**Slip 1(a) Write an Angular 13 application addition of two numbers using ng-init, ng-model & ng-bind. And also demonstrate ng-show, ng-disabled, ng-click directives on button component.**

a) ng new slip1

b) cd slip1

c) open app.component.ts

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


@Component({
  selector: 'app-root',
  templateUrl: './app.component.html',
  styleUrls: ['./app.component.css']
})
export class AppComponent {
  num1: number = 0;
  num2: number = 0;
  result: number = 0;
  disableButton: boolean = false;
  showResult: boolean = false;

  add(): void {
    this.result = this.num1 + this.num2;
    this.disableButton = true;  // Disable the button after calculation
    this.showResult = true;      // Show the computed result
  }
}
```

2)app.component.html

```
<div>
   <h2>Add Two Numbers</h2>
 <label>
     First Number:
```

```
    <input type="number" [(ngModel)]="num1">
   </label> <br>
  <label>
    Second Number:
    <input type="number" [(ngModel)]="num2">
   </label>
   <br><br>

   <button (click)="add()" [disabled]="disableButton">
    Compute Sum
   </button>
   <br><br>

   <h3 *ngIf="showResult">
    Result: {{ result }}
   </h3>
</div>
```

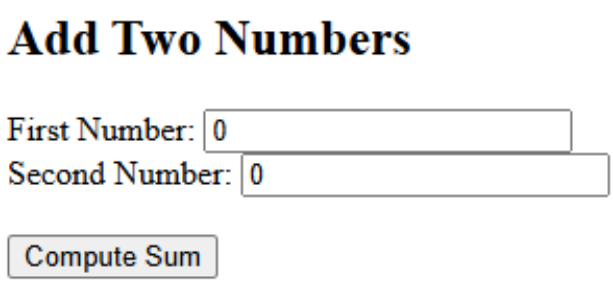
3) app.module.ts

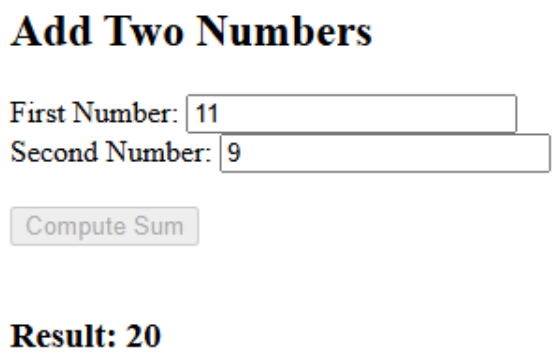
```
import { NgModule } from '@angular/core';
import { BrowserModule } from '@angular/platform-browser';
import { FormsModule } from '@angular/forms';
import { AppComponent } from './app.component';

@NgModule({
  declarations: [
   AppComponent
  ],
  imports: [
   BrowserModule,FormsModule
  ],
```

```
  providers: [],
  bootstrap: [AppComponent]
})
export class AppModule { }
```

Run project -

ng serve -o



**2) Write an AngularJS script to print details of bank (bank name, MICR code, IFC code, address etc.) in tabular form using ng-repeat.**

```
import { Component } from '@angular/core';
interface Bank {
name: string;
micr: string;
ifsc: string;
address: string;
}
@Component({
selector: 'app-root',
templateUrl: './app.component.html',
styleUrls: ['./app.component.css']
})
export class AppComponent {
banks: Bank[] = [
{
name: 'HDFC',
micr: '123456789',
ifsc: 'FNB0001234',
address: 'Chinchwad'
},
{
name: 'SBI',
micr: '987654321',
ifsc: 'PTB0009876',
address: 'Pimpri'
},
{
name: 'TJSB',
micr: '987654323',
ifsc: 'TJB0009876',
```

```
address: 'Pune'
},
];
}
<div>
<h2>Bank Details</h2>
<table>
<thead>
<tr>
<th>Bank Name</th>
<th>MICR Code</th>
<th>IFSC Code</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr *ngFor="let bank of banks">
<td>{{ bank.name }}</td>
<td>{{ bank.micr }}</td>
<td>{{ bank.ifsc }}</td>
<td>{{ bank.address }}</td>
</tr>
</tbody>
</table>
</div>
```

Add formsModule in app.module.ts

```
import { NgModule } from '@angular/core';
import { BrowserModule } from '@angular/platform-browser';
import { FormsModule } from '@angular/forms';
import { AppRoutingModule } from './app-routing.module';
```

```
import { AppComponent } from './app.component';

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

**********output-**********

ng serve -o


# Bank Details

| Bank Name | MICR Code | IFSC Code | Address |
|---|---|---|---|
| HDFC | 123456789 | FNB0001234 | Chinchwad |
| SBI | 987654321 | PTB0009876 | Pimpri |
| TJSB | 987654323 | TJB0009876 | Pune |

**3) Find a company with a workforce greater than 30 in the array (use find by id method)**

```
import { Component } from '@angular/core';
interface Company {
id: number;
name: string;
workforce: number;
}
@Component({
selector: 'app-root',
templateUrl: './app.component.html',
styleUrls: ['./app.component.css']
})
export class AppComponent {
companies: Company[] = [ { id: 1, name: 'Alpha Corp', workforce: 25 },
{ id: 2, name: 'Beta Ltd', workforce: 45 },
{ id: 3, name: 'Gamma LLC', workforce: 30 }
];
foundCompany?: Company;
findCompany(): void {
this.foundCompany = this.companies.find(c => c.workforce > 30);
}
}
```

app.component.html

```
<div class="container">
<h2>Company Search by Workforce</h2>
<button (click)="findCompany()">
Find Company with Workforce > 30
</button>
<div *ngIf="foundCompany; else notFound">
<h3>Found Company:</h3>
<p><strong>ID:</strong> {{ foundCompany.id }}</p>
<p><strong>Name:</strong> {{ foundCompany.name }}</p>
<p><strong>Workforce:</strong> {{ foundCompany.workforce }}</p>
</div>
<ng-template #notFound>
<p>No company found with workforce greater than 30.</p>
</ng-template>
</div>
```

**********output-**********

## Company Search by Workforce

Find Company with Workforce > 30

### Found Company:

**ID:** 2

**Name:** Beta Ltd

**Workforce:** 45

**4) Write an Angular to display list of games stored in an array on click of button using ng-click and also demonstrate ng-init, ng-bind directive of AngularJS.**

app.component.ts

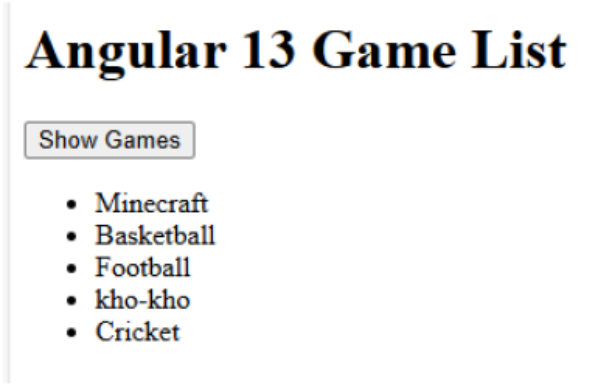
```
import { Component, OnInit } from '@angular/core';
@Component({
selector: 'app-root',
templateUrl: './app.component.html',
styleUrls: ['./app.component.css']})
export class AppComponent implements OnInit {
title = 'Angular 13 Game List';
games: string[] = [];
showGamesList = false;
constructor() {}
ngOnInit(): void {
// Initialize any default values here
this.games = []; // Empty by default
}
showGames(): void {
this.games = [
'Minecraft',
'Basketball',
'Football',
'kho-kho',
'Cricket'
];
this.showGamesList = true;
}
}
```

app.component.html

```
<h1>{{ title }}</h1>
<button (click)="showGames()">Show Games</button>
```

```
<ul *ngIf="showGamesList">
<li *ngFor="let game of games">{{ game }}</li>
</ul>
```

**********output-**********



**5) Create a simple Angular component that takes input data and displays it.**

**ng g c user**

user.component.ts

```
import { Component, OnInit, Input } from '@angular/core';
@Component({
selector: 'app-user',
templateUrl: './user.component.html',
styleUrls: ['./user.component.css']
})
export class UserComponent implements OnInit {
@Input() userName!: string;
@Input() userEmail!: string;
constructor() { }
ngOnInit(): void {
console.log("Username:", this.userName);
console.log("User Email:", this.userEmail);
}
}
```

user.component.html

```
import { Component, OnInit, Input } from '@angular/core';
@Component({
selector: 'app-user',
templateUrl: './user.component.html',
styleUrls: ['./user.component.css']
})
export class UserComponent implements OnInit {
@Input() userName!: string;
@Input() userEmail!: string;
constructor() { }
ngOnInit(): void {
```

```
console.log("Username:", this.userName);
console.log("User Email:", this.userEmail);
}
}
```

app.component.ts

```
import { Component } from '@angular/core';
@Component({
selector: 'app-root',
templateUrl: './app.component.html',
styleUrls: ['./app.component.css']
})
export class AppComponent {
title = 'inputcomponent';
name = 'Soham kale';
email = 'soham.kale@example.com';
}
```

app.component.html

```
<h2>{{ title }}</h2>
<!-- Passing data to child component -->
<app-user [userName]="name" [userEmail]="email"></app-user>
```

**********output-**********

**6) Create Angular 13application that print the name of students who got 85% using filter and map method.**

app.component.ts

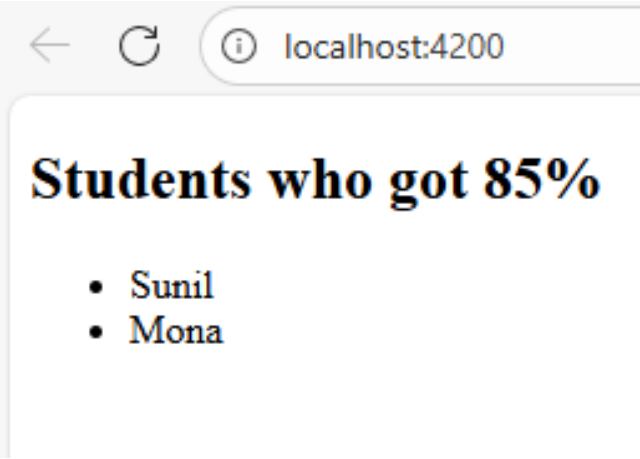
```
import { Component, OnInit } from '@angular/core';

interface Student {
  name: string;
  percentage: number;
}

@Component({
  selector: 'app-root',
  templateUrl: './app.component.html',
  styleUrls: ['./app.component.css']
})
export class AppComponent implements OnInit {
  students: Student[] = [
    { name: 'Ram', percentage: 90 },
    { name: 'Sunil', percentage: 85 },
    { name: 'Suresh', percentage: 82 },
    { name: 'Mona', percentage: 85 },
    { name: 'Sona', percentage: 78 },
  ];

  studentsWith85: string[] = [];

  ngOnInit(): void {
    this.studentsWith85 = this.students
      // filter those whose percentage is exactly 85
      .filter(s => s.percentage === 85)
```

```
    // then map to just the names
    .map(s => s.name);
  }
}
```

app.component.html

```
<h2>Students who got 85%</h2>
<ul>
  <li *ngFor="let name of studentsWith85">{{ name }}</li>
</ul>
```

**********output-**********



**7) Fetch the details using ng-repeat in AngularJS**

```
<!DOCTYPE html>
<html>

<head>
   <script src=
"https://ajax.googleapis.com/ajax/libs/angularjs/1.6.9/angular.min.js">
   </script>
   <title>
       Fetching the details using the ng-repeat Directive
    </title>
   <style>
      body {
         text-align: center;
         font-family: Arial, Helvetica, sans-serif;
      }

      table {
         margin-left: auto;
         margin-right: auto;
      }
   </style>
</head>

<body ng-app="myTable">
   <h1 style="color:green">GeeksforGeeks</h1>
   <h3>
      Fetching the details using the ng-repeat Directive
   </h3>
```

```
<table ng-controller="control" border="2">
  <tr ng-repeat="x in records">
    <td>{{x.Country}}</td>
    <td>{{x.Capital}}</td>
  </tr>
</table>

<script>
  var app = angular.module("myTable", []);
  app.controller("control", function ($scope) {
    $scope.records = [
      {
        "Country": "India",
        "Capital": "Delhi"
      },
      {
        "Country": "America ",
        "Capital": "Washington, D.C. "
      },
      {
        "Country": "Germany",
        "Capital": "Berlin"
      },
      {
        "Country": "Japan",
        "Capital": "Tokyo"
      }
    ]
  });
</script>
</body>
```

</html>

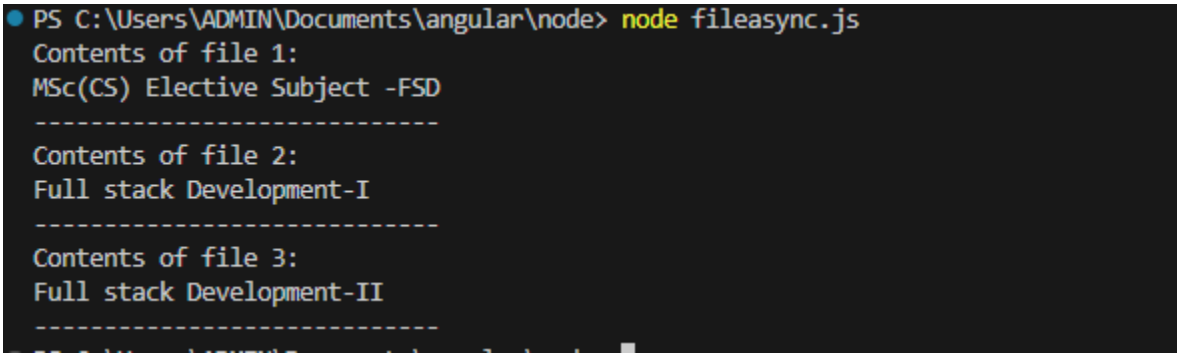
**********output-
**********

| India | Delhi |
| --- | --- |
| America | Washington, D.C. |
| Germany | Berlin |
| Japan | Tokyo |

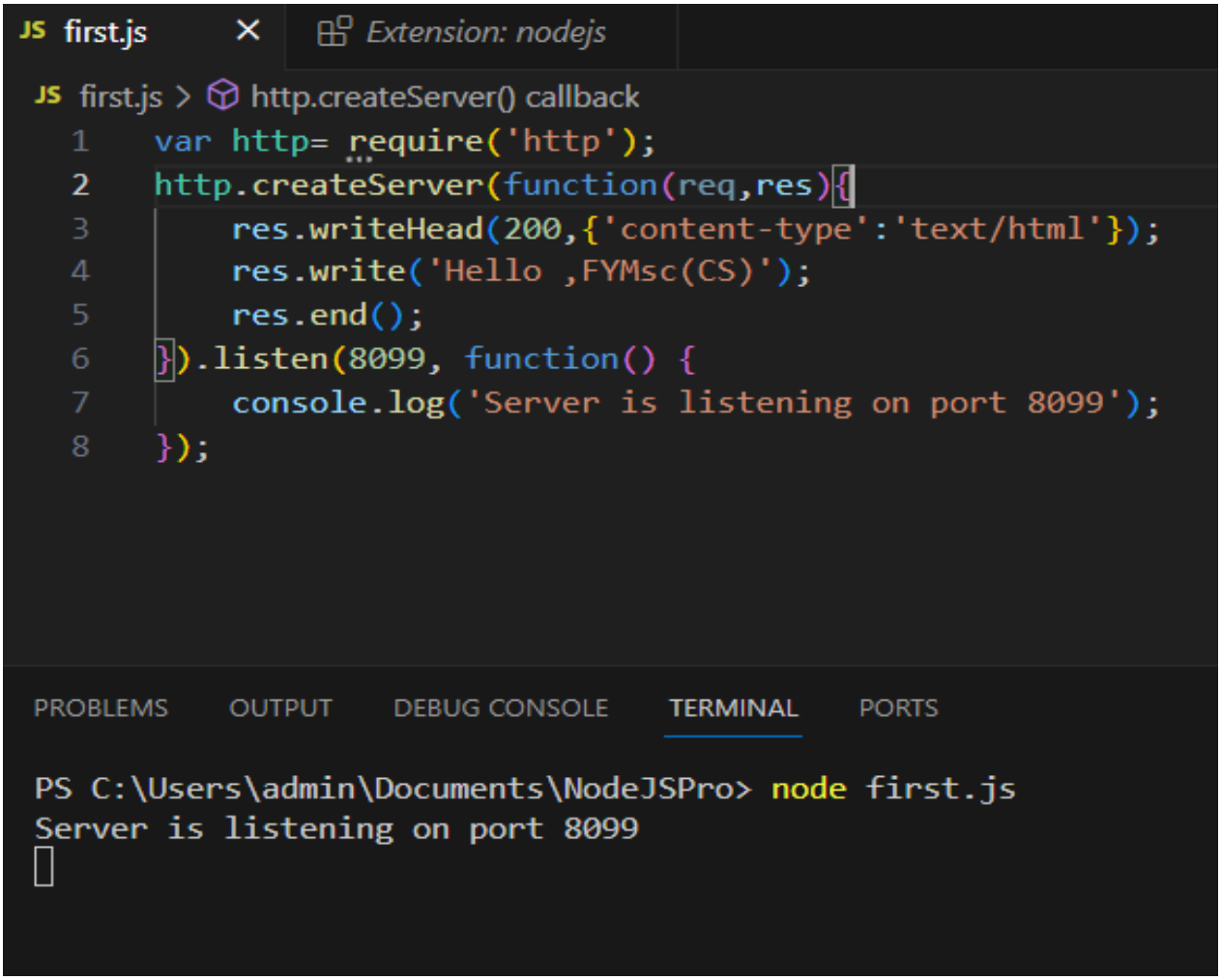
**8) Create a Node.js application that reads data from multiple files asynchronously using promises and async/await**

```
// Import the 'fs/promises' module for asynchronous file system operations
const fs = require('fs').promises;

// Asynchronous function to read multiple files
async function readFiles(filePaths) {
  try {
    // Read all files asynchronously using Promise.all
    const fileContents = await Promise.all(
      filePaths.map(file => fs.readFile(file, 'utf8'))
    );

    // Display content of each file
    fileContents.forEach((content, index) => {
      console.log(`\n📄 Contents of file ${index + 1} (${filePaths[index]}):`);
      console.log(content);
      console.log('----------------------------');
    });

  } catch (error) {
    console.error(" ❌ Error reading files:", error.message);
  }
}

// Define the file paths (make sure these files exist in your directory)
const files = ['file1.txt', 'file2.txt', 'file3.txt'];

readFiles(files);
```

**********output-
**********


PS C:\Users\ADMIN\Documents\angular\node> node fileasync.js
Contents of file 1:
MSc(CS) Elective Subject -FSD
---
Contents of file 2:
Full stack Development-I
---
Contents of file 3:
Full stack Development-II
---

**9) Implement a simple server using Node.js.**



**10) Develop an Express.js application that defines routes for Create, Update operations on a resource (Employee).**

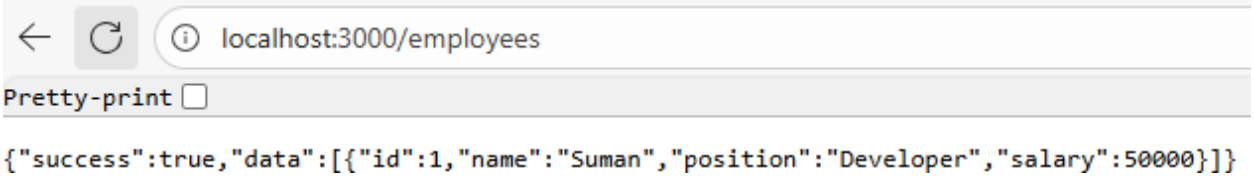
```
app.use(express.json());

 let employees = [
   {
      id: 1,
      name: 'Suman',
      position: 'Developer', salary:
      50000
   }
];
let nextEmployeeId = 2;

// CREATE a new employee
// POST /employees
// Body expected: { name: string, position: string, salary: number } app.post('/employees', (req, res
=> {
   const { name, position, salary } = req.body;

   // Validate input
   if (!name || typeof name !== 'string') {
      return res.status(400).json({ success: false, message: 'Name is required and must be
a string' });
   }
   if (!position || typeof position !== 'string') {
      return res.status(400).json({ success: false, message: 'Position is required and must be a string'
});
   }
   if (salary === undefined || typeof salary !== 'number') {
      return res.status(400).json({ success: false, message: 'Salary is required and must be a
number' });
   }
   const newEmployee = {
      id: nextEmployeeId++, name,
      position, salary
   };
   employees.push(newEmployee);
```

```
  res.status(201).json({ success: true, data: newEmployee });
});

// UPDATE an existing employee
// PUT /employees/:id
// Body can include name, position, salary (one or more) app.put('/employees/:id', (req, res) => {
  const id = parseInt(req.params.id, 10); if
  (isNaN(id)) {
    return res.status(400).json({ success: false, message: 'Invalid employee ID' });
  }

  const employee = employees.find(emp => emp.id === id); if
  (!employee) {
    return res.status(404).json({ success: false, message: 'Employee not found' });
  }

  const { name, position, salary } = req.body;

  // Validate each field if present if (name !==
  undefined) {
    if (typeof name !== 'string') {
      return res.status(400).json({ success: false, message: 'Name must be a string' });
    }
    employee.name = name;
  }
  if (position !== undefined) {
    if (typeof position !== 'string') {
      return res.status(400).json({ success: false, message: 'Position must be a string' });
    }
    employee.position = position;
  }
  if (salary !== undefined) {
    if (typeof salary !== 'number') {
```

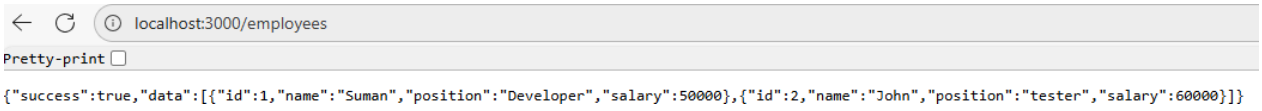
```
            return res.status(400).json({ success: false, message: 'Salary must be a number' });
        }
        employee.salary = salary;
    }

    res.json({ success: true, data: employee });
``

// Optional: GET to view all or one employee app.get('/employees',
(req, res) => {
    res.json({ success: true, data: employees });



// Start server const PORT =
3000;

app.listen(PORT, () => {
    console.log(`Employee API running on port ${PORT}`);
```

**********output-**********

```
PS C:\Users\ADMIN\Documents\angular\node> node employee.js
Employee API running on port 3000
```



```
PS C:\Users\ADMIN\Documents\angular> Invoke-RestMethod `
>>    -Uri "http://localhost:3000/employees" `
>>    -Method POST `
>>    -Headers @{ "Content-Type" = "application/json" } `
>>    -Body '{"name":"John","position":"tester","salary":60000}'
3;C
success data
------- ----
   True @{id=2; name=John; position=tester; salary=60000}
```




Update request

```
PS C:\Users\ADMIN\Documents\angular> Invoke-RestMethod `
>>    -Uri "http://localhost:3000/employees/1" `
>>    -Method PUT `
>>    -Headers @{ "Content-Type" = "application/json" } `
>>    -Body '{"position":"Senior Developer","salary":75000}'

success data
------- ----
   True @{id=1; name=Suman; position=Senior Developer; salary=75000}
```