Scripting Lab Assignment

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Sec: A

Create a calculator app using Angular which is capable of performing following operations:

1. Addition of two numbers
2. Subtraction of two numbers
3. Multiplication of two numbers
4. Division of two numbers
5. Factorial of a number
6. Checking if a given number is Prime or not

We have the root component app-root, its child component calculator, and calculator's child component calculator-keys.

Index.html

```
<!doctype html>
<html lang="en">
<head>
  <meta charset="utf-8">
  <title>CalcApp</title>
  <base href="/">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <link rel="icon" type="image/x-icon" href="favicon.ico">
  <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.1/dist/css/bootstrap.min.css" rel="stylesheet" integrity="sha384-
```

```
F3w7mX95PdgyTmZZMECAngseQB83DfGTowi0iMjiWaeVhAn4FJ
kqJByhZMI3AhiU" crossorigin=
"anonymous">
</head>
<body>
  <center><h1>Calculator app</h1></center>
  <app-root></app-root>
  <script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.1.1/dist/js/bootstrap.
bundle.min.js" integrity="sha384-
/bQdsTh/da6pkI1MST/rWKFNjaCP5gBSY4sEBT38Q/9RBh9AH40z
EOg7Hlq2THRZ" crossorigin=
"anonymous"></script>
</body>
</html>
```

App Component app-

component.html

```
<app-calculator></app-calculator>
```

app-component.ts

```
import { Component } from
'@angular/core';
@Component({   selector: 'app-
root',   templateUrl:
'./app.component.html',
styleUrls: ['./app.component.css']
}) export class
AppComponent {
title = 'calc-app';
}
```

app.module.ts

```
import { NgModule } from '@angular/core'; import
{ BrowserModule } from '@angular/platform-
browser';
 import { AppComponent } from './app.component'; import {
CalculatorComponent } from
'./calculator/calculator.component'; import {
CalculatorKeysComponent } from './calculator-
keys/calculatorkeys.component';

@NgModule({
declarations: [
AppComponent,
    CalculatorComponent,
    CalculatorKeysComponent
  ],
  imports: [
    BrowserModule
  ],
  providers: [],
  bootstrap: [AppComponent]
})
export class
AppModule { }
```

Calculator Component

calculator.component.html

```
<div class="calculator">
  <app-calculator-keys></app-calculator-keys>
</div>
```

calculator.component.spec.ts

```
import { ComponentFixture, TestBed } from '@angular/core/testing';
 import { CalculatorComponent } from
'./calculator.component';
 describe('CalculatorComponent', () => {   let
component: CalculatorComponent;   let
fixture:
ComponentFixture<CalculatorComponent>;
   beforeEach(async () => {     await
TestBed.configureTestingModule({
declarations: [ CalculatorComponent
]    })
    .compileComponents();
  });    beforeEach(() => {     fixture =
TestBed.createComponent(CalculatorComponent
);     component = fixture.componentInstance;
fixture.detectChanges();
  });
  it('should create', () => {
expect(component).toBeTruthy();
  });
});
```

Calculator.component.ts

```
import { Component, OnInit } from '@angular/core';

@Component({
selector: 'app-calculator',
  templateUrl: './calculator.component.html',
styleUrls: ['./calculator.component.css']
})
```

```
export class
CalculatorComponent {
}
```

calculator.component.css

```
.calculator {   border: 1px solid #ccc;   border-
radius: 5px;   position:relative;   top: 50%;
left:33%;   width: 400px;
}
```

Calculator-Keys Component

calculator-keys.component.html

```
<input type="text" class="calculator-screen"
[value]="currentNumber" disabled> <div class="calculator-keys">
  <button type="button" (click) = "getfacto()" class="operator"
>!</button>
  <button type="button" (click) = "getPrime()" class="operator"
>Prime</button >
  <button type="button" (click) = "getOperation('+')" class="operator"
value=" +">+</button>
  <button type="button" (click) = "getOperation('-
')" class="operator" value="-">-</button>
  <button type="button" (click) = "getOperation('*')" class="operator"
value=" *">x</button>
  <button type="button" (click) = "getOperation('/')" class="operator"
value="
/">/</button>

  <button type="button" (click) = "getNumber('7')"
value="7">7</button>
  <button type="button" (click) = "getNumber('8')"
value="8">8</button>   <button type="button" (click) =
"getNumber('9')" value="9">9</button>

  <button type="button" (click) = "getNumber('4')"
value="4">4</button>
  <button type="button" (click) = "getNumber('5')"
value="5">5</button>   <button type="button" (click) =
"getNumber('6')" value="6">6</button>

  <button type="button" (click) = "getNumber('1')"
value="1">1</button>
  <button type="button" (click) = "getNumber('2')"
value="2">2</button>   <button type="button" (click) =
"getNumber('3')" value="3">3</button>
```

```
  <button type="button" (click) = "getNumber('0')"
value="0">0</button>   <button type="button" (click) =
"getDecimal()" class="decimal" value=".">.</ button>
  <button type="button" (click) = "clear()" class="all-clear"
value="allclear">AC</button>

  <button type="button" (click) = "getOperation('=')"
class="equalsign" value="=">=</button>
</div>
```

calculator-keys.component.css

```
.calculator-screen {
width: 100%;   font-size:
5rem;   height: 100px;
border: none;
background-color:
#252525;   color: #fff;
text-align: right;
padding-right: 20px;
padding-left: 10px;
}  button {   height: 48px;
background-color: #fff;
border-radius: 3px;   border:
1px solid #c4c4c4;
background-color:
transparent;   font-size:
2rem;   color: #333;
background-image: linear-
gradient(to bottom,transparent,transparent
50%,rgba(0,0,0,.04));   box-
shadow: inset 0 0 0 1px rgba(255,255,255,.05), inset 0 1px 0 0
rgba(255,255,25 5,.45), inset 0 -
1px 0 0 rgba(255,255,255,.15), 0 1px 0 0 rgba(255,255,255,.15);
text-shadow: 0 1px rgba(255,255,255,.4);
}  button:hover {
background-color:
#eaeaea;
}

.operator {
color: #337cac;
```

```
}

.all-clear {   background-
color: #f0595f;   border-
color: #b0353a;   color:
#fff;
}

.all-clear:hover {
  background-color: #f17377;
}

.equal-sign {
background-color:
#2e86c0;   border-color:
#337cac;   color: #fff;
height: 100%;   grid-area:
2 / 4 / 6 / 5;
}

.equal-sign:hover {
  background-color: #4e9ed4;
}

.calculator-keys {   display: grid;
grid-template-columns: repeat(4,
1fr);   grid-gap: 20px;   padding:
20px;
}
```

calculator-keys.component.specs.ts

```
import { ComponentFixture, TestBed } from '@angular/core/testing';

import { CalculatorKeysComponent } from './calculator-
keys.component';

describe('CalculatorKeysComponent', () => {   let
component: CalculatorKeysComponent;   let
fixture:
ComponentFixture<CalculatorKeysComponent
>;
  beforeEach(async ()
=> {
   await
TestBed.configureTestingModule({
declarations: [ CalculatorKeysComponent ]
})
   .compileComponents();
 });    beforeEach(() => {     fixture =
TestBed.createComponent(CalculatorKeysCompone
nt);     component = fixture.componentInstance;
fixture.detectChanges();
 });    it('should create', () => {
expect(component).toBeTruth
y();
 });
});
```

Calculator-keys.component.ts

```
import { Component, OnInit } from '@angular/core';

@Component({   selector: 'app-calculator-
keys',   templateUrl: './calculator-
keys.component.html',   styleUrls:
['./calculator-keys.component.css']
}) export class
CalculatorKeysComponent{
currentNumber = '0';
firstOperand= 0;   operator = "";
waitForSecondNumber = false;
public getNumber(v: string){
console.log(v);
if(this.waitForSecondNumber)
   {
this.currentNumber = v;
     this.waitForSecondNumber = false;
   }else{
     this.currentNumber === '0'? this.currentNumber = v:
this.currentNumber + = v;

   }   }   getDecimal(){
if(!this.currentNumber.includes('.')){
this.currentNumber += '.';
   }   }
getPrime()
{
```

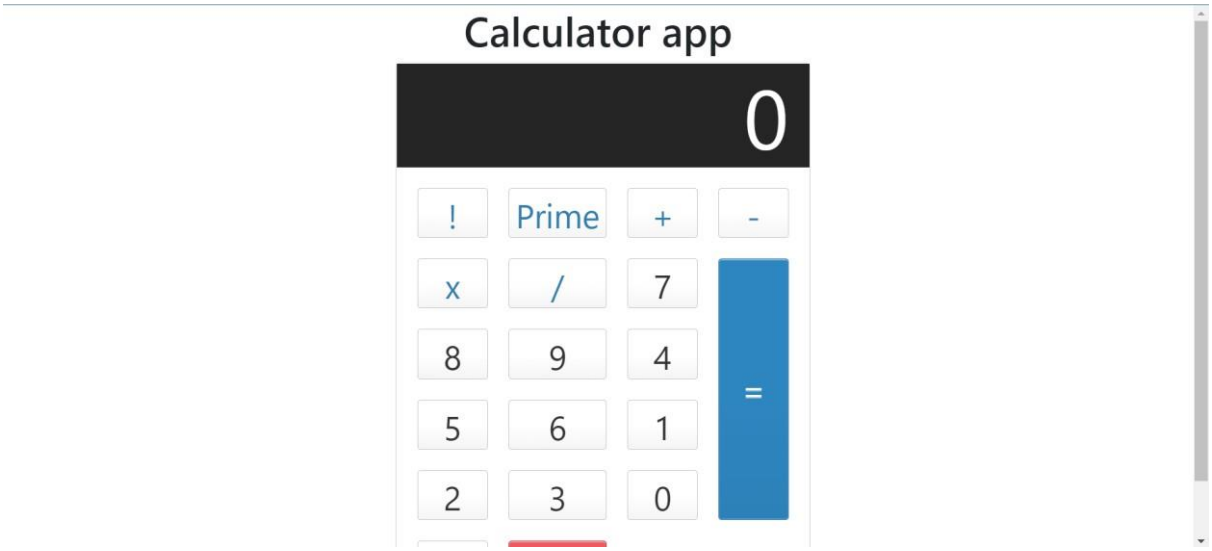
```
   const num = Number(this.currentNumber);     let
flag = 0;     if(num < 2){         this.currentNumber =
"Neither Prime nor Composite"
   }     for (let k = 2; k < num;
k++){       if( num % k == 0){
flag =1;
     }     }     if(flag==0){
this.currentNumber = "Prime"
   }     else{
this.currentNumber =
"Composite"
   }   }   getfacto(){     const num=
Number(this.currentNumber);     let
answer = 1;     if (num == 0 || num ==
1){       this.currentNumber= "1";
   }     else{       for(var i = num;
i >= 1; i--){         answer =
answer * i;
     }       this.currentNumber =
String(answer);
   }   }
  private doCalculation(op:string ,
secondOp:number){     switch (op){       case
'+':
     return this.firstOperand += secondOp;
case '-':
     return this.firstOperand -= secondOp;
case '*':
     return this.firstOperand *= secondOp;
case '/':
     return this.firstOperand /= secondOp;
case '=':
```

```
      return secondOp;
    }     return
secondOp;
  }   public getOperation(op:
string){     console.log(op);
if(this.firstOperand === null){
```

```
    this.firstOperand =
Number(this.currentNumber);
   }else if(this.operator){       const result  =
this.doCalculation(this.operator , Number(this.currentNu mber)) as
number       this.currentNumber = String(result);       this.firstOperand
= result;
   }            this.operator   =   op;
this.waitForSecondNumber      =
true;

console.log(this.firstOperand);
  }   public clear(){
this.currentNumber = '0';
this.firstOperand = 0;
this.operator = "";
this.waitForSecondNumber =
false;   }
}
```

Screenshot of App



Screenshot of all installations taken in vs code