

Capstone Project Angular

Angular Calculator - MyAppCalc

Project Integration: Must Implement the concepts like AppComponent, HTML, CSS with Bootstrap, Template Driven Form, Two Way Data Binding, Component Properties and Control Statement to develop the app.

Components Required: AppComponent.

Project Layout: Create a Create a TDF which should contain 1 main heading, 1 input field and a table with several number and operand buttons in AppComponent with some custom CSS and bootstrap classes applied.

GITHUB: https://github.com/xrahulcrx/Angular_Project_Submission_Rahul

Project Overview

The Angular Calculator is a single-page application created using Angular CLI with routing enabled from the start. The calculator is rendered via Angular Router, showcasing proper SPA (Single Page Application) architecture.

Features

- **Operations** : Addition, Subtraction, Multiplication, Division, Modulo (%) support
- Decimal handling with validation (prevents multiple dots)
- Backspace support
- Clear (C) functionality
- Operator validation (prevents invalid sequences like ++, *-)
- Result state handling
- Angular Routing implemented
- Responsive & centered layout
- Dark theme calculator UI

Project Setup Commands

Angular project created with routing enabled

```
ng new myappcalc --routing
```

Calculator component generated

```
ng g c calculator
```

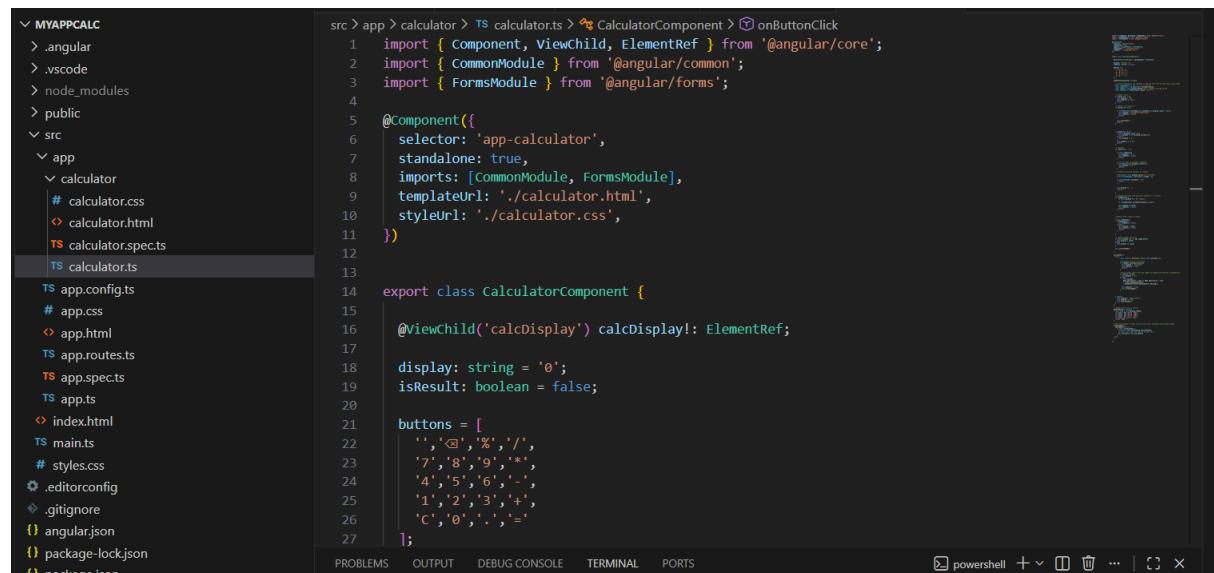
Default route configuration

```
myappcalc > src > app > ts app.routes.ts > ...
1 import { RouterModule, Routes } from '@angular/router';
2 import { CalculatorComponent } from './calculator/calculator';
3 import { NgModule } from '@angular/core';
4
5 export const routes: Routes = [
6   {path: '', component: CalculatorComponent, pathMatch:'full'},
7 ];
8
9 @NgModule({
10   {
11     imports: [RouterModule.forRoot(routes)],
12     exports:[RouterModule]
13   }
14 )
15
16 export class AppRoutingModule{
17 }
```

Router outlet used in root template:

```
myappcalc > src > app > app.html > ...
    Go to component
1  <nav class="navbar navbar-dark bg-dark">
2
3      <div class="container-fluid">
4          |  <span class="navbar-brand m-0 h1"> Angular Calculator</span>
5      </div>
6
7  </nav>
8
9
10 <div class="container mt-4">
11 |  <router-outlet></router-outlet>
12 </div>
13
```

Calculator Component using FormsModule, Component, ViewChild, ElementRef



The screenshot shows the VS Code interface with the project structure on the left and the calculator component's code editor on the right.

Project Structure:

- MYAPPCALC
- src
- app
- calculator
- calculator.ts
- calculator.html
- calculator.spec.ts
- calculator.ts
- app.config.ts
- app.css
- app.html
- app.routes.ts
- app.spec.ts
- app.ts
- index.html
- main.ts
- styles.css
- .editorconfig
- .gitignore
- angular.json
- package-lock.json
- node_modules

calculator.ts (Code Editor):

```
import { Component, ViewChild, ElementRef } from '@angular/core';
import { CommonModule } from '@angular/common';
import { FormsModule } from '@angular/forms';

@Component({
  selector: 'app-calculator',
  standalone: true,
  imports: [CommonModule, FormsModule],
  templateUrl: './calculator.html',
  styleUrls: ['./calculator.css'],
})
export class CalculatorComponent {
  @ViewChild('calcDisplay') calcDisplay!: ElementRef;
  display: string = '0';
  isResult: boolean = false;
  buttons = [
    '',
    'C',
    '/',
    '%',
    '*',
    '7',
    '8',
    '9',
    '+',
    '4',
    '5',
    '6',
    '-',
    '1',
    '2',
    '3',
    '+',
    '0',
    '.',
    '='
  ];
}
```

VS Code status bar: PROBLEMS, OUTPUT, DEBUG CONSOLE, TERMINAL, PORTS, powershell, ...

How to Run the Project

Install dependencies

```
npm install
```

Start development server

```
ng serve
```

Open in browser

<http://localhost:4200>

UNTITLED (WORKSPACE)

myappcalc

- > vscode
- > node_modules
- > public
- src
- app
 - calculator
 - # calculator.css
 - calculator.html
 - TS calculator.spec.ts
 - TS calculator.ts
 - TS app.config.ts
 - # app.css
 - app.html
 - TS app.routes.ts
 - TS app.spec.ts
 - TS app.ts
 - index.html
 - TS main.ts
 - # styles.css
 - .editorconfig
 - .gitignore
 - { angular.json
 - { package-lock.json
 - { package.json
 - README.md
 - { tsconfig.app.json
 - tsconfig.json

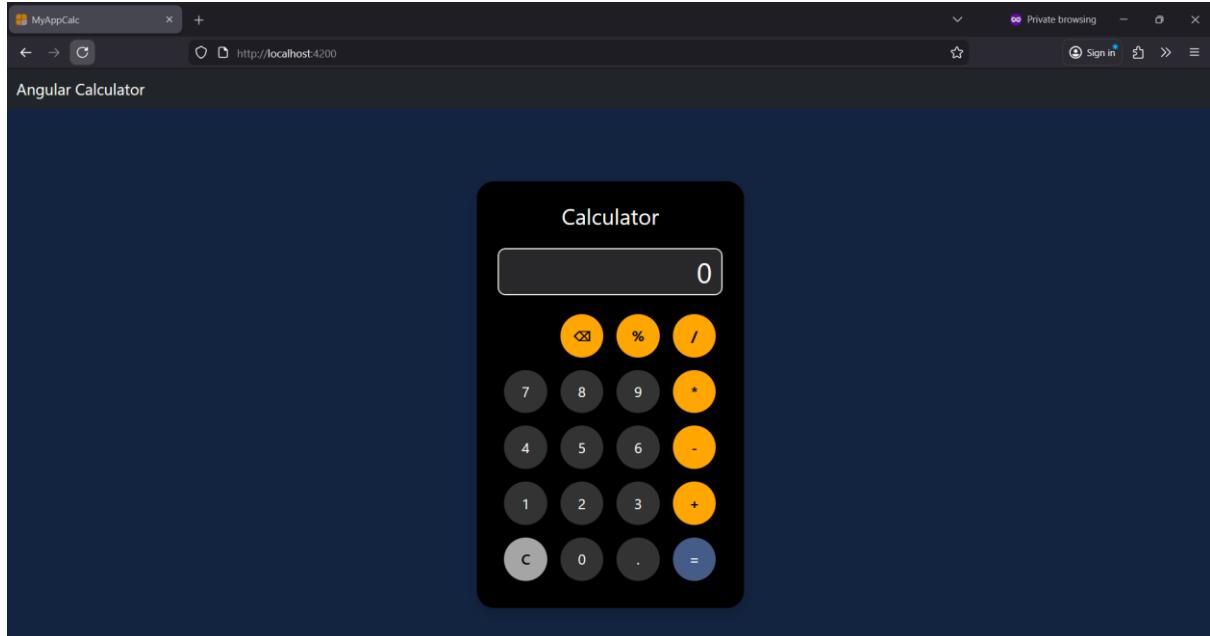
```
myappcalc > src > app > app.html ...
Go to component
1  <nav class="navbar navbar-dark bg-dark">
2    <div class="container-fluid">
3      <span class="navbar-brand m-0 h1"> Angular Calculator</span>
4    </div>
5
6  </nav>
7
8
9
10 <div class="container mt-4">
11   <router-outlet></router-outlet>
12 </div>
13
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

esbuild ▲ + ×

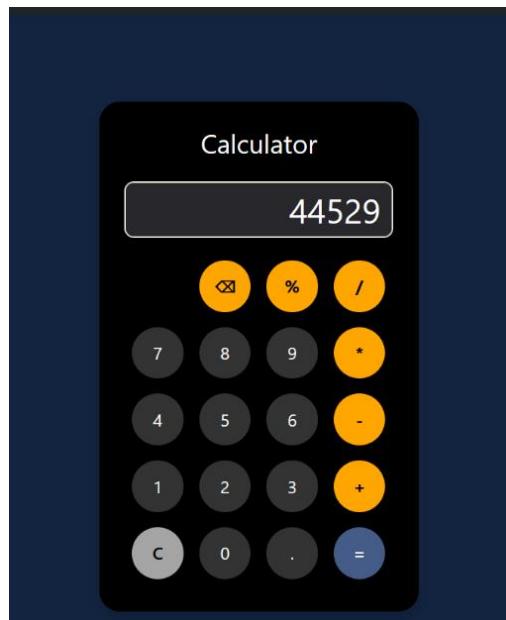
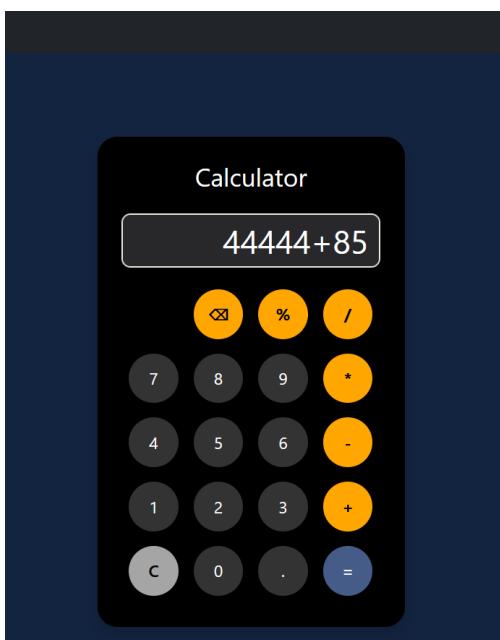
```
PS E:\angular\myappcalc> ng serve
Initial chunk files | Names | Raw size
styles.css | styles | 277.07 kB |
main.js | main | 18.96 kB |
| Initial total | 296.03 kB

Application bundle generation complete. [1.363 seconds] - 2025-12-24T13:53:25.999Z
Watch mode enabled. Watching for file changes...
NOTE: Raw file sizes do not reflect development server per-request transformations.
→ Local: http://localhost:4200/
→ press h + enter to show help
```

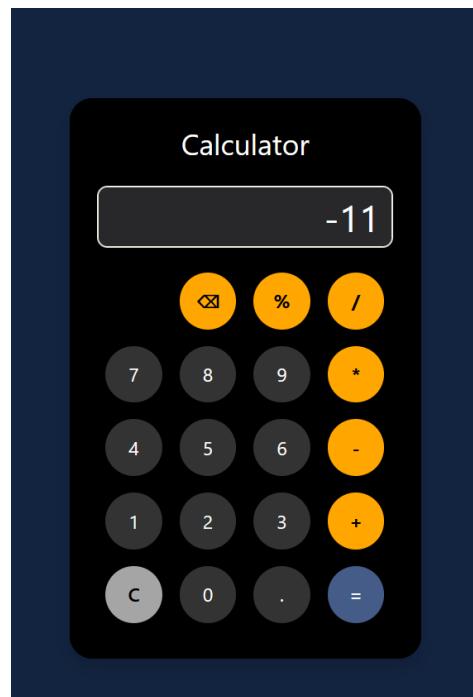
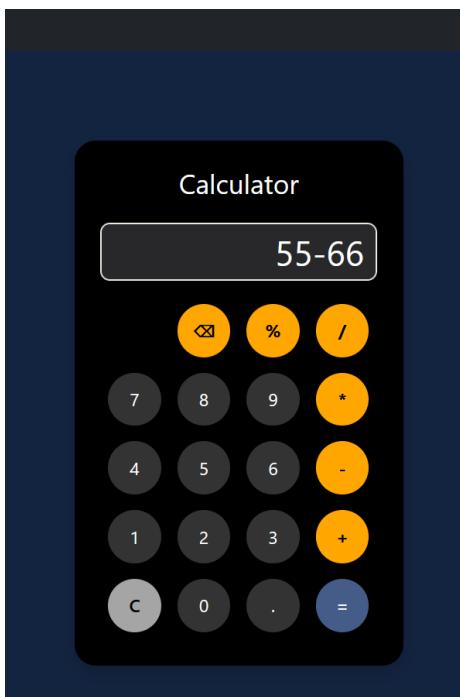


Operations:

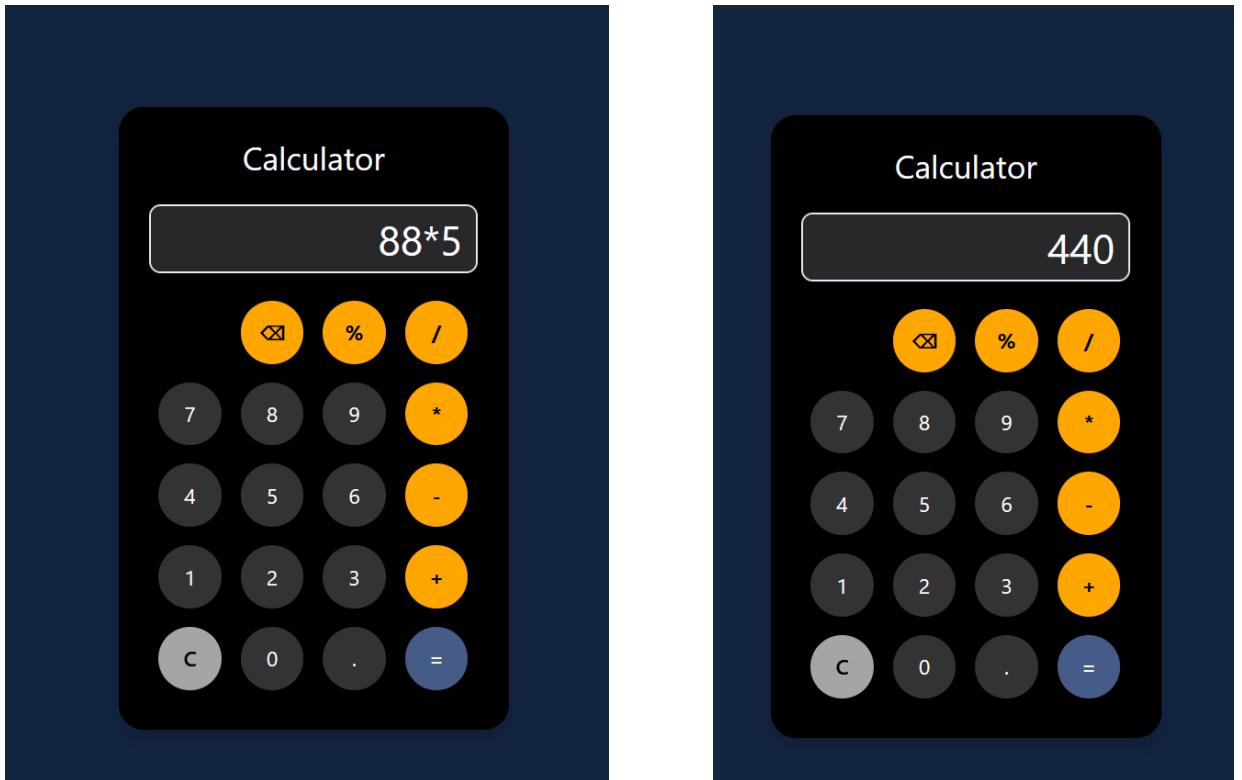
Addition:



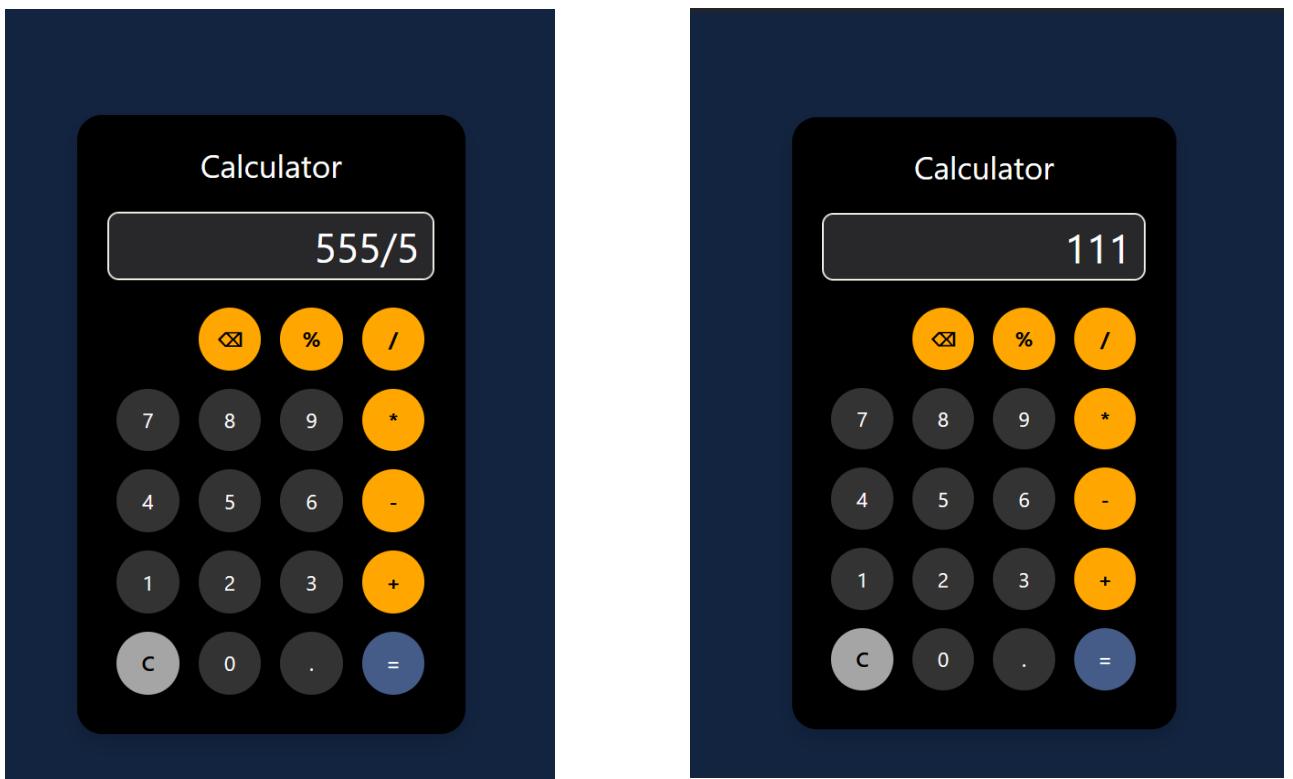
Subtraction:



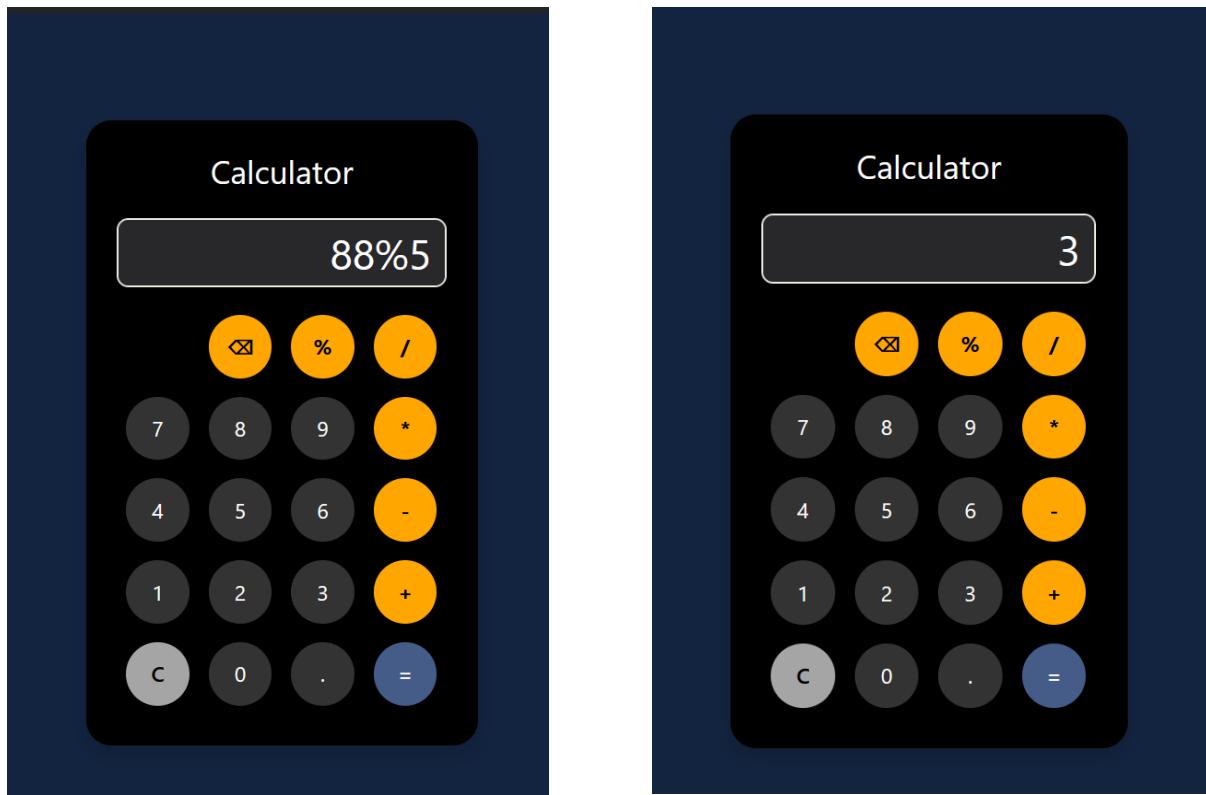
Multiplication:



Division:



Modulo:



Dynamic Size Change in Display of Calculator:

