

1, The Router is a separate module in Angular. It is in its own library package, @angular/router. The Router Module provides the necessary service providers and directives for navigating through application views.

2, route outlet acts as a placeholder that Angular dynamically fills based on the current router state.

Example:

```
<router-outlet></router-outlet>  
<router-outlet name='left'></router-outlet>  
<router-outlet name='right'></router-outlet>
```

4, we can call child component inside the route to link child component,

5, we can use activated route to pass data, first import activated route then use constructor injection to inject this route, then we can use observable or snapshot to get data. Observable is preferred.

6, We usually retrieve the value of the parameter in the ngOninit life cycle hook, when the component initialized, when the user navigates to the component again, the Angular does not create the new component but reuses the existing instance. In such circumstances, the ngOninit method of the component is not called again. Hence we need a way to get the value of the parameter. By subscribing to the observable params property, we will retrieve the latest value of the parameter and update the component accordingly.

7, we can put the child component path, which is like a key-value pair(key is url, value is component), inside another path.

8, we can use route guard to prevent use going to unwanted url.

9, lazy loading is a design pattern that loads NgModules as needed. Lazy loading helps keep initial bundle sizes smaller, which in turn helps decrease load times. Lazy loading module follows the design patter, only be loaded when needed.

10, there are data pipe, upper case pipe, lower case pipe, decimal pipe, number pipe,