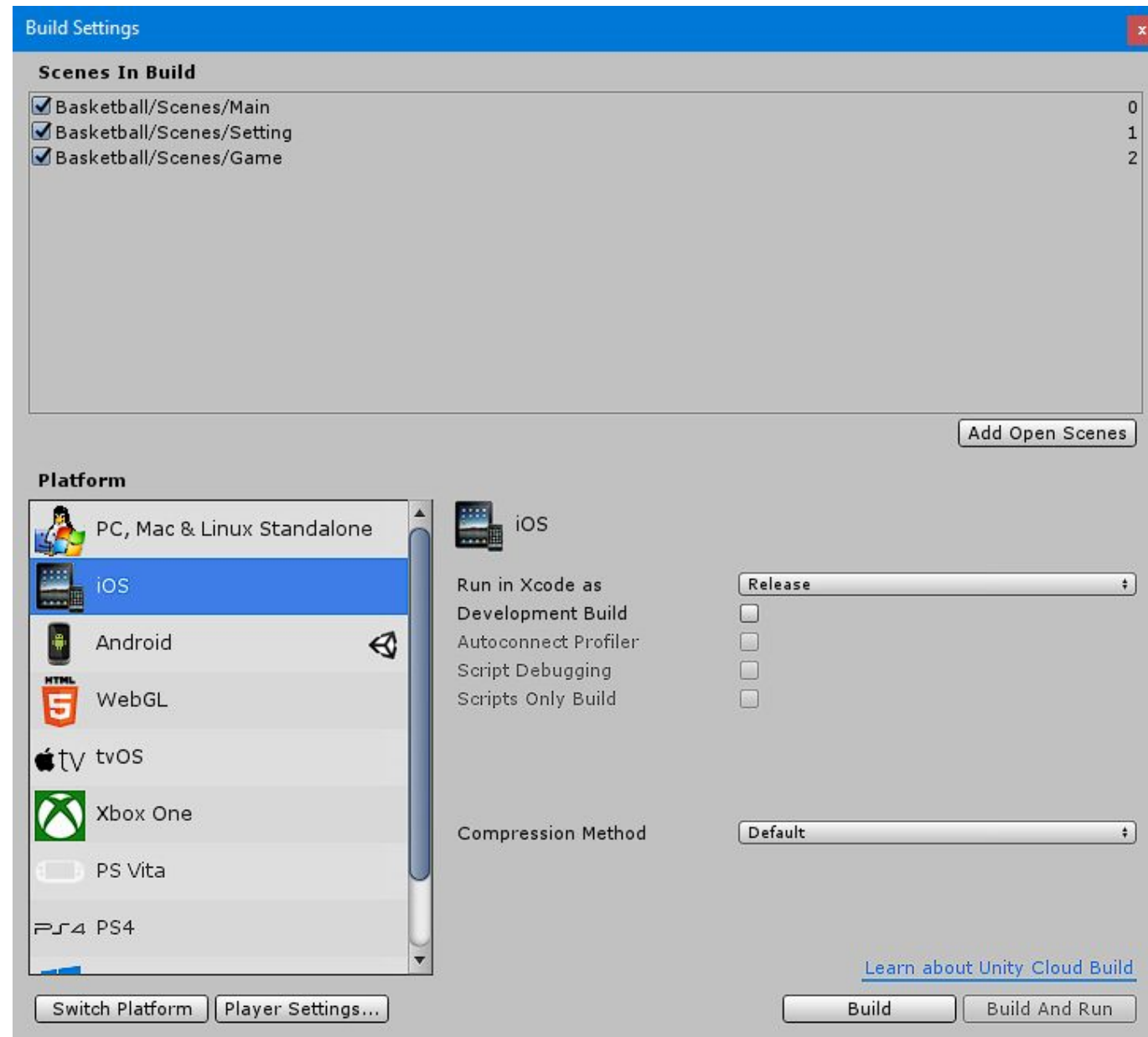
Then click on Player Settings so that you can edit the name, bundle name and version in the Inspector section like the above image.
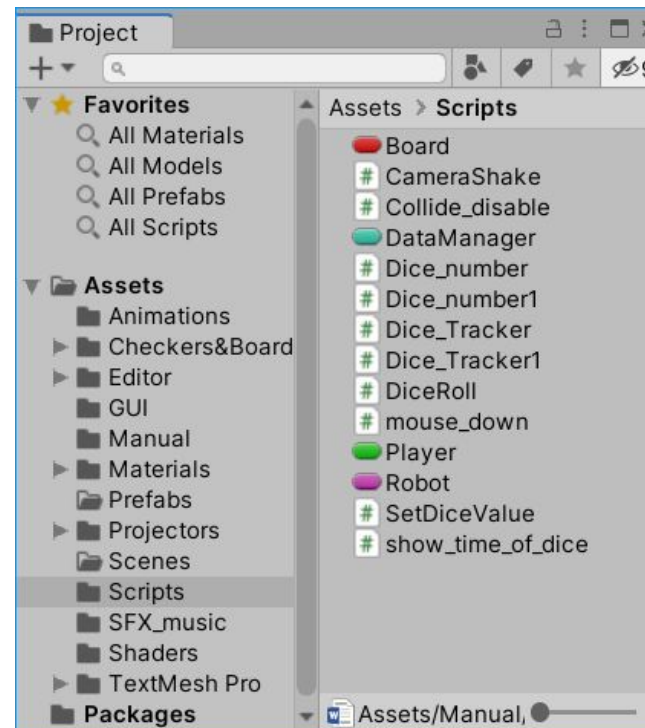
Finally, to make the exported version for XCode, click on the Build button in the Build Setting window.

And here is a guide for making Android and iOS versions from the Unity website that you can read to get some extra details and information:
https://learn.unity.com/tutorial/building-for-mobile

Scripts

All scripts are under the Scripts folder.

Player Class: Manages all processes of selecting coins and tower and transfers coins to the right.

Board Class: Manages all processes of installing the coins on the board, flash legal coins for selection and showing the right towers for player.

Robot Class: Manages the backgammon as a bot. Backgammon will be able to calculate the right move and rolling the dice to decide to offer double or take/pass it.

DataManager Class: Manages all process of saving and loading data of game, menu, settings of the game and button events.

Diceroll Class: Manages all processes of dice physics such as rolling, throwing and tracking the values of dices.

show_time_of_dice Class: Brings the dice to the scene and specifies who should start the game by showing messages to players.

Camershake Class: Shakes the camera when burns the checker.

Collide_disable Class: Disables the collider of middle wall so you could make the dices just roll on the board.

Dice_tracker Classes: Tracks the dice number when they roll.

Mouse_down Class: Makes towers disabled and cleans labels that show number of checkers in a tower.

setDiceValue Class: You could specify what number should take a side of dice.
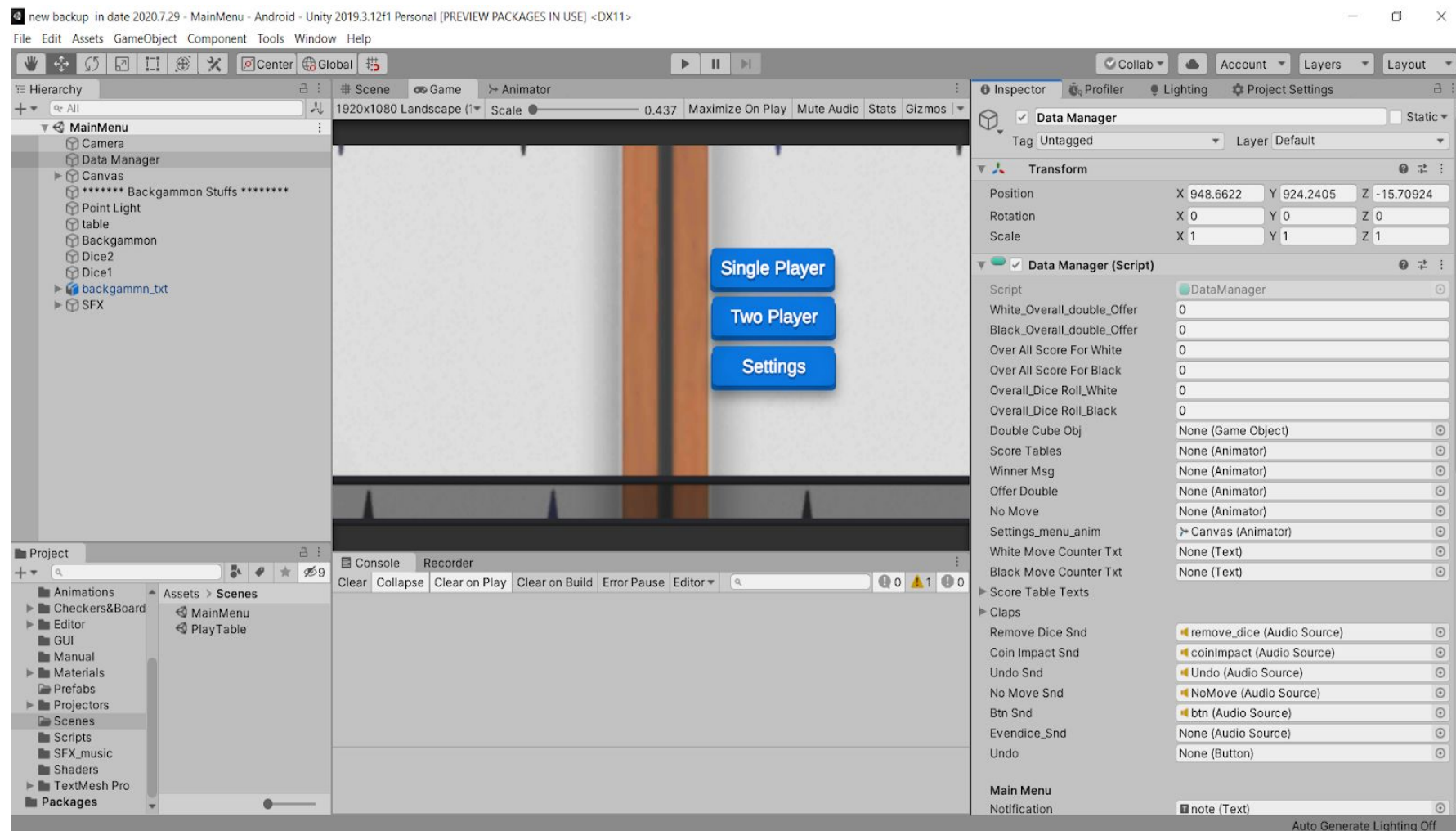
For more details about how scripts work, please check the scripts directly or feel free to email us if you need help.
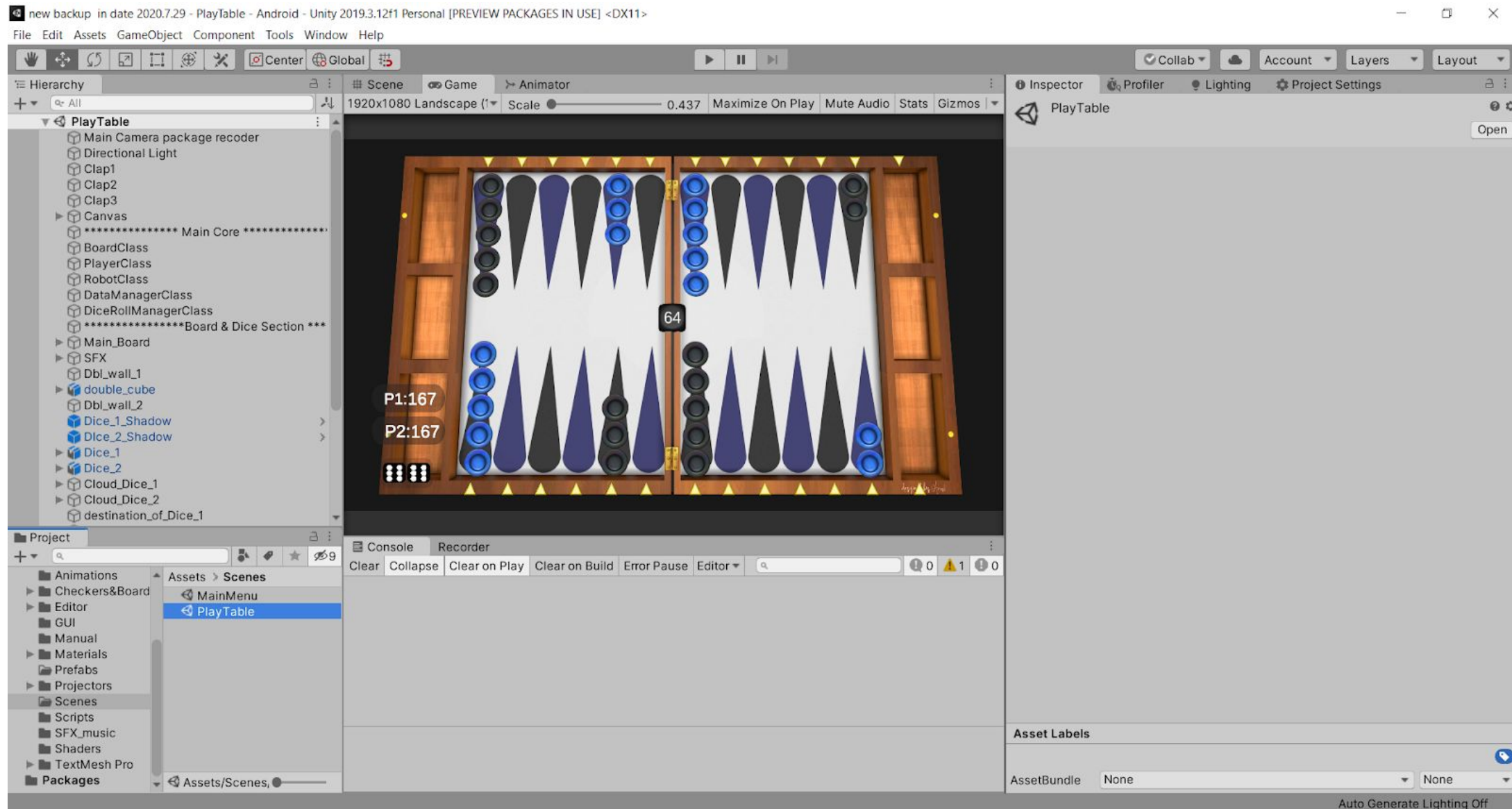
Scenes

- [Main Menu](#)
- [Play Table](#)

Main Menu (Scene)

This is the scene that player selects single player or two players or change the settings of the game.
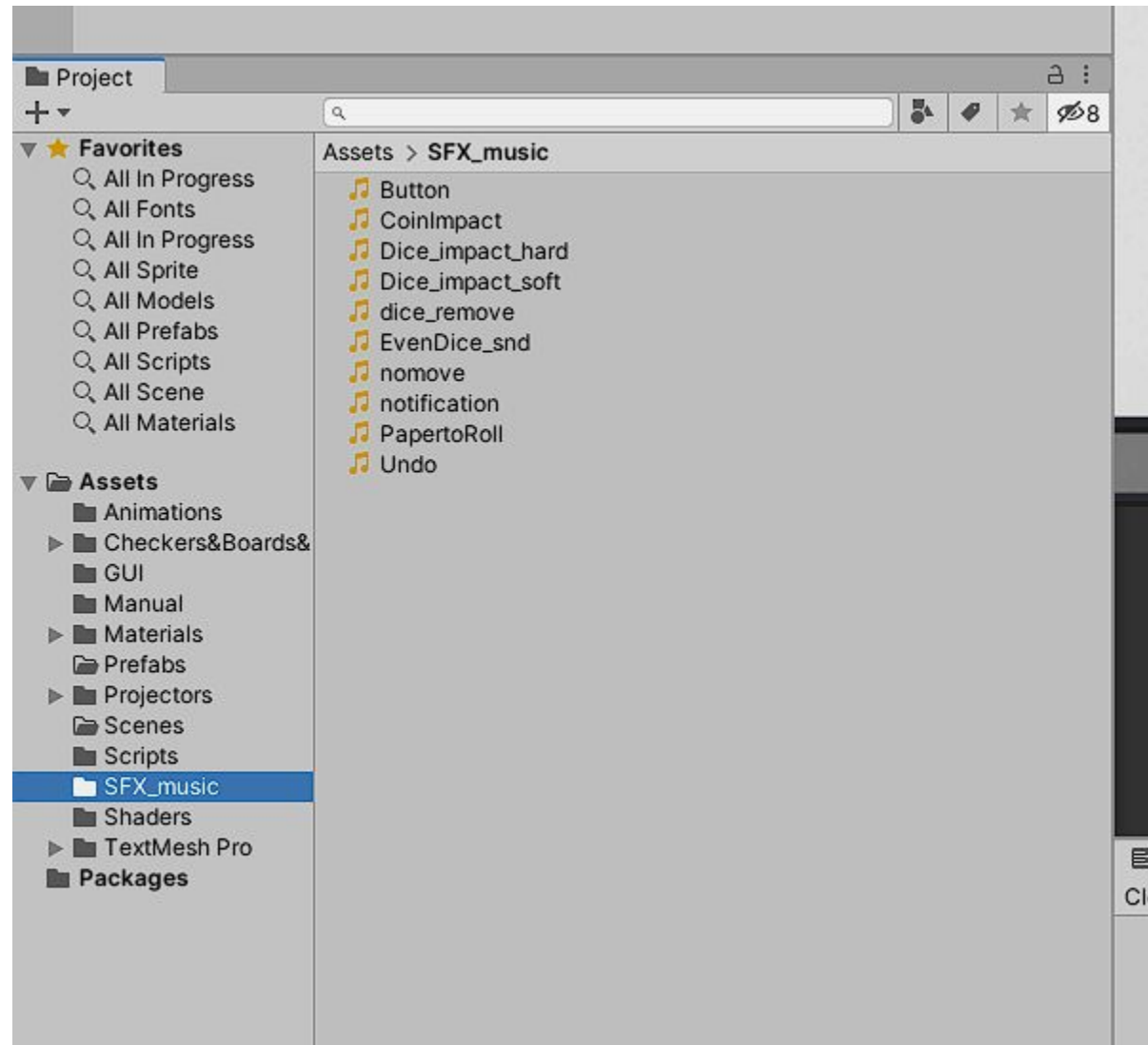
Play Table (Scene)

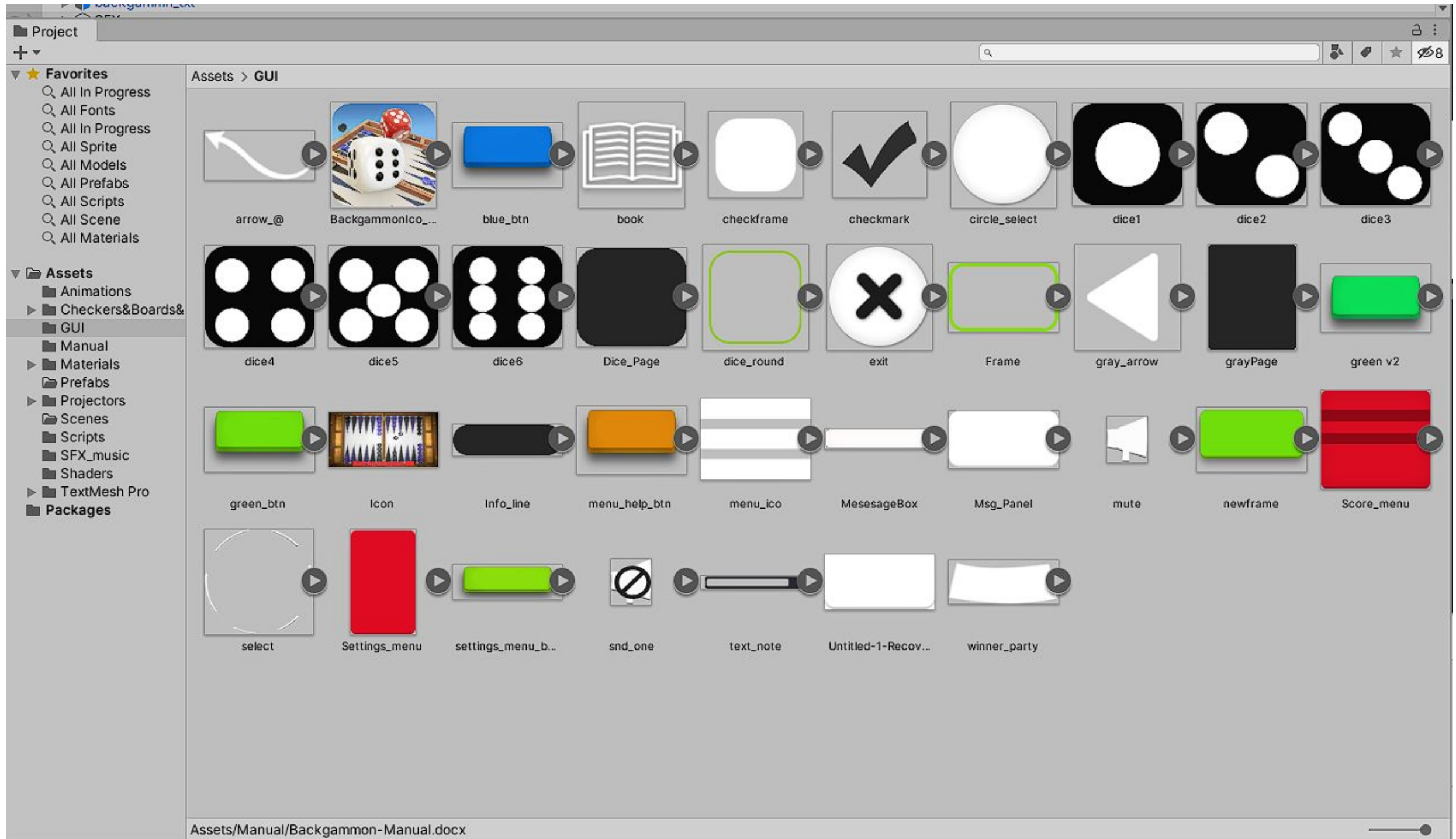This is the scene that players are able to play the backgammon in it.

Music and FXs

You can find all sounds in the SFX_music folder and you can replace them with your own assets.

How to Reskin

All of the images that are used in the game are in the Sprites folder. You can replace the default images with the new ones that you want.

Assets/Manual/Backgammon-Manual.docx

Important Note: For changing the game's default images, new images should have the same size and name as default ones.