Report

The application is designed with the Model-View-Controller (MVC) architecture pattern. The ClockService acts as the model, responsible for managing the time value and updating it every second. The DigitalClockComponent and AnalogClockComponent are the views, responsible for displaying the time in digital and analog formats respectively. The SettingsComponent is the controller, responsible for providing user interaction to update the time value.

The design procedure can be described in the following steps:

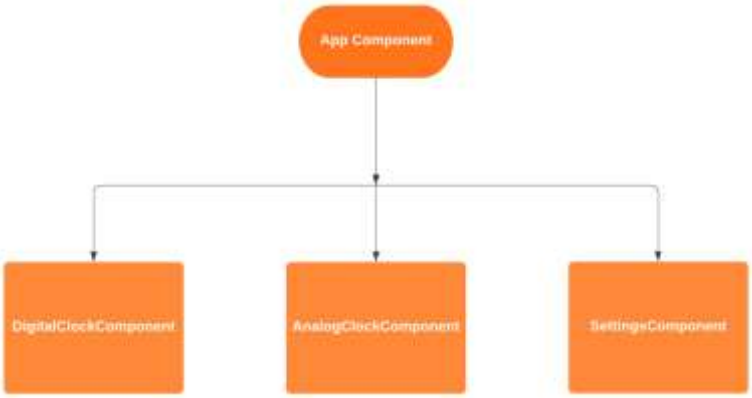
1. The ClockService is created with a BehaviorSubject initialized with the current time value. The time value is updated every second with the RxJS interval function. The ClockService also provides methods to increment, decrement, and reset the time value.

2. The DigitalClockComponent is created as a view of the time value. It subscribes to the ClockService and updates the displayed time value every second.

3. The AnalogClockComponent is also created as a view of the time value. It subscribes to the ClockService and calculates the angles of the hour, minute, and second hands every second. These angles are then used to rotate the hands of the analog clock.

4. The SettingsComponent is created as a controller to update the time value. It provides buttons to increment, decrement, and reset the time value. These buttons call the ClockService's corresponding methods to update the time value.

5. Finally, the AppComponent is created as the root component of the application. It contains the ClockService, DigitalClockComponent, AnalogClockComponent, and SettingsComponent. The AppComponent's HTML template displays the three components in a clock container.



Workflow diagram

The diagram shows the main component, AppComponent, at the top, with three child components beneath it: AnalogClock, DigitalClock, and Settings.

The ClockService is not shown in the diagram, as it is a service that is shared among the three components to keep track of the time.

Each component is responsible for displaying the time in a different way, and Settings component provides functionality to update the time by incrementing or decrementing minutes, and resetting the time to the current time.

The ClockService updates the time every second, and each of the three components subscribe to the time Observable provided by the ClockService to display the current time.