Scripting Lab Assignment

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Section: A

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Objective:
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

index.html

```
<!doctype html>
<html lang="en">
<head>
<meta charset="utf-8">

<title>Calculator</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="sha384F3w7mX95PdgyTmZZMECAngseQB83DfGTowi0iMjiWaeVhAn4FJkqJByhZM
I3AhiU" 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/9RBh9AH40zEOg7Hlq2
THRZ" crossorigin="anonymous"></script>
</body></html>
```

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/calculator-keys.component';

@NgModule({

declarations: [
AppComponent,
CalculatorComponent,

CalculatorKeysComponent
],

imports: [
BrowserModule
],
providers: [],
bootstrap: [AppComponent]

})

export class AppModule { }
```

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-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="all-clear">AC</button>
<button type="button" (click) = "getOperation('=')" class="equal-sign"
value="=">=</button>
</div>
```

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(CalculatorKeysComponent); component =
fixture.componentInstance; fixture.detectChanges();
});
it('should create', () => {
expect(component).toBeTruthy();
});
});
```

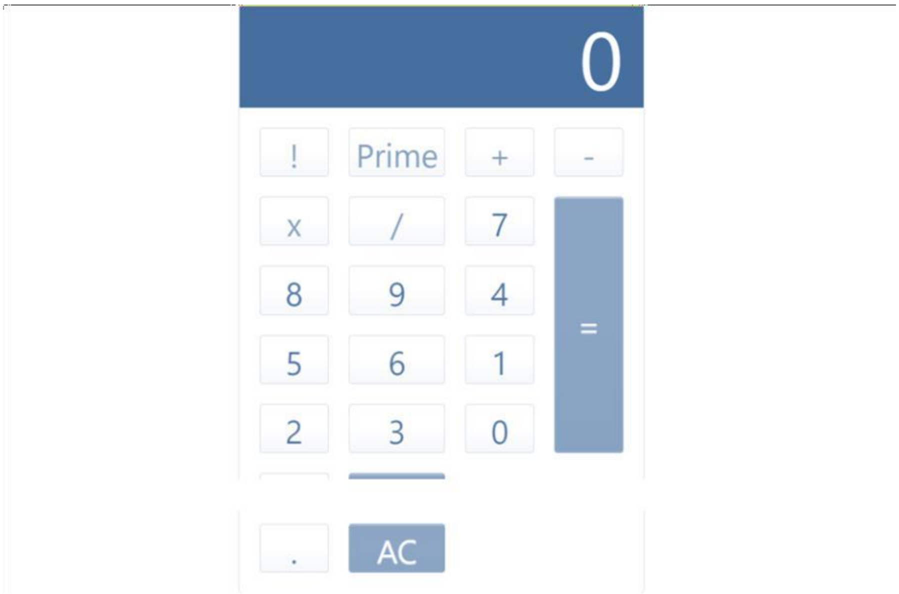
Calculator-keys.component.ts

```
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


0
!
Prime
+
-
x
/
7
8
9
4
=
5
6
1
2
3
0
.
AC