

Summary for Task 1

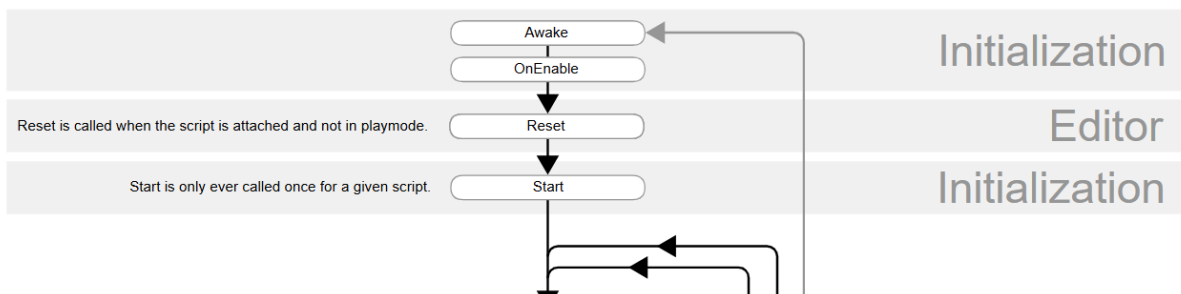
Order of execution in Unity

1. Initialization Phase



Purpose: Setting up the script and preparing the object before the game starts.

- **Awake()** : Called when the script instance is being loaded.
- **OnEnable()** : Called when the object becomes enabled and active.
- **Reset()** : Called when a script is attached to an object (only in the editor).
- **Start()** : Called once before the first frame update.



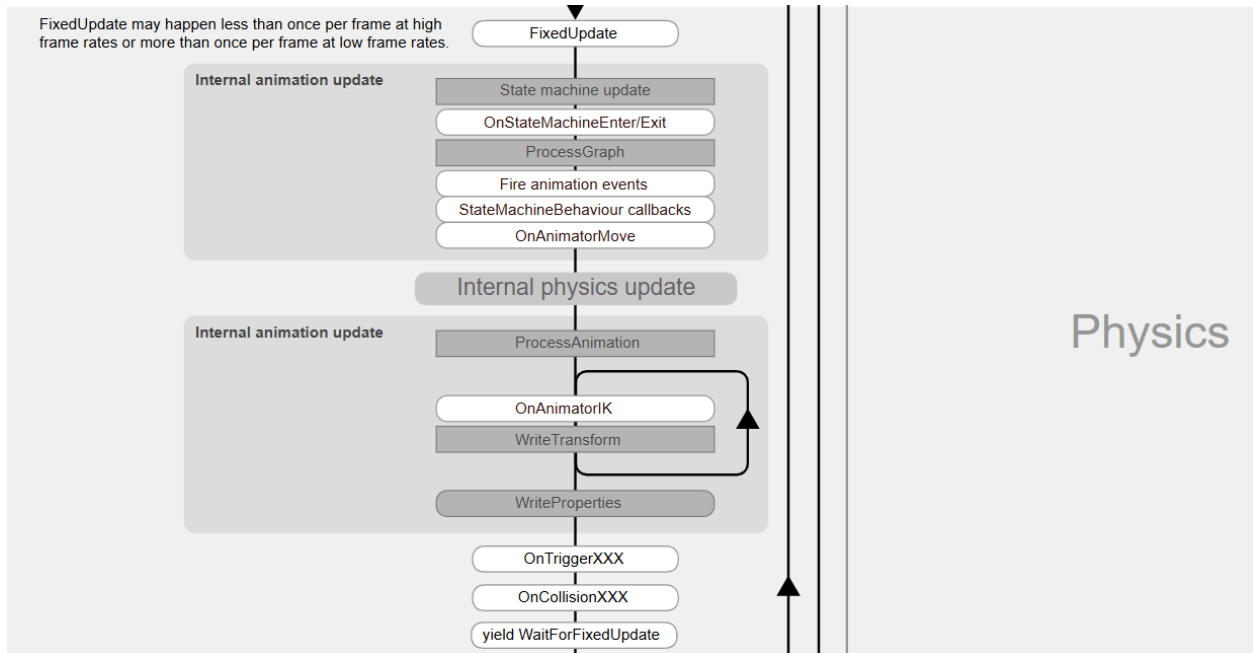
2- Physics



Purpose: Handling physics-related calculations in a consistent, fixed time step.

- **FixedUpdate()** : Called at a fixed interval, independent of frame rate.

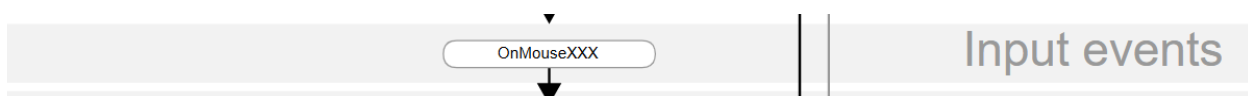
- Internal physics calculations take place, including:
 - **State machine update (for animations)**
 - **Animation events and `OnAnimatorMove()` execution.**
 - **Internal physics updates (like `OnTriggerXXX()` and `OnCollisionXXX()`).**



3. Input Events Phase



Purpose: Capturing player input.

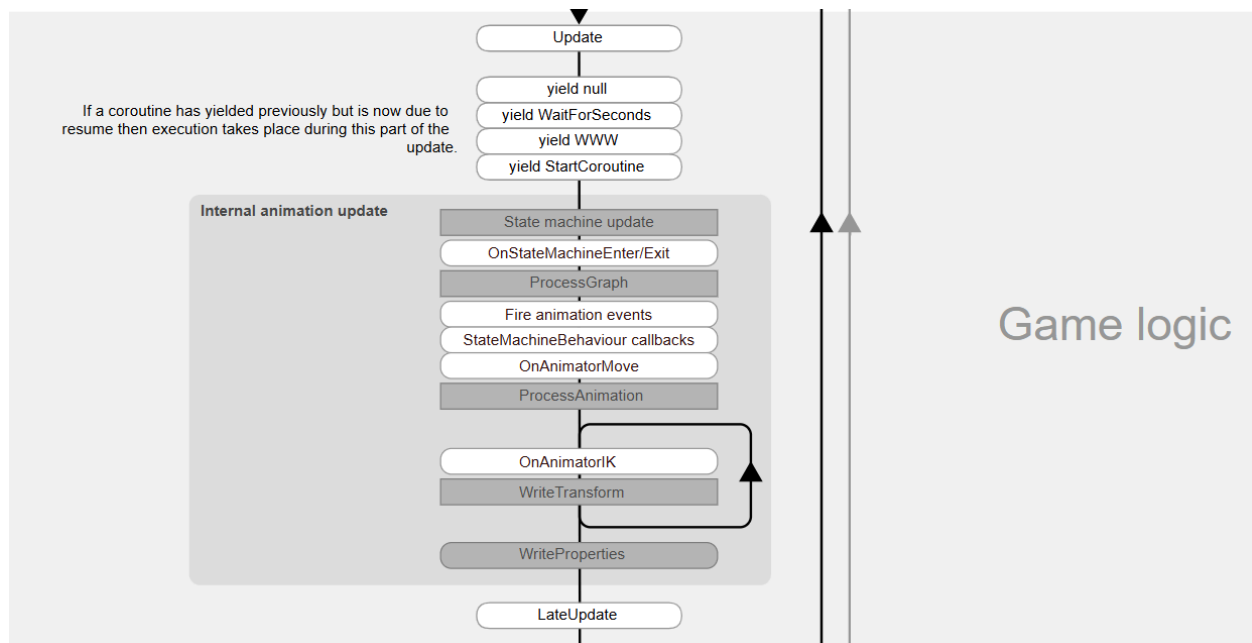


4. Game Logic (Frame Update)



Purpose: Running game logic and handling real-time updates.

- **Update()** : Called once per frame.
- Coroutines resume execution if they had yielded previously.
- Another internal animation update occurs.



5. Late Update



Purpose: Executing logic that depends on **Update()**, ensuring proper order.

- **LateUpdate()** : Called once per frame after **Update()**.

6. Scene Rendering



Purpose: Rendering objects before they appear on screen.

- `OnPreCull()` : Before culling occurs.
- `OnBecameVisible()` / `OnBecameInvisible()` : If an object enters or leaves the camera view.
- `OnWillRenderObject()` , `OnPreRender()` , `OnRenderObject()` , `OnPostRender()` , `OnRenderImage()` : Various rendering-related callbacks.

7. Gizmo Rendering (Editor Only)

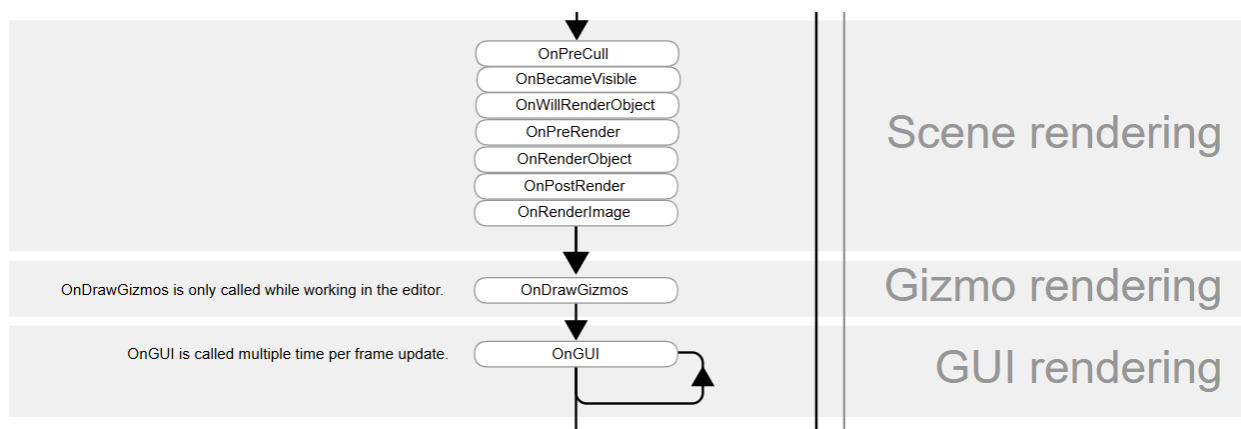


Purpose: Drawing debugging visuals in the Unity Editor.

- `OnDrawGizmos()` : Called when drawing gizmos in the scene view.

8. GUI Rendering

- `OnGUI()` : Called multiple times per frame for GUI rendering.



9. End of Frame

- `yield WaitForEndOfFrame` : Executes at the end of the frame before rendering.

10. Pausing

- **OnApplicationPause()** : Called when the application is paused.

11. Decommissioning (Object Cleanup)

- **OnApplicationQuit()** : Called before the application quits.
- **OnDisable()** : Called when the object is disabled.
- **OnDestroy()** : Called before the object is destroyed.

