190a-4-Unity-Update-FixedUpdate-LateUpdate-YY-2022-2-15.odp

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Update() vs FixedUpdate() vs LateUpdate()

https://docs.unity3d.com/Manual/ExecutionOrder.html

Update Order

When you're keeping track of game logic and interactions, animations, **camera** positions, etc., there are a few different events you can use. The common pattern is to perform most tasks inside the **Update** function, but there are also other functions you can use.

- **FixedUpdate:** **FixedUpdate** is often called more frequently than **Update**. It can be called multiple times per frame, if the frame rate is low and it may not be called between frames at all if the frame rate is high. All physics calculations and updates occur immediately after **FixedUpdate**. When applying movement calculations inside **FixedUpdate**, you do not need to multiply your values by **Time.deltaTime**. This is because **FixedUpdate** is called on a reliable timer, independent of the frame rate.
- **Update:** **Update** is called once per frame. It is the main workhorse function for frame updates.
- **LateUpdate:** **LateUpdate** is called once per frame, after **Update** has finished. Any calculations that are performed in **Update** will have completed when **LateUpdate** begins. A common use for **LateUpdate** would be a following third-person camera. If you make your character move and turn inside **Update**, you can perform all camera movement and rotation calculations in **LateUpdate**. This will ensure that the character has moved completely before the camera tracks its position.

Figure 1: Update Order

Update Functions Use Case

1. FixedUpdate(): Good for all physics related functions such as trigger or collision

2. Update(): Good for movement or input control

3. LateUpdate(): Good for camera that follows characters who have moved

Script Lifecycle Flowchart (1)

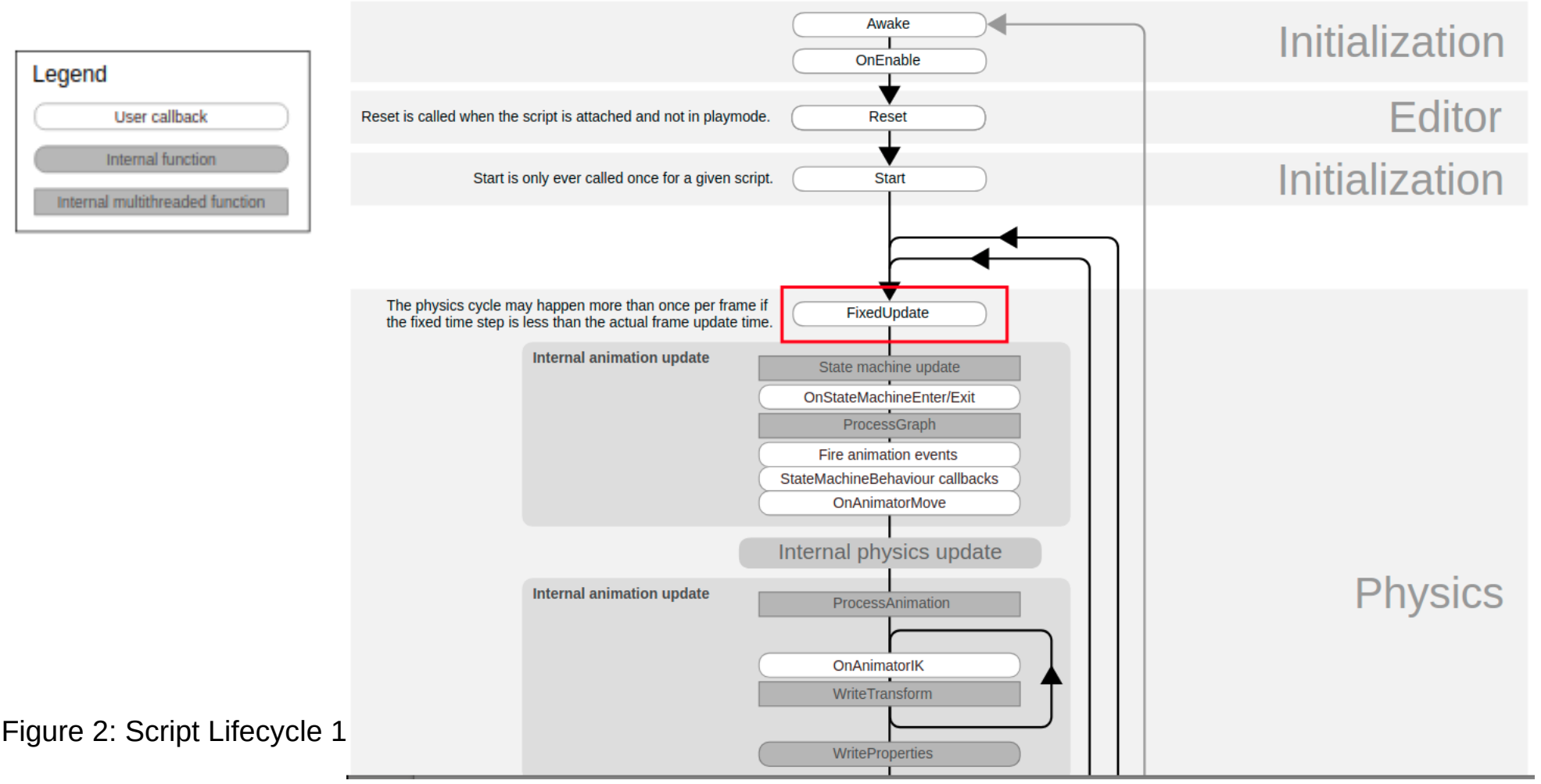

Figure 2: Script Lifecycle 1

Script Lifecycle Flowchart (2)

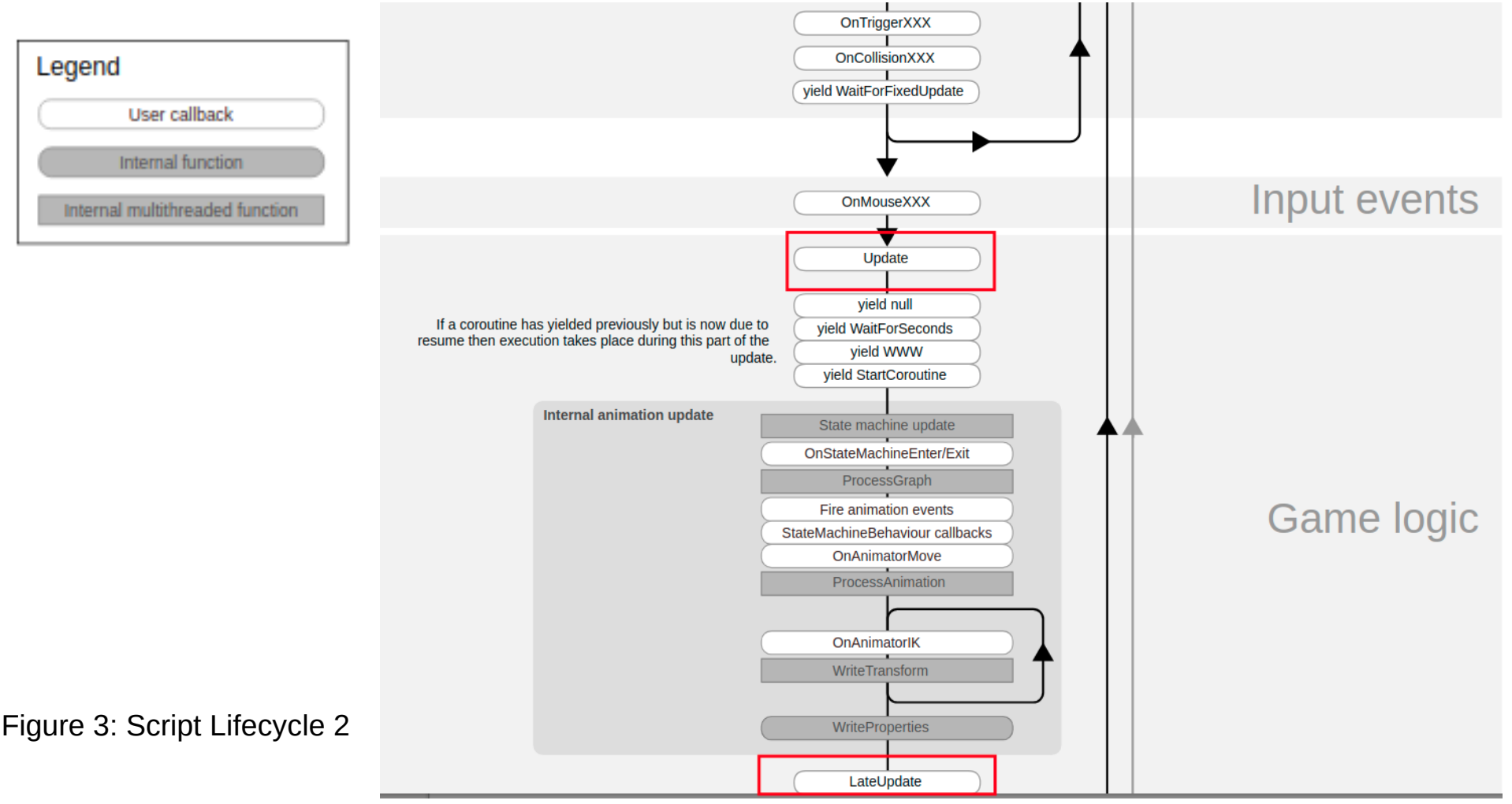

Figure 3: Script Lifecycle 2

Script Lifecycle Flowchart (3)

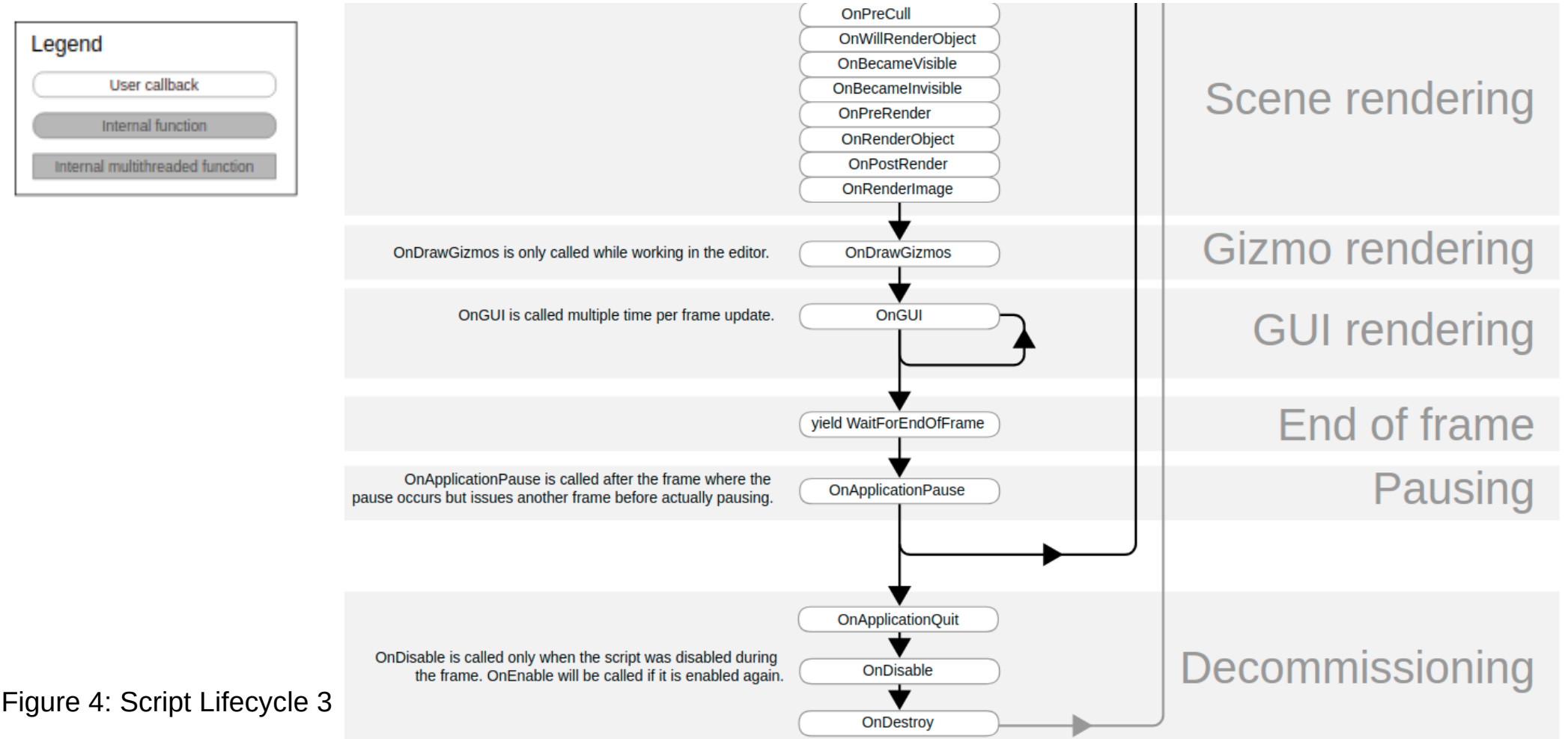

Figure 4: Script Lifecycle 3

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