NIELIT Gorakhpur

COURSE NAME: O level **SUBJECT: WEB DESIGNING AND PUBLISHING**

TOPIC: angular JS **DATE: 03/06/2020**

AngularJS Expression

AngularJS expressions are those that are written inside double braces {{expression}}.AngularJS evaluates the specified expression and binds the result data to HTML. AngularJS expressions can also be written inside a directive: **ng-bind="*expression*".**

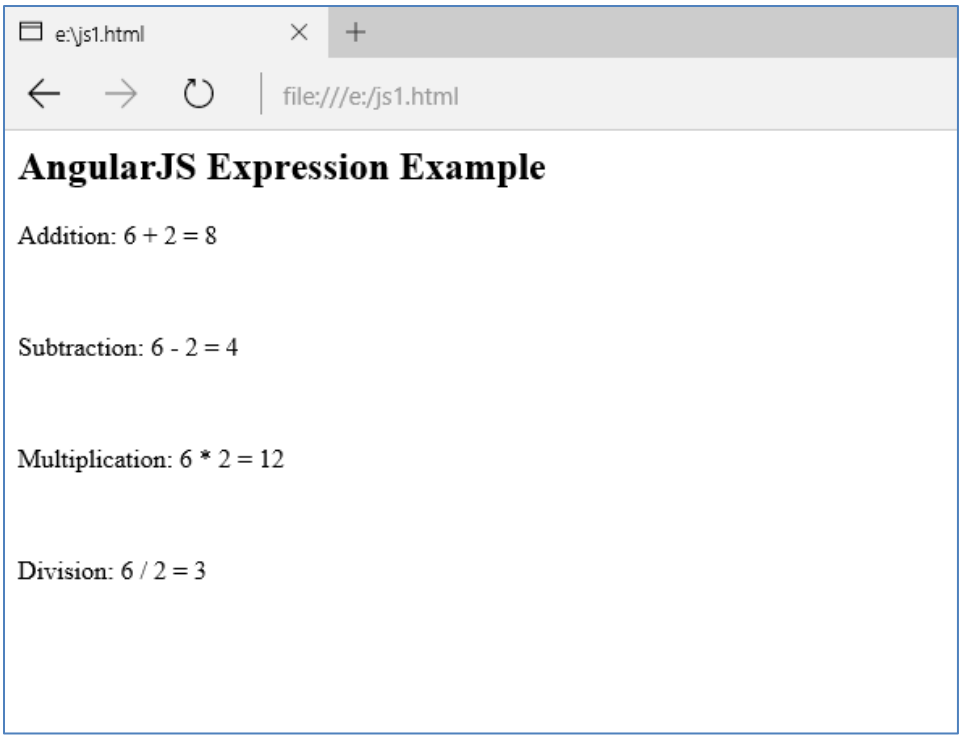
AngularJS expression can contain literals, operators and variables. AngularJS displays the data exactly at the place where the expression is placed.

For example, an expression **{{6/2}}** will produce the result 3 and will be bound to HTML.

Example:

```
<html >
<head>
 <script src = "https://ajax.googleapis.com/ajax/libs/angularjs/1.3.14/angular.min.js">
        </script>
</head>
<body >
<h2> AngularJS Expression Example</h2>
   <div ng-app="">
                <p>    Addition: 6 + 2 = {{6 + 2}} </p> <br />
                <p>    Subtraction: 6 - 2 = {{6 - 2}} </p><br />
                <p>    Multiplication: 6 * 2 = {{6 * 2}} </p><br />
                <p>    Division: 6 / 2 = {{6 / 2}}</p>
   </div>
</body>
</html>
```

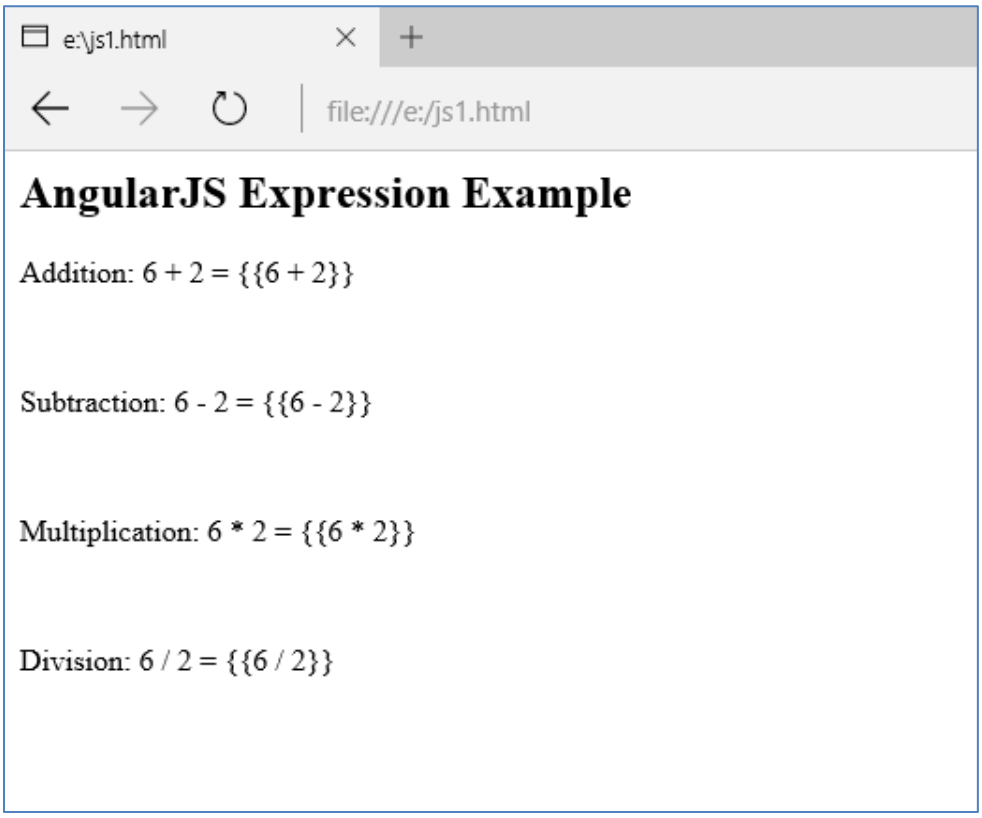
Output



- **ng-app =“” or simply ng-app refers to the ng-app directive which means that there is no module to assign controllers, directives, services attached to the code.**
- **If directive "ng-app" is removed from the code, HTML will simply display the expression without solving it. For Example, lets take the above code and remove the ng-app directive:**

```
<html >
<head>
 <script src = "https://ajax.googleapis.com/ajax/libs/angularjs/1.3.14/angular.min.js">
        </script>
</head>
<body >
<h2> AngularJS Expression Example</h2>
   <div >
                <p>    Addition: 6 + 2 = {{6 + 2}} </p> <br />
                <p>    Subtraction: 6 - 2 = {{6 - 2}} </p><br />
                <p>    Multiplication: 6 * 2 = {{6 * 2}} </p><br />
                <p>    Division: 6 / 2 = {{6 / 2}}</p>
   </div>
</body>
</html>
```

Output: It will simply display the expressions without solving them



Important features of AngularJS expressions

AngularJS expressions can

- be written inside HTML and support filters.
- contain literals, operators, and variables
- Contain literals of any data type.
- contain arithmetic operators which may produce the result based on the type of operands
- Contain variables declared via ng-init directive. The ng-init directive is used to declare AngularJS application variables of any data type.

Limitations of AngularJS expressions

AngularJS expressions cannot

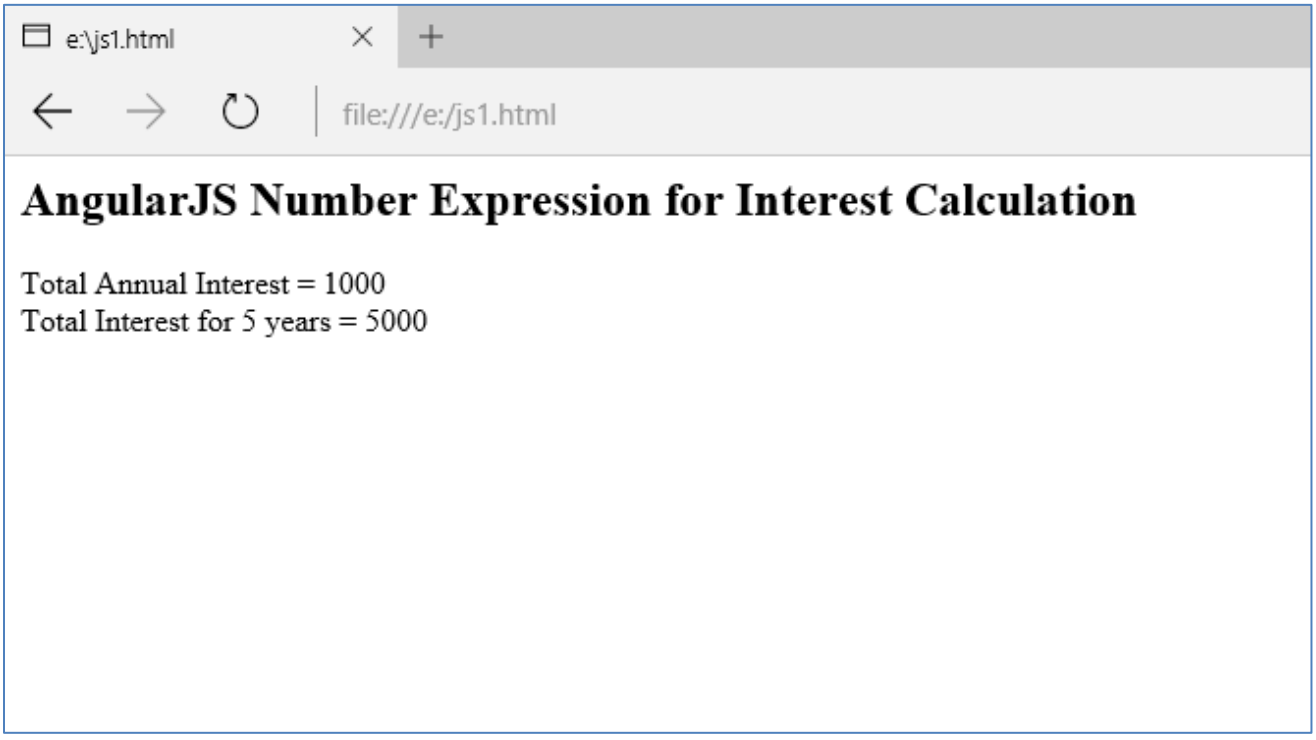
- contain conditions, loops, exceptions or regular expressions e.g. if-else, ternary, for loop, while loop etc
- declare functions
- contain return keyword
- contain comma or void.

AngularJS Numbers

- In AngularJS, numbers can be used in expressions. Any expression using the number and the operators (like , +, -, *, %, etc) then these are called **number expressions**.
- We may use **ng-init** directive to declare and initialize the variables in AngularJs. It's somewhat like defining local variables to code in any programming language. For example: **ng-init="RateOfInterest=5;PrincipalAmount=20000"**

Example

```
<html >
<head>
 <script src = "https://ajax.googleapis.com/ajax/libs/angularjs/1.3.14/angular.min.js">
        </script>
</head>
<body >
<h2> AngularJS Number Expression for Interest Calculation</h2>
        <div ng-app="" ng-init="RateOfInterest=5;PrincipalAmount=20000;Tenure=5">
            Total Annual Interest = {{(RateOfInterest * PrincipalAmount)/100}}
          <br/>
            Total Interest for 5 years = {{(RateOfInterest * PrincipalAmount * Tenure)/100}}
        </div>
</body>
</html>
```



String Expressions in AngularJs

The string expression in Angularjs is a unit of code to perform operations on string values. It may be simply adding two stings i.e. concatenation etc.

```
<html>
<script
src="http://ajax.googleapis.com/ajax/libs/angularjs/1.4.8/angular.min.js"></script>
<body>
        <h2> String Expression in AngularJS </h2>
        <div ng-app="" ng-init="firstName='Indu';lastName='Gupta'">
                <p>My full name is: {{ firstName + " " + lastName }}</p>
        </div>
</body>
</html>
```

AngularJS Objects

AngularJs expressions can have objects as well. The object expressions in AngularJs hold object properties in them and the same way then evaluates at the view where they are used.

For Example, lets define one object as a personname object having 2 key value pairs of "firstName" and "lastName". personname object may be defined using ng-init directive like **ng-init="personname={firstName:'indu',lastName:'gupta'}"**

Example

```
<html>
<script src="http://ajax.googleapis.com/ajax/libs/angularjs/1.4.8/angular.min.js">
</script>
```

```
<body>
<h2> Using Object in AngularJS Expression </h2>
        <div ng-app=""
                ng-init="personname={firstName:'Indu',lastName:'Gupta'}">
                <p>My First Name is : {{ personname.firstName}}</p>
                <p>My Last Name is : {{ personname.lastName}}</p>
        </div>
</body>
</html>
```

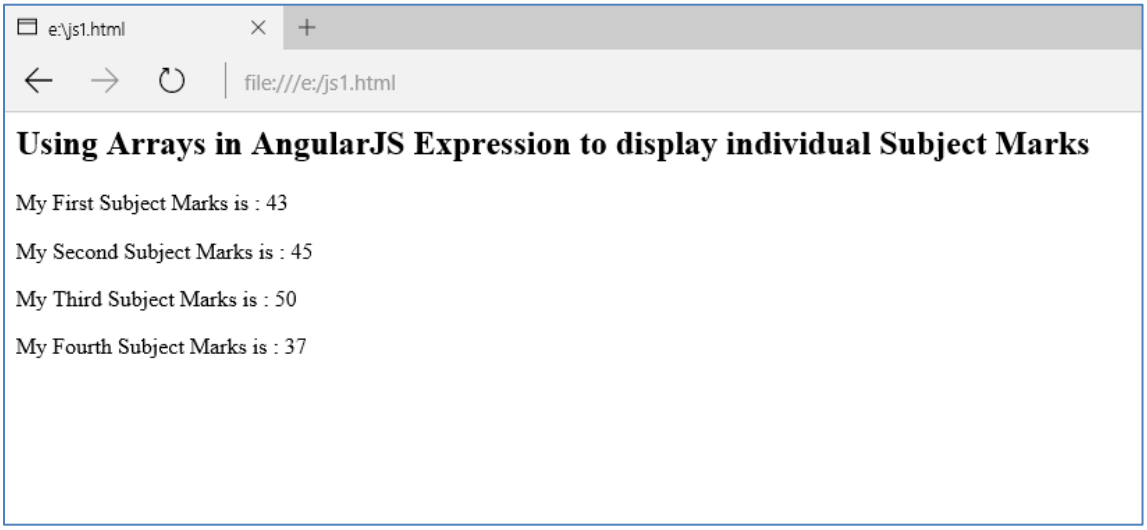
AngularJS Array Expressions

Expressions can be used to work with arrays as well. Array expressions in AngularJs are the expression that hold an array and use those array objects while evaluating array expressions. For Example, submarks array may hold Marks value of various subject(here 4 subjects) and it may be defined using ng-init directive as **ng-init="submarks=[43,45,50,37]"**

Example

```
<html>
<script src="http://ajax.googleapis.com/ajax/libs/angularjs/1.4.8/angular.min.js">
</script>
<body>
<h2> Using Arrays in AngularJS Expression to display individual Subject Marks</h2>
        <div ng-app="" ng-init="submarks=[43,45,50,37]">
```

```
            <p>My First Subject Marks is : {{ submarks[0]}}</p>
            <p>My Second Subject Marks is : {{ submarks[1]}}</p>
            <p>My Third Subject Marks is : {{ submarks[2]}}</p>
            <p>My Fourth Subject Marks is : {{ submarks[3]}}</p>
        </div>
</body>
</html>
```



Example: Different types of variables (of any data type) using in a webpage

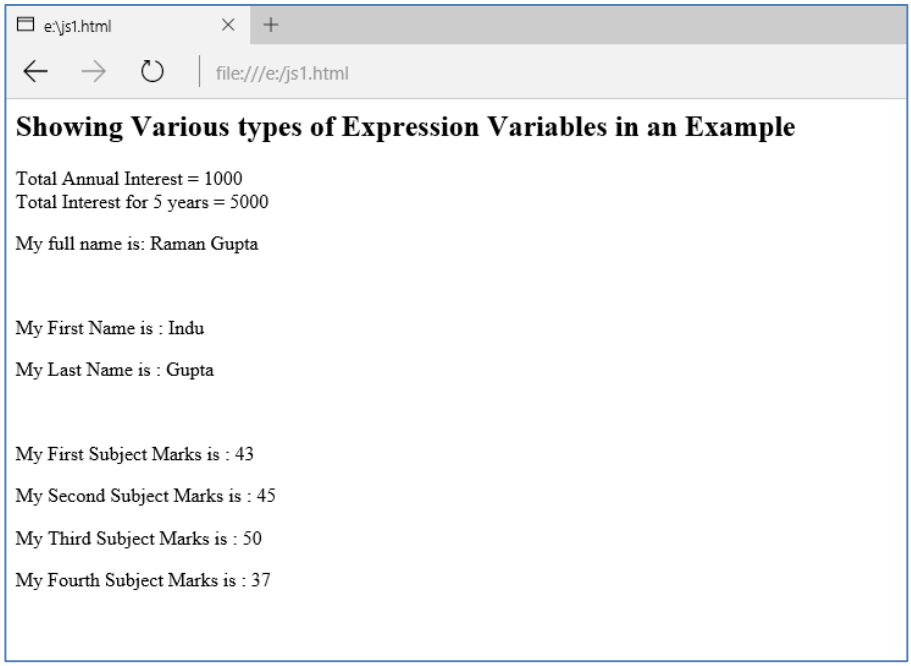
```
<html>
<script
src="http://ajax.googleapis.com/ajax/libs/angularjs/1.4.8/angular.min.js"></script>
<body>
<h2> Showing Various types of Expression Variables in an Example</h2>
        <div ng-app="" ng-init="RateOfInterest=5;PrincipalAmount=20000;Tenure=5;
                                firstName='Raman';lastName='Gupta';
                                personname={firstName:'Indu',lastName:'Gupta'};
                                submarks=[43,45,50,37]">
            Total Annual Interest = {{(RateOfInterest * PrincipalAmount)/100}} <br/>
            Total Interest for 5 years = {{(RateOfInterest * PrincipalAmount * Tenure)/100}}
                <br/>
```

```
            <p>My full name is: {{ firstName + " " + lastName }}</p>  <br/>

            <p>My First Name is : {{ personname.firstName}}</p>
            <p>My Last Name is : {{ personname.lastName}}</p>  <br/>

            <p>My First Subject Marks is : {{ submarks[0]}}</p>
            <p>My Second Subject Marks is : {{ submarks[1]}}</p>
            <p>My Third Subject Marks is : {{ submarks[2]}}</p>
            <p>My Fourth Subject Marks is : {{ submarks[3]}}</p>
        </div>
</body>
</html>
```

Notice that firstName string type variable is different than firstName key of Object personname and AngularJs can easily identify the type of variable in expression evaluation.



Assignment

1.What is Angular JS expressions? Explain with example

2.What are different types of expressions? Explain.