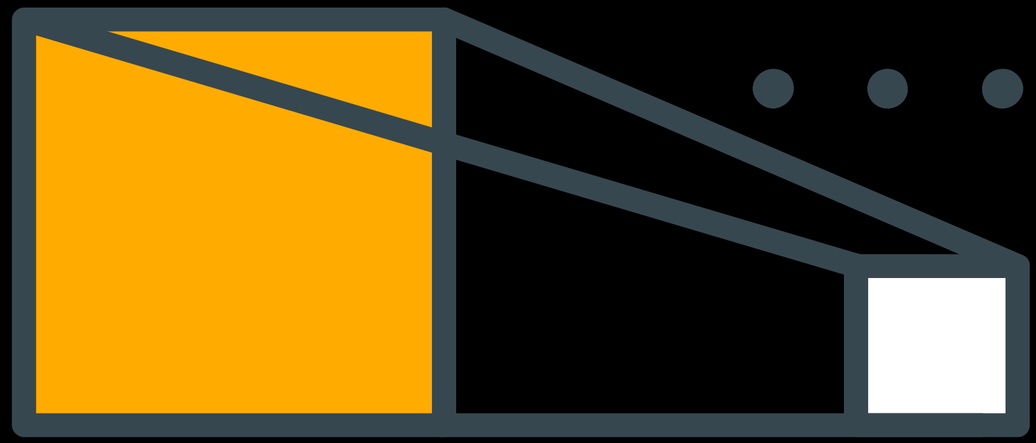
UNIVERSITI TEKNIKAL MALAYSIA MELAKA

GAME ENGINE DEVELOPMENT II - camera

HAMZAH ASYRANI SULAIMAN



DISCLAIMER

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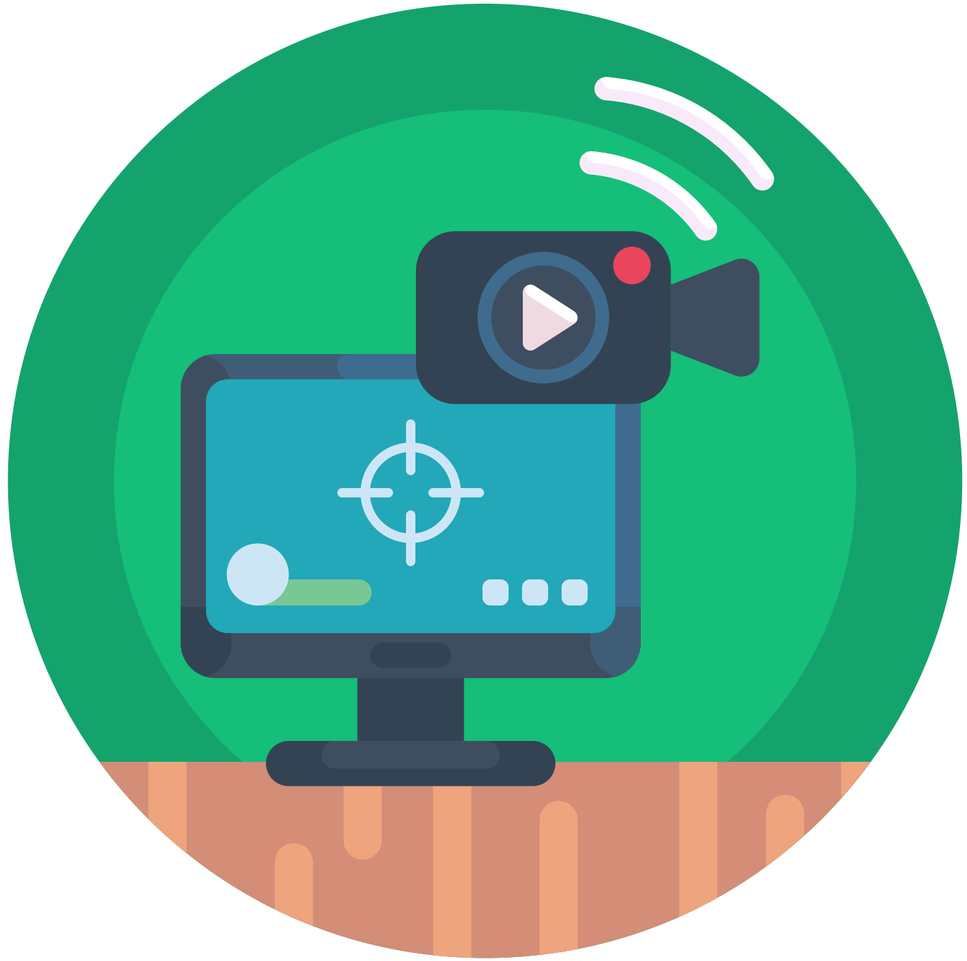
Objective

How can camera be implemented in game engine

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693
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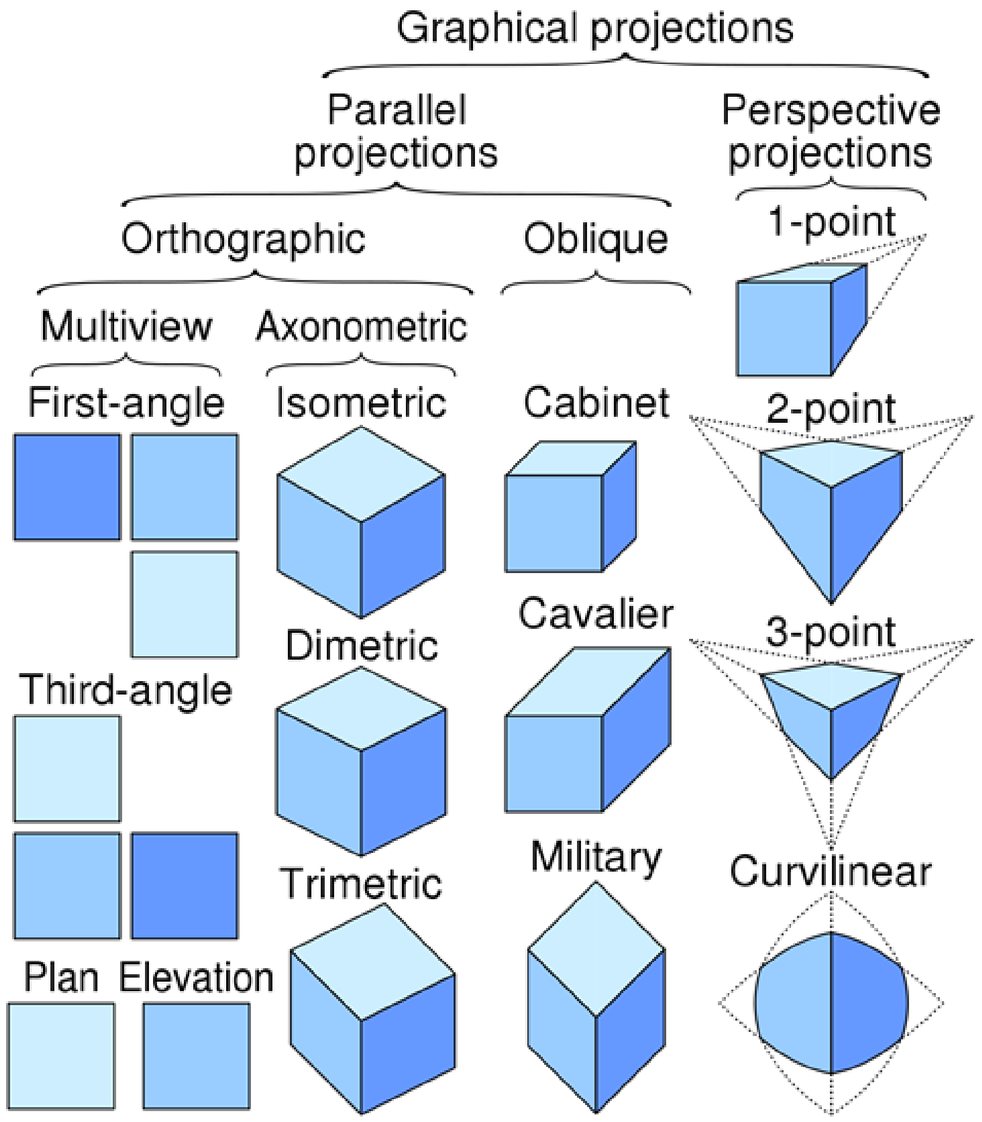
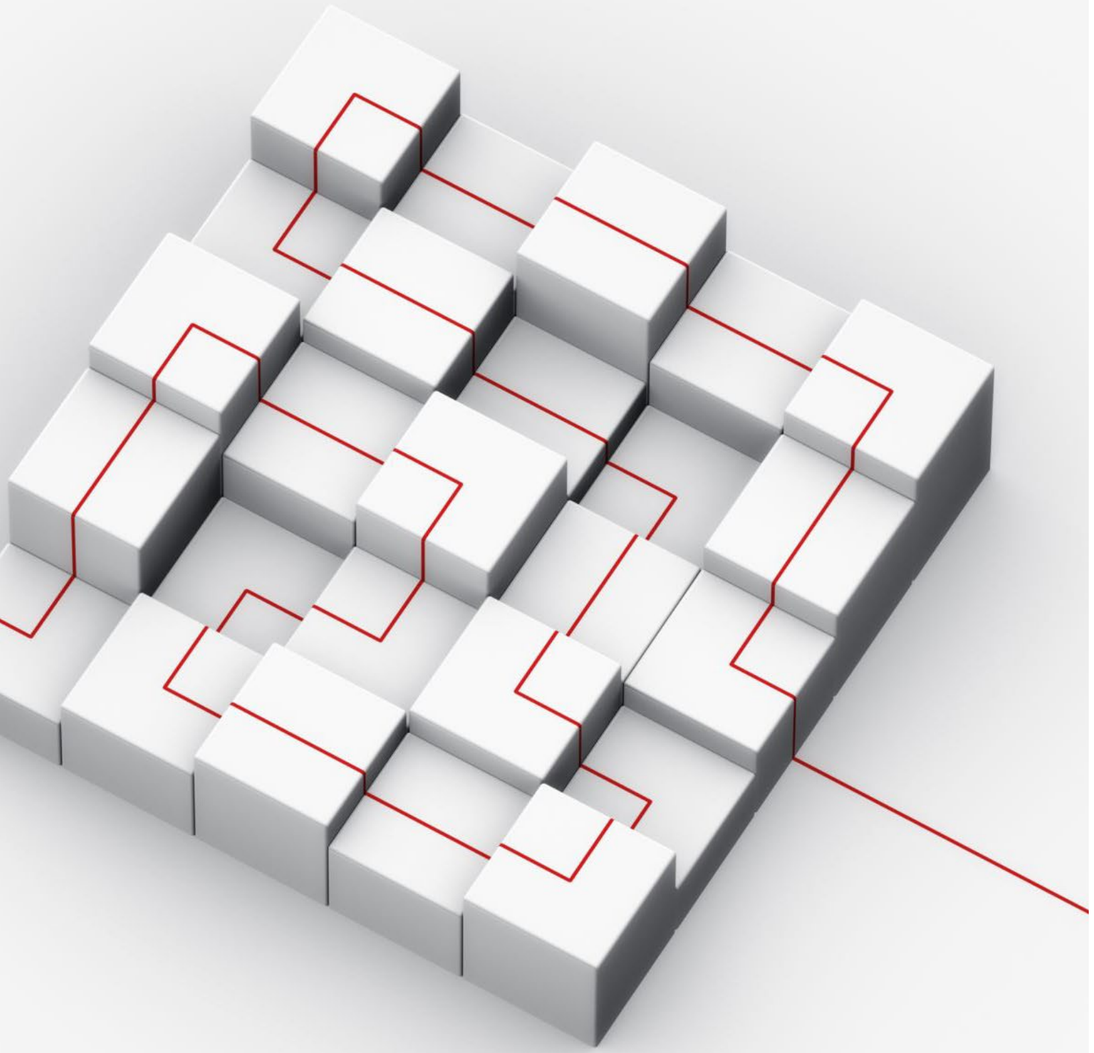
C/C TERMINAL



- An overview of different types of graphical projections, including parallel and perspective projections, and their applications in games and simulations.



Multiview Projections (First-Angle & Third-Angle)

- Description: Shows multiple sides (front, side, top) of an object in 2D without perspective distortion.
- Applications: Used in UI views for technical accuracy, such as in inventory or character customization screens.

Orthographic Projections: Axonometric

Isometric Projection

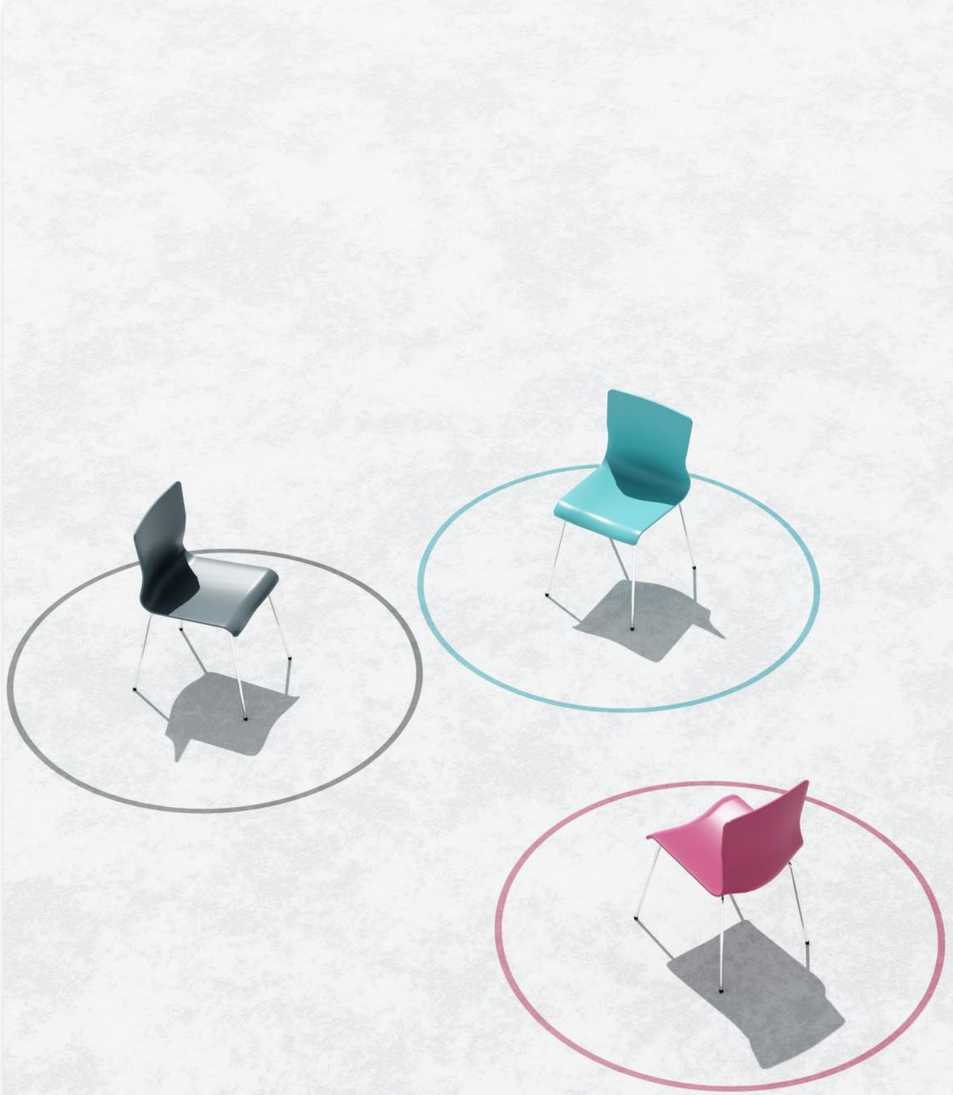
- Description: Displays objects at equal angles along three axes, creating a 3D appearance.
- Applications: Common in 2.5D games (e.g., SimCity, Diablo).

Dimetric Projection

- Description: Two axes have different scales, useful in technical simulations.

Trimetric Projection

- Description: All three axes have different scales, useful for specialized simulations.



Oblique Projections

Cabinet Projection

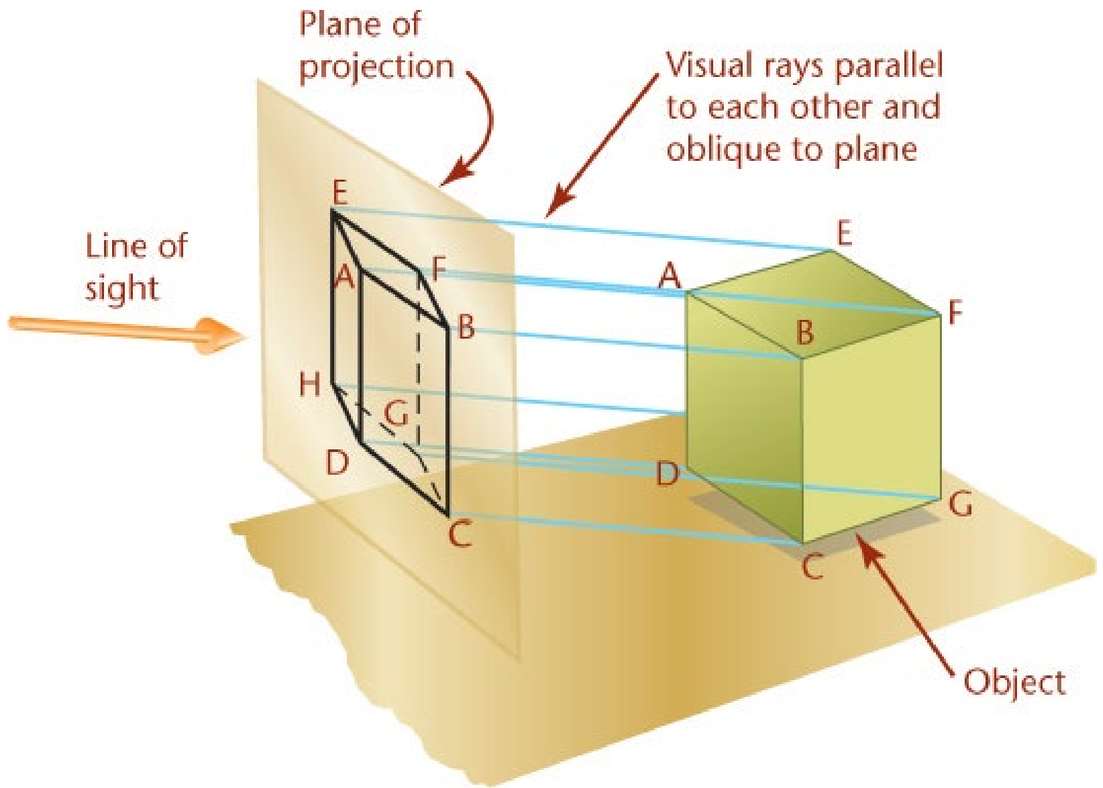
- Description: Depth is reduced to half to minimize distortion.
- Applications: Technical schematics and strategy games.

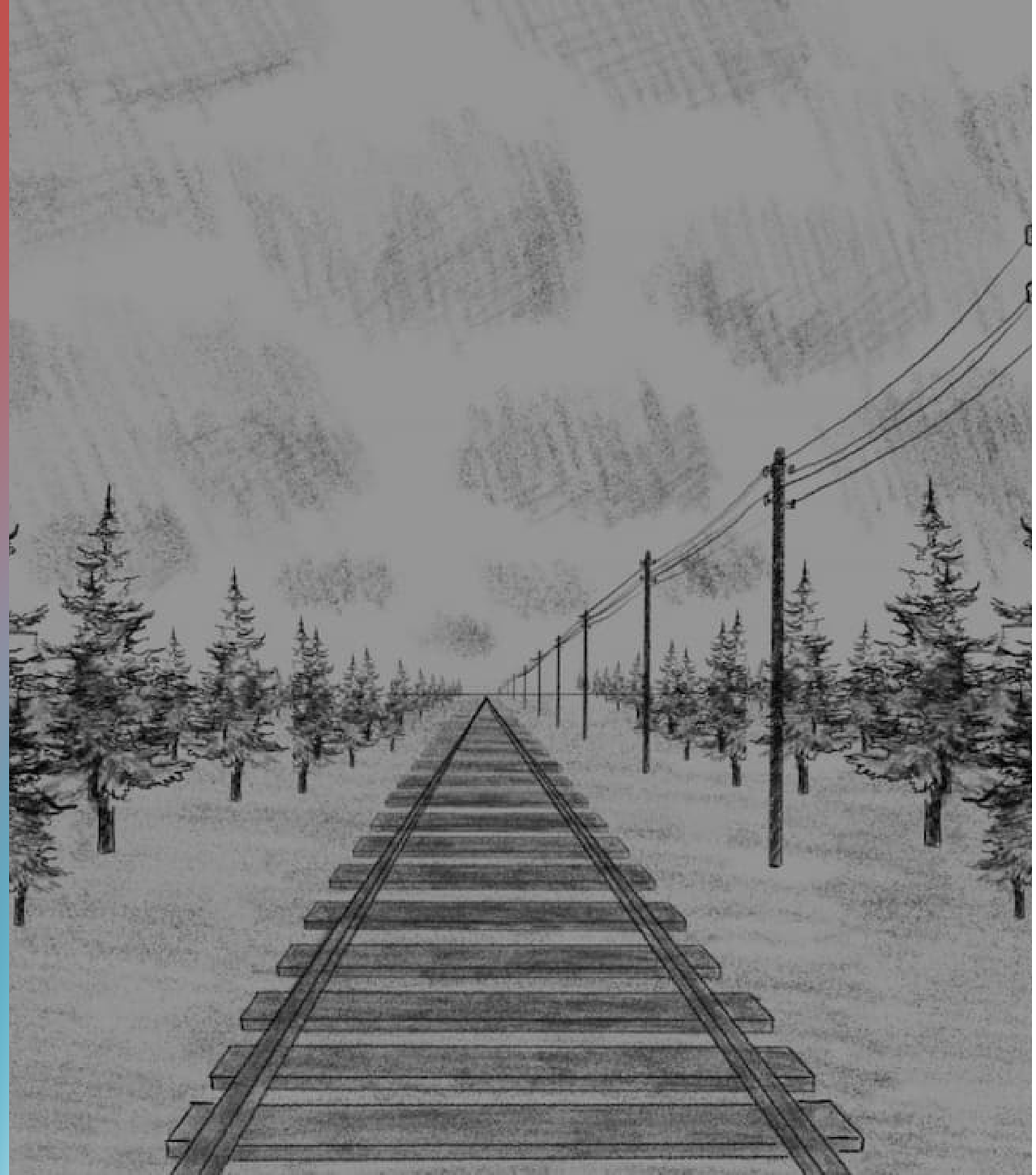
Cavalier Projection

- Description: Maintains full depth, often appears slightly distorted.
- Applications: Older tactical games and technical simulations.

Military Projection

- Description: Emphasizes certain dimensions, creating a unique view.
- Applications: Military simulations and planning tools.



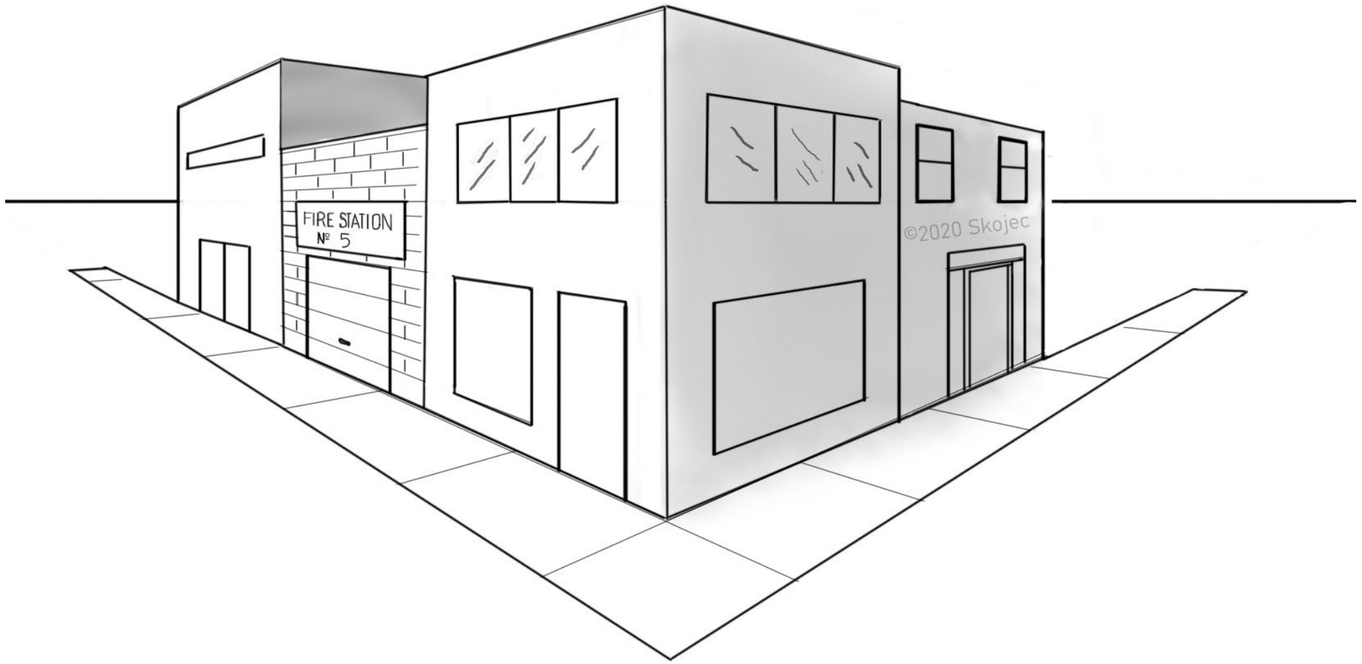


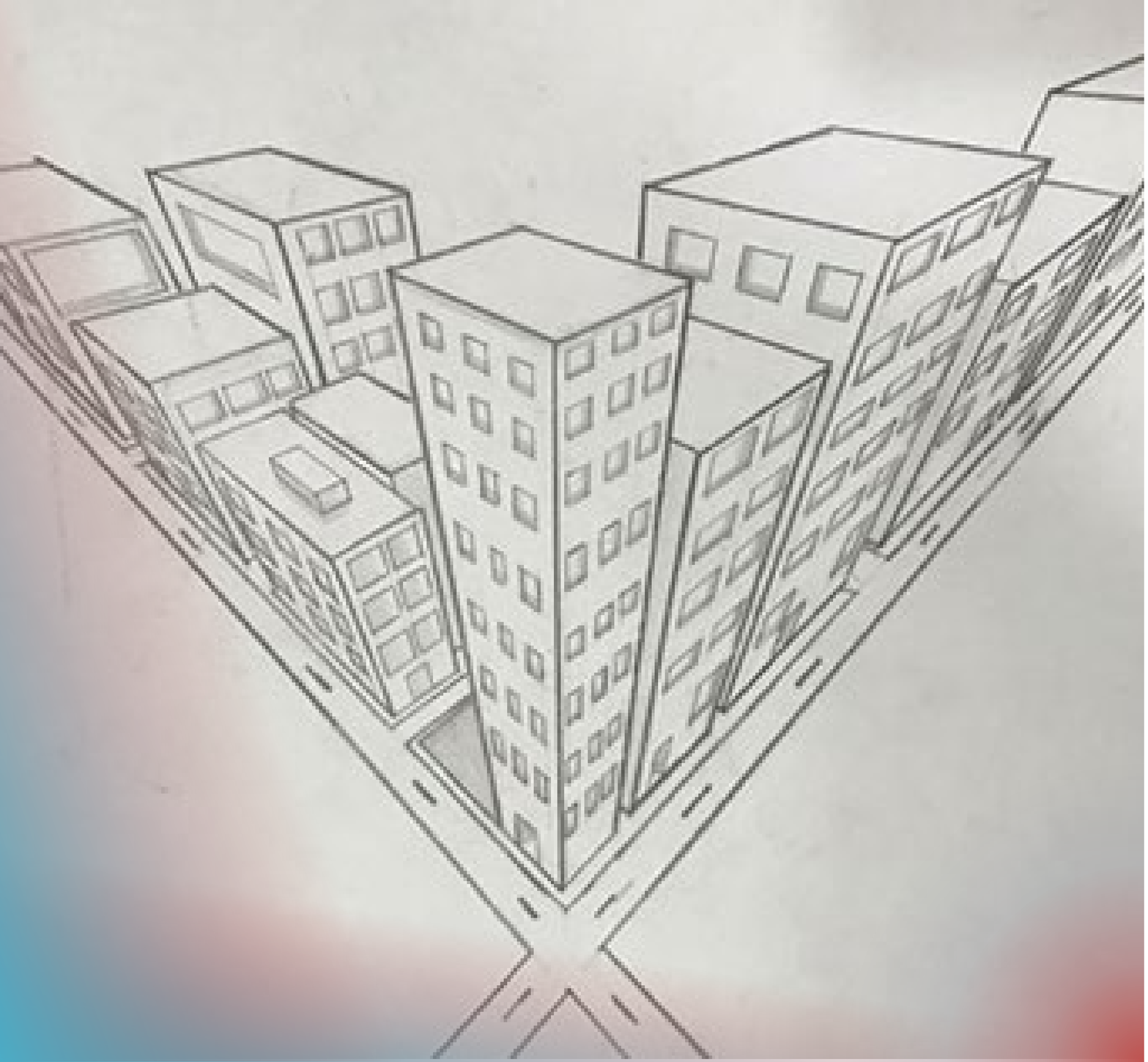
Perspective Projections: 1-Point

- Description: All lines converge to a single point for a vanishing effect.
- Applications: Hallway or corridor views in first-person games, VR environments.

Perspective Projections: 2-Point

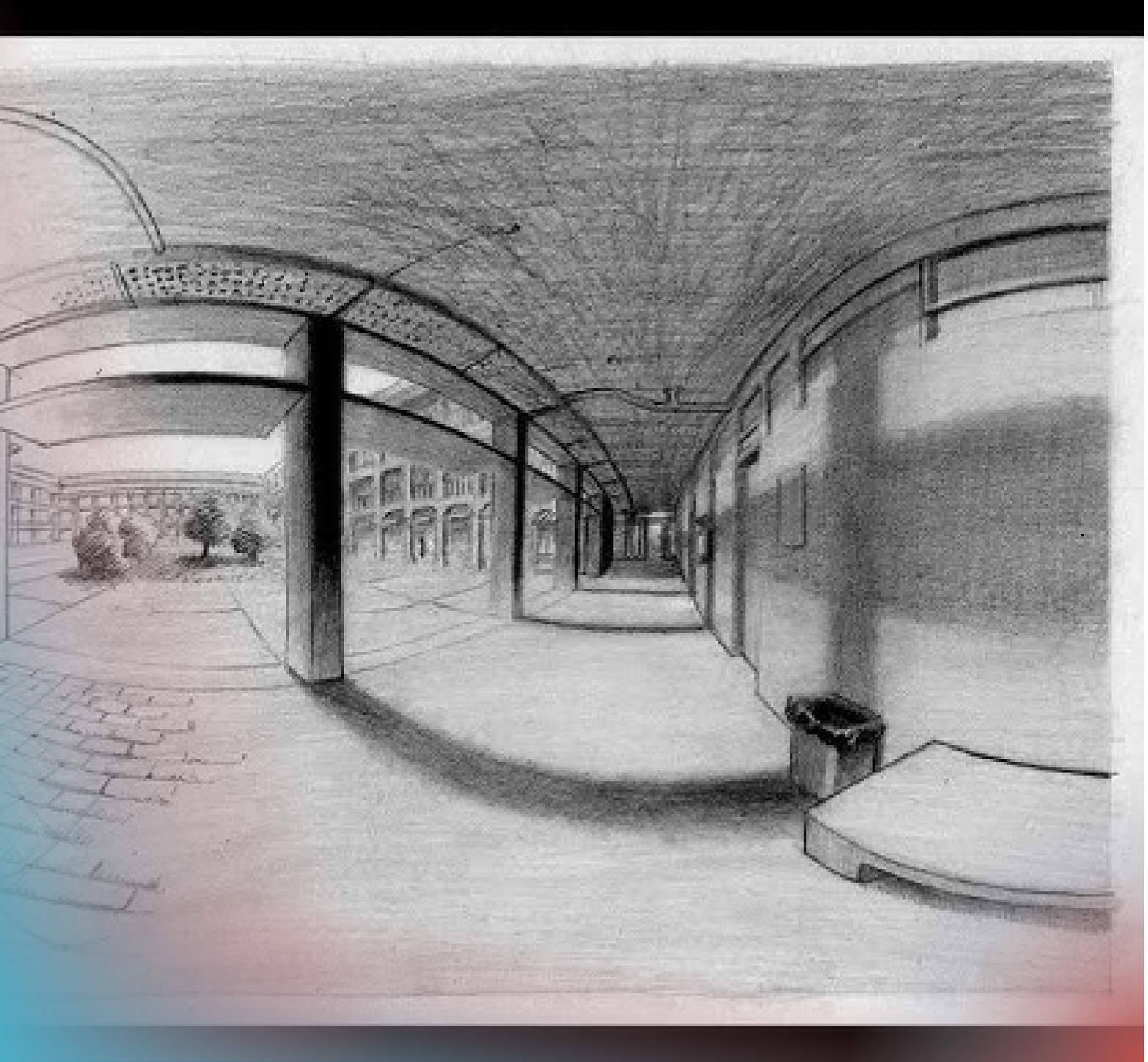
- Description: Objects converge to two vanishing points, creating depth on two axes.
- Applications: Common in 3D games for buildings, landscapes, and interiors (e.g., open-world games).





Perspective Projections: 3-Point

- Description: Adds a third vanishing point for depth on three axes.
- Applications: Effective for large-scale environments in open-world and third-person games.



Perspective Projections: Curvilinear

- Description: Distorted, spherical view with a fisheye effect.
- Applications: Ideal for 360-degree panoramic scenes and VR games, offering an immersive view.

CAMERA PLACEMENT/ANGLE IN GAME

Camera placement in a game engine can affect the player's experience and how they interact with the game. The camera's distance, angle, and level can all change how the player sees the game world. Some common camera perspectives and their effects include:

Third-person

- A popular perspective for action games, this view shows the player's character and some of their surroundings. The camera is usually placed behind the character, close to their body, and follows their movements.

Fixed

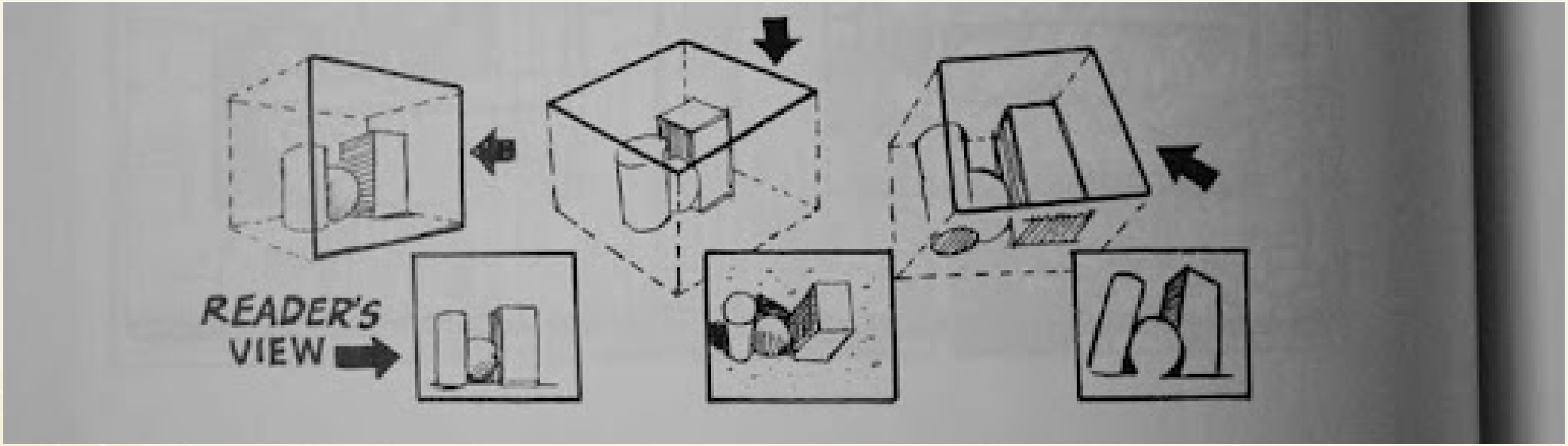
- This camera doesn't move, and shows the player's character in a series of still images. It can help the player focus on the game's objectives and mechanics, but it can also make the game feel less dynamic and interactive.

Tracking

- This camera follows the player's character's movements.

Interactive

- This partially automated camera allows the player to directly change the view.


READER'S
VIEW


0
0:23
0
587
LEVEL UP
TIDEHUNTER
587 / 587
489
SHOP


N


87 76
300
LB
LB
RB
RB
100
Subscribe


W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60


W 285 300 NW 330 345 N 15 30 NE 60 75 E 105
nadal 58 graczy
Odległość zerowania
100m
21
SERIA
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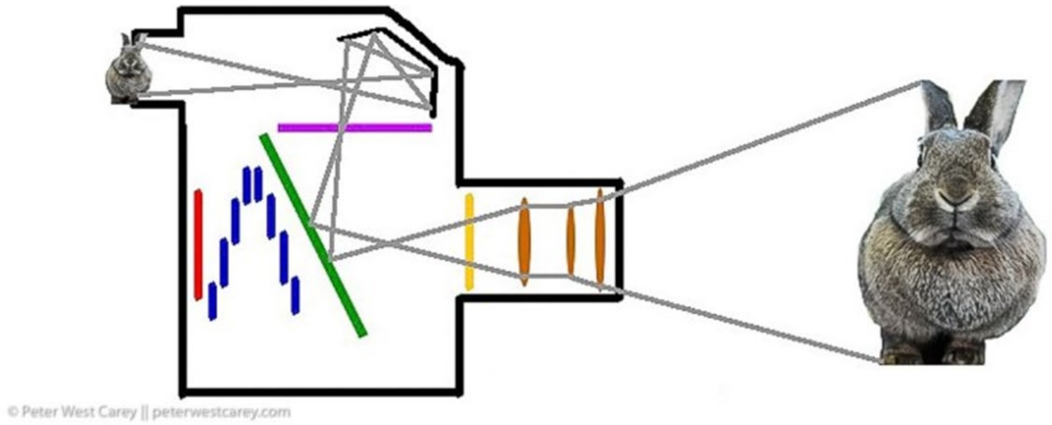
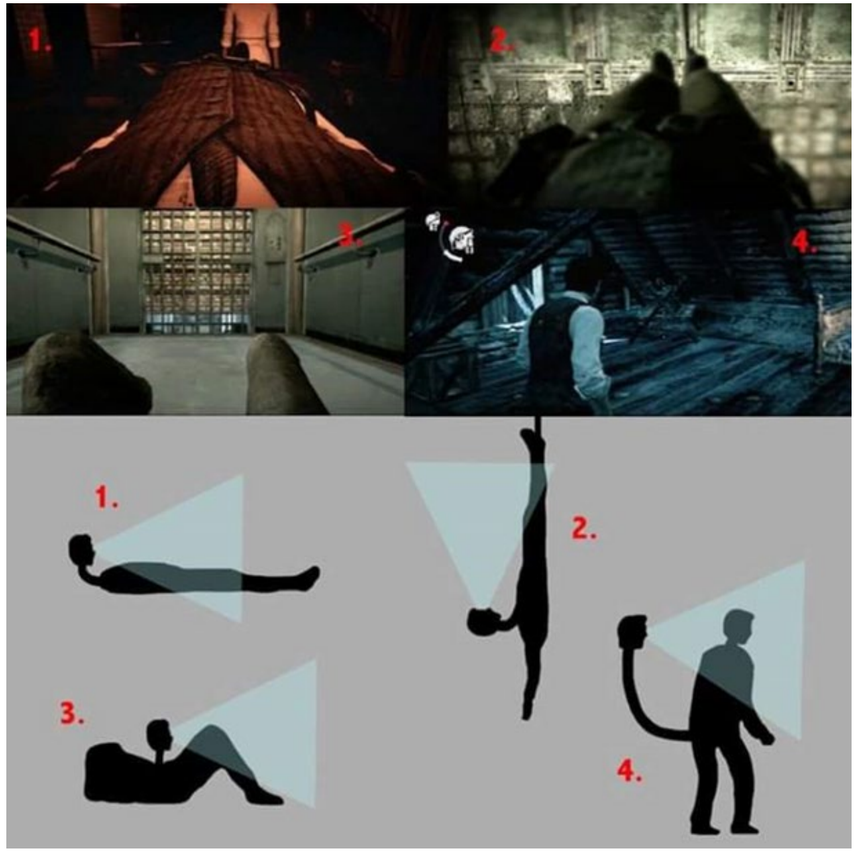
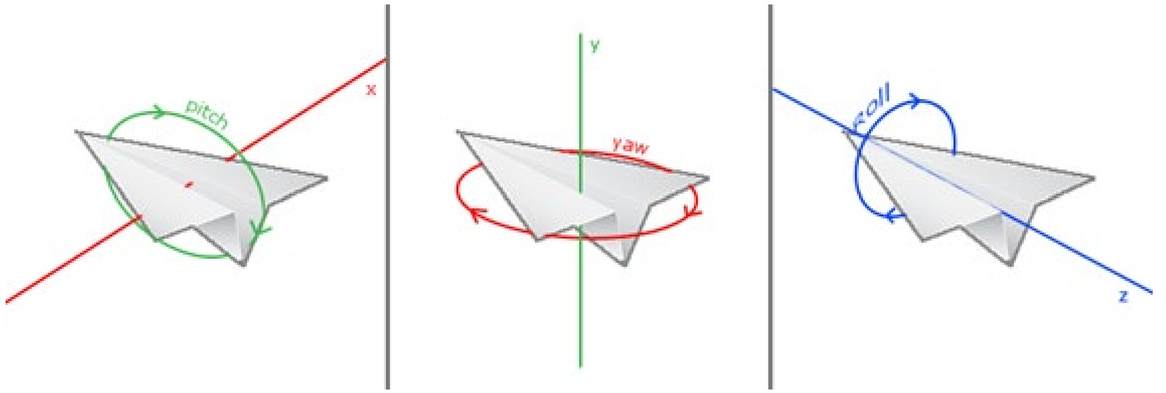
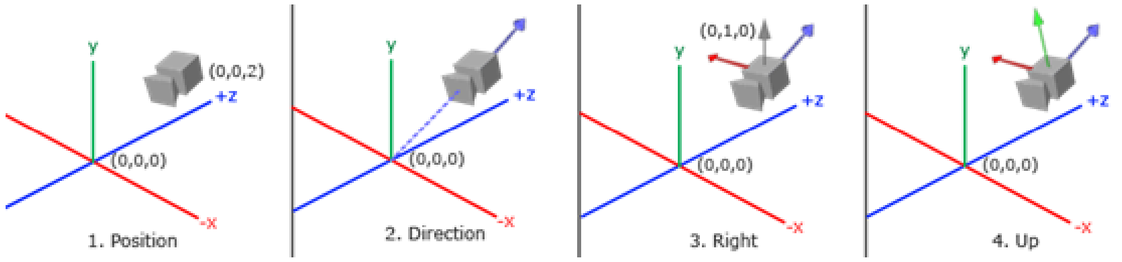
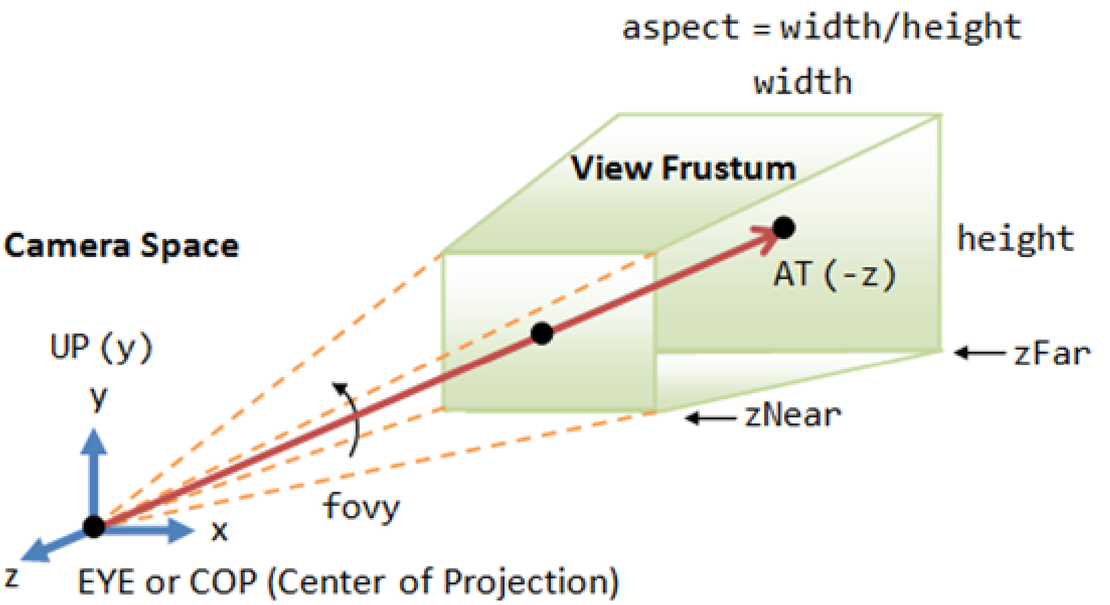
CAMERA in Game Engine



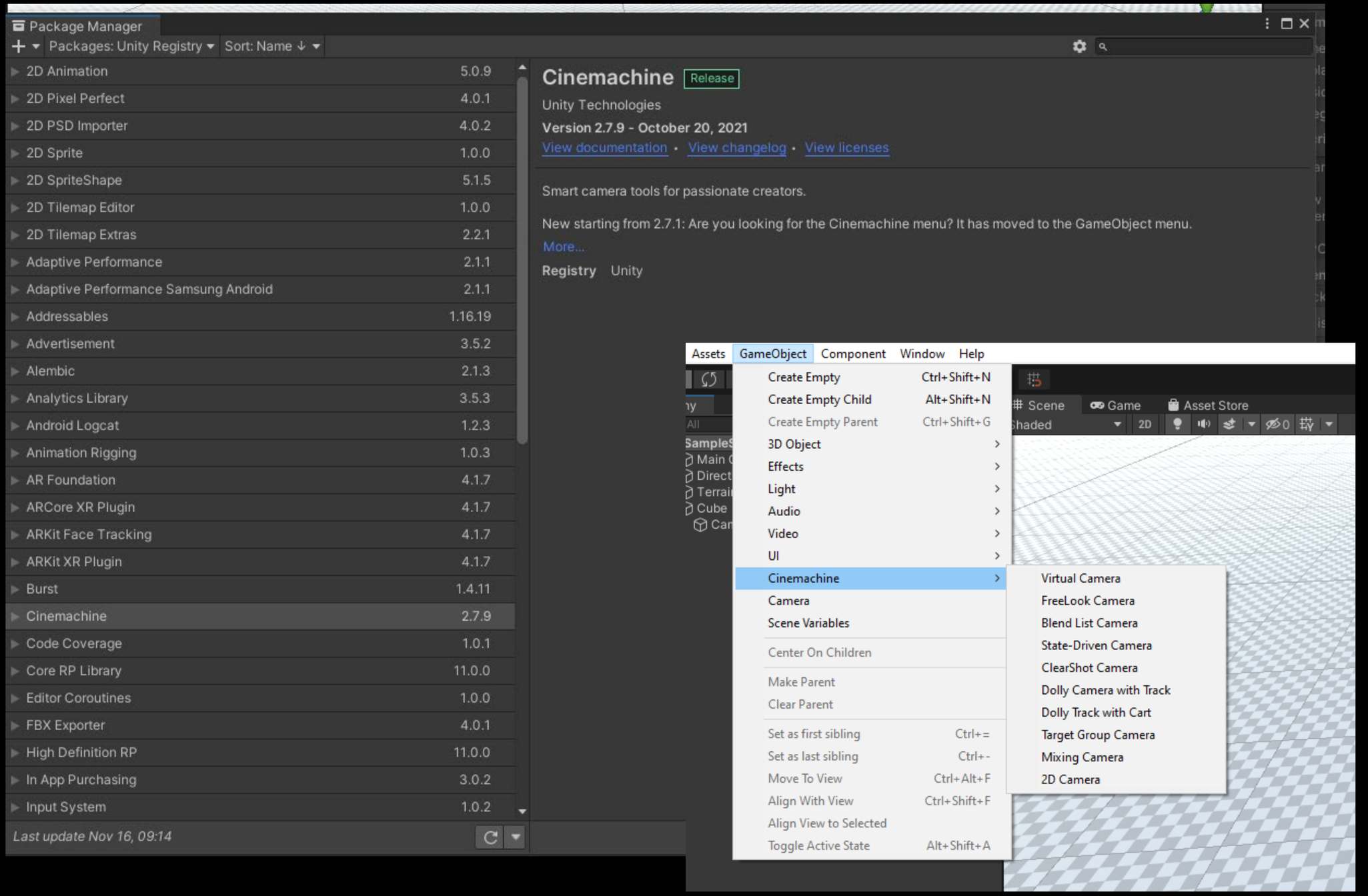








Perspective Projection: The camera's view frustum is specified via 4 view parameters: fovy, aspect, zNear and zFar.


Package Manager
Packages: Unity Registry
Sort: Name
2D Animation 5.0.9
2D Pixel Perfect 4.0.1
2D PSD Importer 4.0.2
2D Sprite 1.0.0
2D SpriteShape 5.1.5
2D Tilemap Editor 1.0.0
2D Tilemap Extras 2.2.1
Adaptive Performance 2.1.1
Adaptive Performance Samsung Android 2.1.1
Addressables 1.16.19
Advertisement 3.5.2
Alembic 2.1.3
Analytics Library 3.5.3
Android Logcat 1.2.3
Animation Rigging 1.0.3
AR Foundation 4.1.7
ARCore XR Plugin 4.1.7
ARKit Face Tracking 4.1.7
ARKit XR Plugin 4.1.7
Burst 1.4.11
Cinemachine 2.7.9
Code Coverage 1.0.1
Core RP Library 11.0.0
Editor Coroutines 1.0.0
FBX Exporter 4.0.1
High Definition RP 11.0.0
In App Purchasing 3.0.2
Input System 1.0.2
Last update Nov 16, 09:14
Cinemachine
Release
Unity Technologies
Version 2.7.9 - October 20, 2021
View documentation · View changelog · View licenses
Smart camera tools for passionate creators.
New starting from 2.7.1: Are you looking for the Cinemachine menu? It has moved to the GameObject menu.
More...
Registry Unity
Assets
GameObject
Component
Window
Help
Create Empty Ctrl+Shift+N
Create Empty Child Alt+Shift+N
Create Empty Parent Ctrl+Shift+G
3D Object
Effects
Light
Audio
Video
UI
Cinemachine
Camera
Scene Variables
Center On Children
Make Parent
Clear Parent
Set as first sibling Ctrl+=
Set as last sibling Ctrl+-
Move To View Ctrl+Alt+F
Align With View Ctrl+Shift+F
Align View to Selected
Toggle Active State Alt+Shift+A
Virtual Camera
FreeLook Camera
Blend List Camera
State-Driven Camera
ClearShot Camera
Dolly Camera with Track
Dolly Track with Cart
Target Group Camera
Mixing Camera
2D Camera
Scene
Game
Asset Store
2D

Some info about camera system in their game engine

- Camera follow In Unity: Cinemachine Tutorial | AshDev - https://www.youtube.com/watch?v=THOTp4RduI8
- Using Cinemachine in Unity - https://www.youtube.com/watch?v=x6Q5sKXjZOM&t=1s
- Camera Sequencer Tutorial in Unreal - https://www.youtube.com/watch?v=-oV3oJZptEg
- Unreal Engine 5 Camera Animation - https://www.youtube.com/watch?v=uYPZgcJTFlw
- Godot Camera - https://www.youtube.com/watch?v=PRxla9c0Zb8