ViewRef, ChangeDetectorRef

Taking care of updating the DOM

ComponentRef

- A Component you create in Angular is compiled by Ivy and a **ComponentRef** is created from each of our components

- Think of a ComponentRef as someone that connects our component class to a view and to the DI

- So when creating a tree of components you are actually creating a tree of ComponentRef
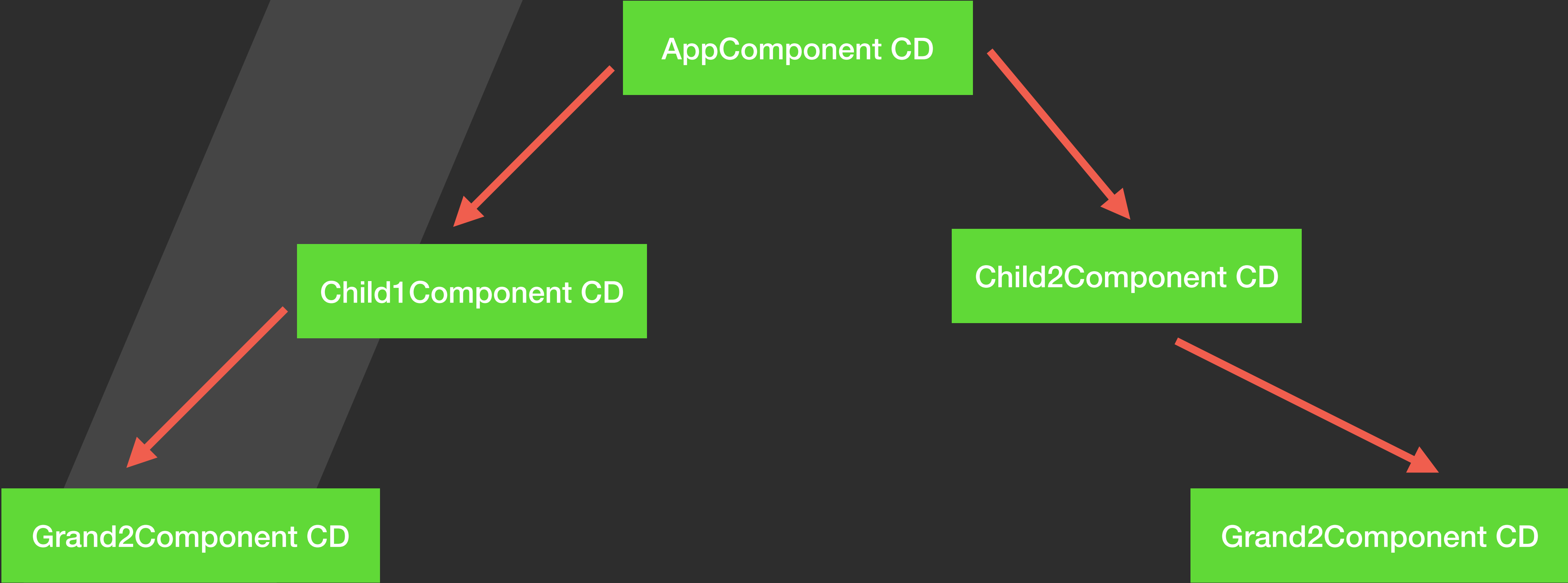
```
export declare abstract class ComponentRef<C> {
  abstract get injector(): Injector;
  abstract get instance(): C;
  abstract get hostView(): ViewRef;
  abstract get changeDetectorRef(): ChangeDetectorRef;
}
```

ViewRef

- Each component we create a ComponentRef is created which holds a ViewRef in the hostView property

- ViewRef is an object used to represent angular templates

- It also contains the data the is held in the component class

ChangeDetectorRef

- Each component we create a ComponentRef is created which holds a ChangeDetectorRef in the changeDetectorRef property

- The ChangeDetectorRef is used to mark a component as dirty (or not) and perform the update to the DOM

- It will compare the current view in the DOM with the new data and refresh the Dom if needed

- So when we create an angular app with component tree, we are also creating a tree of ChangeDetectorRef that is used to update the component view

- By default when an event happens which should trigger cd than all the ChangeDetectorRef's are marked dirty

ChangeDetectorRef Tree

AppComponent CD

Child1Component CD

Child2Component CD

Grand2Component CD

Grand2Component CD

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- In this ex we will try to answer the following question: **If a cd event happens, which ChangeDetectorRef's in the tree are marked as dirty**

- We will create a component tree (which will also be a ChangeDetectorRef tree) of 3 components: **AppComponent** that will host **Child1Component** and **Child2Component**

- We will place a function in their template that will notify us when cd happens in them

- We will trigger a CD even in one of the children and check if change detection happens in the other components

Summary

- When creating component tree in angular we are also create a ChangeDetectorRef tree

- Each ChangeDetectorRef is in charge of updating the view of the component if needed

- By default all the ChangeDetectorRef's are marked as dirty when a cd event happens

Thank You

Next Lesson: CD Order