

Vytvoření pluginu, programování v C++ v UE

- co to je plugin
- nastavení projektu a prostředí
- ukázka vytvoření prázdného pluginu
- ukázka kmitajících kuliček (vzorkování sinu)
- ukázka staženého pluginu (github)



Select or Create New Project

Recent Projects



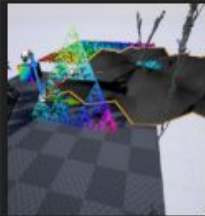
MyProject



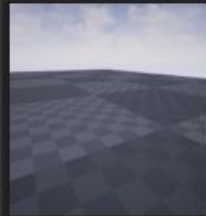
MyProject2



MyProject2



ProceduralMeshDemos



cviceniOS



MyProject



EmptyProject



EmptyProject

[More](#)

New Project Categories



Games

Start your game development journey with one of our key classes, levels, and examples.

Games

Start your game development journey with one of our key classes, levels, and examples.



Film, Television, and Live Events

Choose from templates and examples for nDisplay, VR Scouting, and virtual production workflows.



Architecture, Engineering, and Construction

Select a starting point for multi-user design reviews, photorealistic architectural design visualizations, sunlight studies, or stylized renderings.

















Automotive, Product Design, and Manufacturing

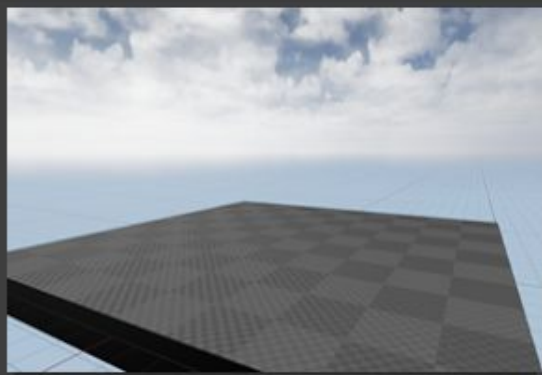
Find templates for multi-user design reviews, photobooth studio environments, and product configurators.

[Next >](#)[Open Project](#)[Cancel](#)



Select Template

- 
Blank
- 
First Person
- 
Flying
- 
Puzzle
- 
Rolling
- 
Third Person
- 
Top Down
- 
Twin Stick Shooter
- 
Handheld AR
- 
Side Scroller
- 
2D Side Scroller
- 
Vehicle
- 
Virtual Reality
- 
Vehicle Advanced



Blank
A clean empty project with no code.



Project Settings



C++

Choose whether to create a Blueprint or C++ project.



Desktop / Console

Choose the closest equivalent target platform. Don't worry, you can change this later in the **Target Hardware** section of **Project Settings**.



Maximum Quality

Choose the performance characteristics of your project.



No Starter Content

Enable to include an additional content pack containing simple placeable meshes with basic materials and textures. You can also add the **Starter Content** to your project later using **Content Browser**.



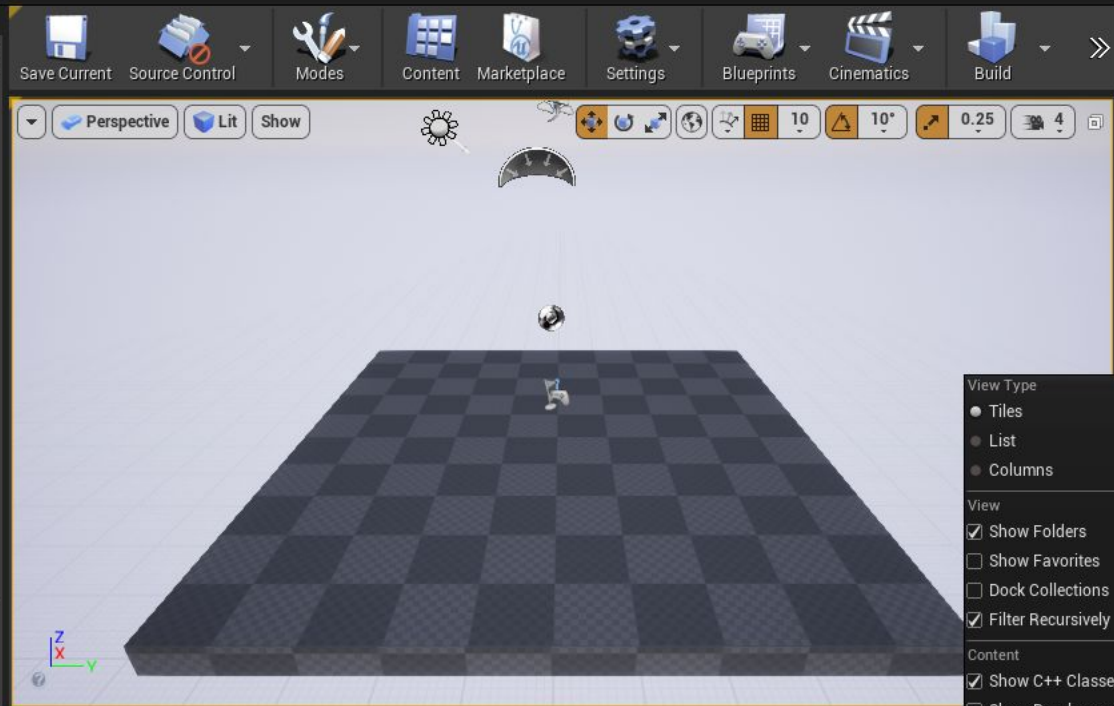
Raytracing Disabled

Choose if real-time raytracing should be enabled in the new project.

Select a **location** for your project to be stored.

Folder

Name



View Type

- Tiles
- List
- Columns

View

- Show Folders
- Show Favorites
- Dock Collections
- Filter Recursively

Content

- Show C++ Classes
- Show Developers Content
- Show Engine Content
- Show Plugin Content
- Show Localized Content

Search

- Search Asset Class Names
- Search Asset Path
- Search Collection Names

Thumbnails

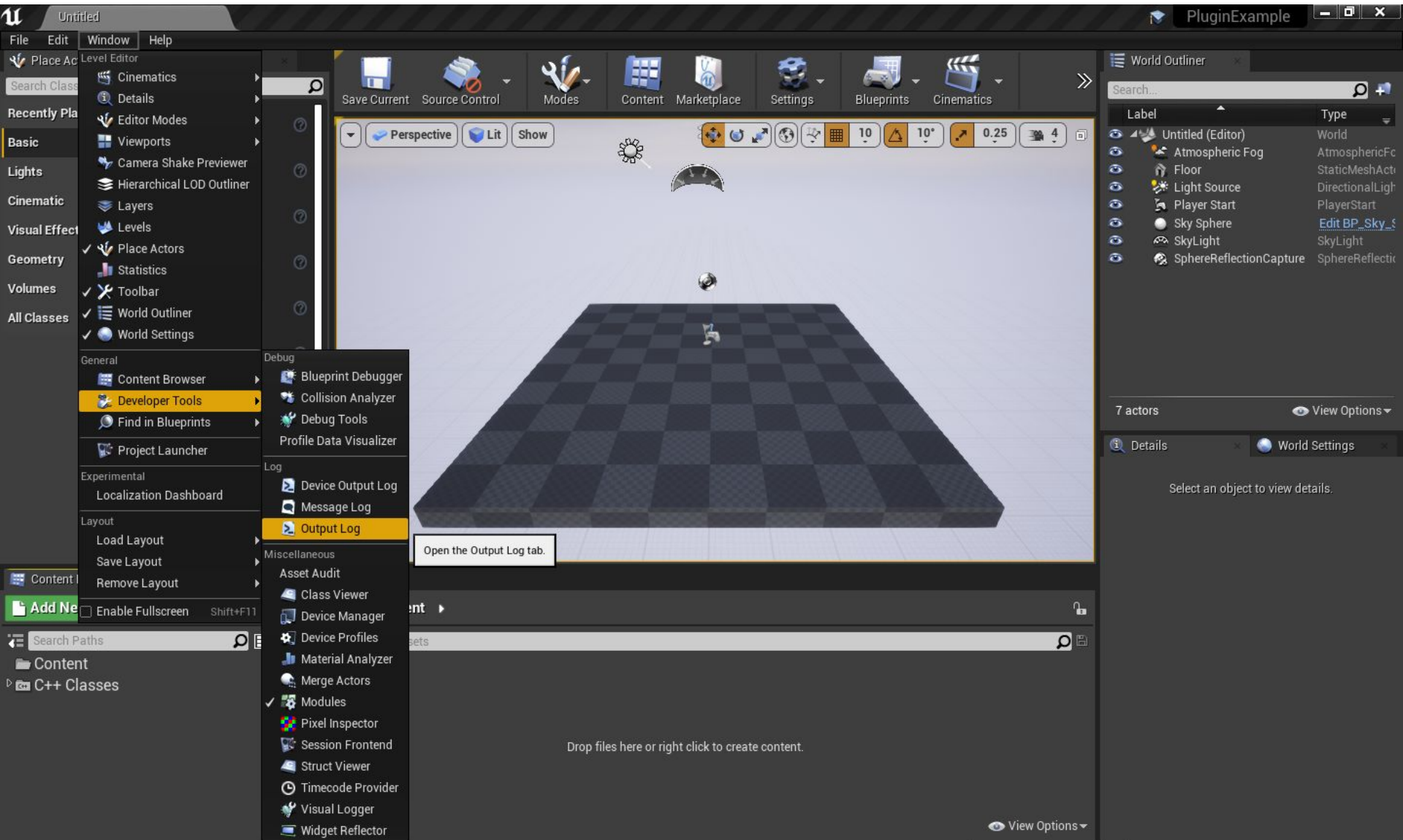
Scale

- Thumbnail Edit Mode
- Real-Time Thumbnails

View Options

Show plugin content in the view?

Select an object to view details.



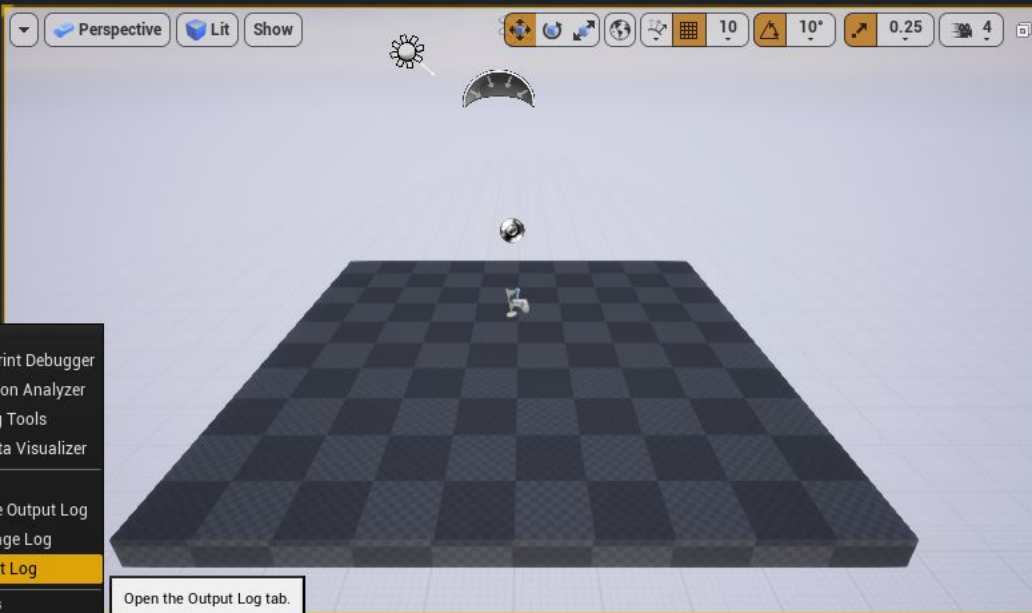
Untitled

PluginExample

File Edit Window Help

- Place Actors
- Cinematics
- Details
- Editor Modes
- Viewports
- Camera Shake Previewer
- Hierarchical LOD Outliner
- Layers
- Levels
- Place Actors
- Statistics
- Toolbar
- World Outliner
- World Settings

Save Current Source Control Modes Content Marketplace Settings Blueprints Cinematics



World Outliner

Search...

Label	Type
Untitled (Editor)	World
Atmospheric Fog	AtmosphericFog
Floor	StaticMeshActor
Light Source	DirectionalLight
Player Start	PlayerStart
Sky Sphere	Edit BP_Sky_Sphere
SkyLight	SkyLight
SphereReflectionCapture	SphereReflectionCapture

7 actors View Options

Details World Settings

Select an object to view details.

View Options

- General
 - Content Browser
 - Developer Tools
 - Find in Blueprints
 - Project Launcher
- Experimental
 - Localization Dashboard
- Layout
 - Load Layout
 - Save Layout
 - Remove Layout
- Enable Fullscreen Shift+F11
- Search Paths
- Content
- C++ Classes
- Debug
 - Blueprint Debugger
 - Collision Analyzer
 - Debug Tools
 - Profile Data Visualizer
- Log
 - Device Output Log
 - Message Log
 - Output Log
- Miscellaneous
 - Asset Audit
 - Class Viewer
 - Device Manager
 - Device Profiles
 - Material Analyzer
 - Merge Actors
 - Modules
 - Pixel Inspector
 - Session Frontend
 - Struct Viewer
 - Timecode Provider
 - Visual Logger
 - Widget Reflector

U Plugins

Built-In (296)

- 2D (1)
- Advertising (1)
- AI (2)
- Analytics (6)
- Android (2)
- Animation (5)
- Audio (15)
- Augmented Reality (9)
- Automation (2)
- Blueprints (7)
- Cameras (1)
- Compositing (3)
- Database (4)
- Dataprep (1)
- Developer (2)
- Device Profile Selectors (5)
- Editor (24)
- Examples (3)
- Experimental (5)
- FX (3)
- Gameplay (5)
- Geometry (5)
- Graphics (1)
- Importers (15)
- Input Devices (6)
- Insights (7)

Built-In Search

Actor Layer Utilities Version 1.0
 Utilites for interacting with actor layers from blueprints
 Enabled

Actor Sequence (Experimental) Version 0.1 ⚠ BETA
 Runtime for embedded actor sequences
 Enabled
[Epic Games, Inc.](#)

Adjust Analytics Provider Version 1.0
 Adjust Analytics Provider
 Enabled
[Documentation](#) [Epic Games, Inc.](#)

ADO Support Version 1.0
 ADO (ActiveX Data Objects) Database Support
 Enabled
[Epic Games, Inc.](#)

AES GCM network packet handler Version 1.0 ⚠ BETA
 Provides a packet handler component to do AES GCM encryption and decryption.

[New Plugin](#)

Click here to open the Plugin Creator dialog.

Type

- World
- AtmosphericF
- StaticMeshAct
- DirectionalLigh
- PlayerStart
- Edit BP_Sky...
- SkyLight
- SphereReflectic

View Options

World Settings

...w details.



Choose a template and then specify a name to create a new plugin.



Blank

Create a blank plugin with a minimal amount of code.

Choose this if you want to set everything up from scratch or are making a non-visual plugin. A plugin created with this template will appear in the Editor's plugin list but will not register any buttons or menu entries.



Content Only

Create a blank plugin that can only contain content.



Blueprint Library

Create a plugin that will contain Blueprint Function Library.

Choose this if you want to create static blueprint nodes.

C:\Users\kejvaja1\MMA\PluginExample\Plugins\ ... Skeleton

Folder Name

Descriptor Data

Author	Jana Zraková
Description	My first plugin
Author URL	
Is Beta Version	<input type="checkbox"/>

Show Content Directory

Create Plugin

Search Solution Explorer (Ctrl+0)

Solution 'PluginExample' (2 projects)

Engine

UE4

Games

PluginExample

References

Config

Plugins

Source

PluginExample.uproject

Visualizers

UE4.natvis

File Modification Detected



The project 'PluginExample' has been modified outside the environment.

Press Reload to load the updated project from disk.

Press Reload All after all external changes and operations are complete to reload all items from disk.

Press Ignore to ignore the external changes. The changes will be used the next time you open the project.

Reload

Reload All

Ignore

Ignore All

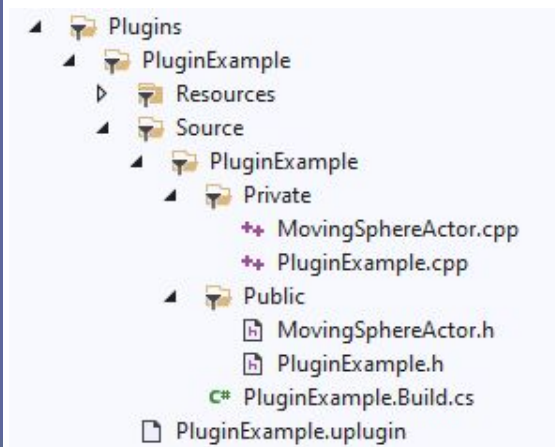
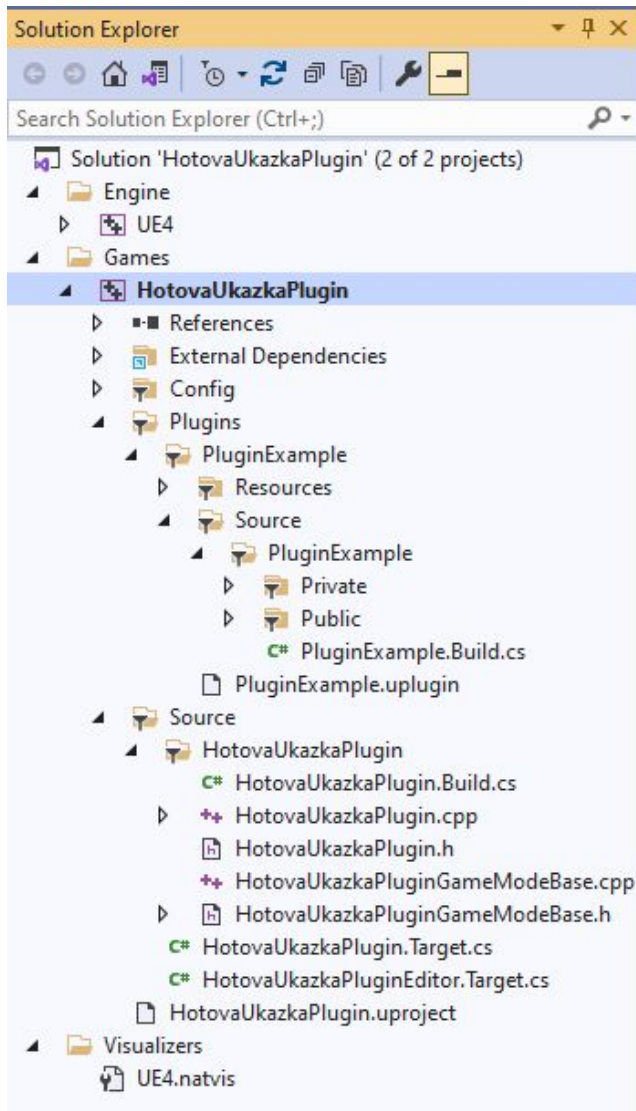
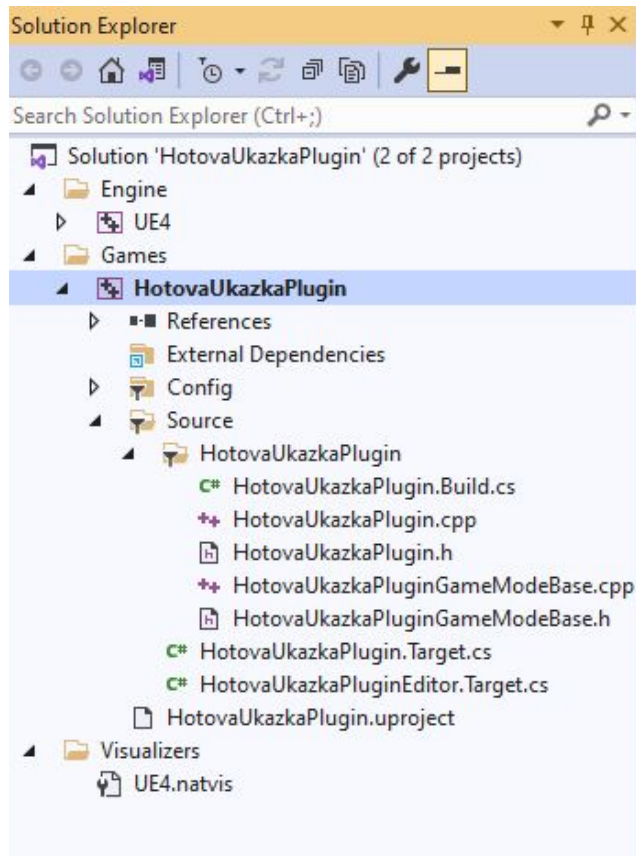
Properties

Engine Folder Properties

Misc

(Name)

Engine



```

PluginExampleEditor.Target.cs
SkeletonPlugin.uplugin
Schema: <No Schema Selected>
1  {
2      "FileVersion": 3,
3      "Version": 1,
4      "VersionName": "1.0",
5      "FriendlyName": "SkeletonPlugin",
6      "Description": "My first plugin.",
7      "Category": "Other",
8      "CreatedBy": "Jana Zrakova",
9      "CreatedByURL": "",
10     "DocsURL": "",
11     "MarketplaceURL": "",
12     "SupportURL": "",
13     "CanContainContent": true,
14     "IsBetaVersion": false,
15     "IsExperimentalVersion": false,
16     "Installed": false,
17     "Modules": [
18     {
19         "Name": "SkeletonPlugin",
20         "Type": "Runtime",
21         "LoadingPhase": "Default"
22     }
23 ]
24 }
    
```

109 %

Output

Show output from: Source Control - Git

Solution Explorer

Search Solution Explorer (Ctrl+Q)

- Solution 'PluginExample' (2 projects)
 - Engine
 - UE4
 - Games
 - PluginExample**
 - References
 - Config
 - Plugins
 - SkeletonPlugin
 - Resources
 - Source
 - Source
 - PluginExample.uproject
- Visualizers
 - UE4.natvis

Properties

SkeletonPlugin.uplugin File Properties

Misc

(Name)	SkeletonPlugin.uplugin
Content	False
File Type	Document
Full Path	C:\Users\kejavaja1\MMA\F
Included In Project	True
Relative Path	..\..\Plugins\SkeletonPlug



Name Your New Actor

Enter a name for your new class. Class names may only contain alphanumeric characters, and may not contain a space.

When you click the "Create" button below, a header (.h) file and a source (.cpp) file will be made using this name.

Name

SkeletonPlugin (Runtime) ▾

Public Private

Path

PluginExample (Runtime)

SkeletonPlugin (Runtime)

Choose Folder

Header File

C:/Users/kejevaja1/MMA/PluginExample/Plugins/SkeletonPlugin/Source/SkeletonPlugin/Public/CustomSphere.h

Source File

C:/Users/kejevaja1/MMA/PluginExample/Plugins/SkeletonPlugin/Source/SkeletonPlugin/Private/CustomSphere.cpp

< Back

Create Class

Cancel

Užitečné odkazy

- nastavení Visual Studia pro Unreal Engine
<https://docs.unrealengine.com/en-US/Programming/Development/VisualStudioSetup/index.html>
 - plugin RuntimeMeshComponent <https://github.com/TriAxis-Games/RuntimeMeshComponent>
 - ukázka využití pluginu <https://github.com/SiggiG/ProceduralMeshDemos>
 - staré fórum <https://nerivec.github.io/old-ue4-wiki/>
- =====

Návod na vložení pluginu do projektu:

1. Vytvořte si nový C++ projekt, nebo využijte nějaký váš stávající
2. Pokud tam není, vytvořte složku 'Plugins' v adresáři projektu a do něj vložte přiloženou plugin složku s pluginem
3. Otevřte si Visual Studio
4. Do JSONu <jméno_projektu>.uproject přidejte za 'Modules' název vkládaného pluginu (nezapomeňte za závorku v 'Modules' dát čárku, musí to být validní JSON).

```
"Plugins": [  
  {  
    "Name": "jmenoPluginu",  
    "Enabled": true  
  }  
]
```

5. Propište změny

- buď spuštěním projektu z VisualStudia (zelená šipka Local Windows Debbuger)
- nebo ukončením VS, smazáním složek .vs, Intermediate a souboru .sln, dále pravým tlačítkem na <projekt>.uproject

vygenerujete VS soubory. Po spuštění souboru <projekt>.uproject zbuilděte.

Až plugin uvidíte v Unreal Enginu, můžete už kompilovat pomocí okna 'Modules', kde si najdete název pluginu a kliknete na 'recompile'.