

0- A zone is an execution context that persists across async tasks, and allows the creator of the zone to observe and control execution of the code within the zone.

I think that **the main purpose** of using zonejs in angular2 is **to know when to render**.

According to [NgZone Primer](#) (Chapter 5: Use Cases/Use Case 3: Framework Auto Render)

Frameworks, such as Angular, need to know when all of the application work has completed and perform DOM update before the host environment performs the pixel rendering. In practice this means that the framework is interested when the main task and the associated micro tasks have executed but before the VM hands over the control to the host.

Angular uses the zone to patch async APIs(addEventListener, setTimeout(), ...) and uses notifications from these patched APIs to run change detection every time some async event happened.

1- Zonejs is one of the core library used in Angularjs 2. Zonejs is to maintain contextual execution for single or multi-leveled asynchronous methods. So, it means it helps to keep track of the parent context of currently executing asynchronous method.

Example -

```
Zone.current.fork({}).run(function(){
  Zone.current.myZoneVar = true;
  console.log('Assigned myZoneVar');
  setTimeout(()=>{
    console.log('In timeout', Zone.current.myZoneVar);
  },1000);
});
console.log('Out side', Zone.current.myZoneVar);
```

2- In simple language Zone.js is a api or set of programs which is used by angular 2 to update the application view when any change occurred. A Zone is an execution context that persists across asynchronous task. **for example:**Events, XMLHttpRequests and Timers(setTimeout(), setInterval()) etc.