Sprint-2 Plan

Employee Detail Management

1. Establishing Project Folder Architecture
2. Server App Initialization
3. **Sprint-2 Execution** [2(a), 2(b), **2(c)**(i)**(ii)**(iii), 2(d), 2(e), 2(f)]
4. Completing Sprint-1 Objectives

2(a) Employee Module - Analysis, Design & DB-Preparation

2(b) Employee View

2(c) Employee Search

Design Search Criteria
Server App Modifications
Client App Modifications

2(d) Employee Insert
2(e) Employee Update
2(f) Employee Delete

===

2(c) Employee Search

1. Design Search Criteria
   Define Search Attributes/Lists Required for Search Panels/SQL Quarries Needed

2. Server-App Modification
   Implement Listing Services
   Implement Searching Service
   (1) Using Controller Filtering
   (2) Using QBE/ Named Queries/ Native Queries

3. Client-App Modification

   1. Implement Service Calls and Test
   2. Create Search Form and Observe auto binding Combo Boxes
   3. Implement Search Functionality
   4. Implement Search-Clear Functionality
   5. Create Confirm Dialog and integrate with Search Clear Confirmation

===

1. Content of the "5-Delete" of the "Client-App" folder at the End of Sprint-2 "View" Completion
(Make sure you must start from here)

Projects > Earth-University-College > Client-App > Sprint-2 >

Name
- 1-View
- 2-Search
- 3-Insert
- 4-Update
- 5-Delete

Projects > Earth-University-College > Client-App > Sprint-2 > 5-Delete >

Name
- .angular
- .git
- .idea
- node_modules
- src
- .editorconfig
- .gitignore
- angular.json
- package.json
- package-lock.json
- README.md
- tsconfig.app.json
- tsconfig.json
- tsconfig.spec.json

Projects > Earth-University-College > Client-App > Sprint-2 > 5-Delete > src >

Name
- app
- assets
- favicon.ico
- index.html
- main.ts
- styles.css

Projects > Earth-University-College > Client-App > Sprint-2 > 5-Delete > src > app >

Name
- entity
- service
- util
- view
- app.component.css
- app.component.html
- app.component.spec.ts
- app.component.ts
- app.module.ts
- app-routing.module.ts

Projects > Earth-University-College > Client-App > Sprint-2 > 5-Delete > src > app > view >

Name
- configuration
- dashboard
- home
- login
- mainwindow
- modules

Client-App > Sprint-2 > 5-Delete > src > app > view > modules >

Name
- course
- employee
- user

Client-App > Sprint-2 > 5-Delete > src > app > view > modules > employee

Name
- employee.component.css
- employee.component.html
- employee.component.ts

Client-App > Sprint-2 > 5-Delete > src > app > service

Name
- AuthenticateService.ts
- employeeservice.ts

Client-App > Sprint-2 > 5-Delete > src > app > entity

Name
- designation.ts
- employee.ts
- employeestatus.ts
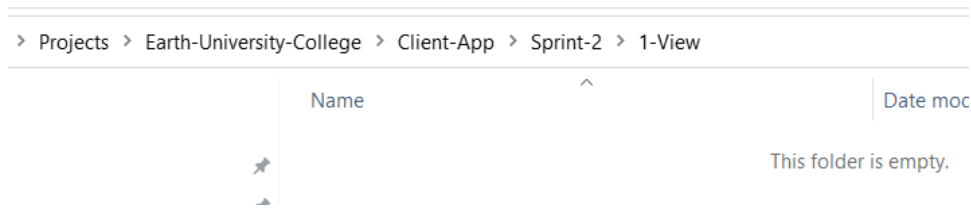- gender.ts

Client-App > Sprint-2 > 5-Delete > src > app > util > ui

Name
- ui.assist.ts

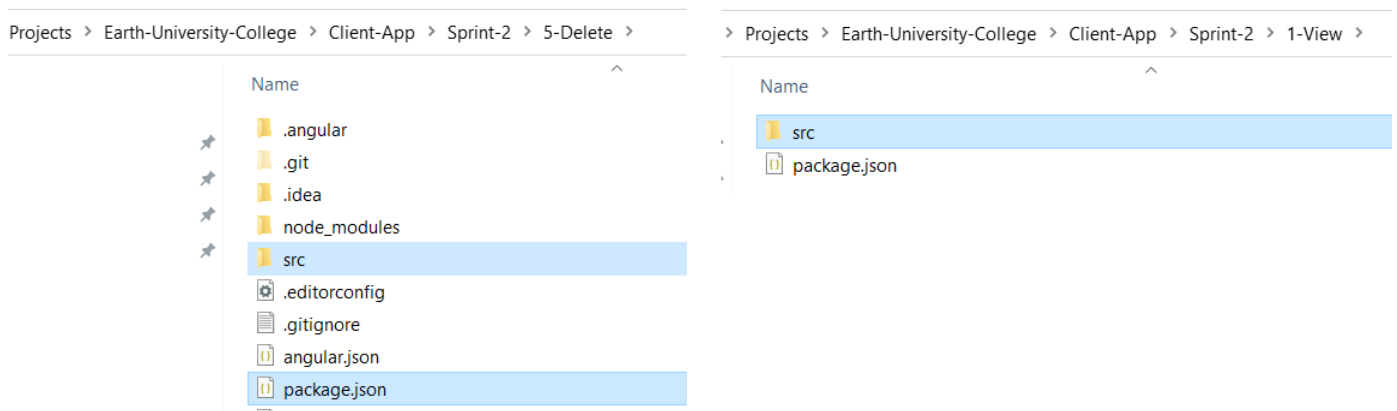**2. Copy the Content of "5-Delete" into "1-View" as Backup for Restore Point (View)**
Here you do not need to copy "node-modules" as it contains lot of library files and difficult to copy.
Needed dependencies are available in "package.json"

We will continue the existing project in "5-Delete" folder.

> Projects > Earth-University-College > Client-App > Sprint-2 > 1-View

Name		Date moc
	This folder is empty.	

<u>Copy the "src" folder with "package.json"</u>
<u>Paste as a backup</u>

Projects > Earth-University-College > Client-App > Sprint-2 > 5-Delete >

Name
- .angular
- .git
- .idea
- node_modules
- src
- .editorconfig
- .gitignore
- angular.json
- package.json

Projects > Earth-University-College > Client-App > Sprint-2 > 1-View >

Name
- src
- package.json

===

We will continue the existing project in "5-Delete" folder.

===

2(c) Employee Search (i) Server **(ii) Client**

1. <u>Design Search Criteria</u>
   Define Search Attributes/Lists Required for Search Panels/~~SQL Quarries Needed~~

2. <u>Server-App Modification</u>
   Implement Listing Services
   Implement Searching Service
   (3) Using Controller Filtering
   (4) ~~Using QBE/ Named Queries/ Native Queries~~

3. <u>**Client-App Modification**</u>

   1. **Implement Service Calls and Test**
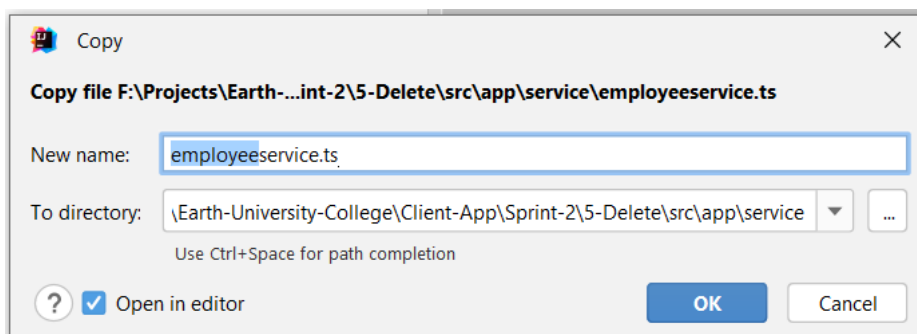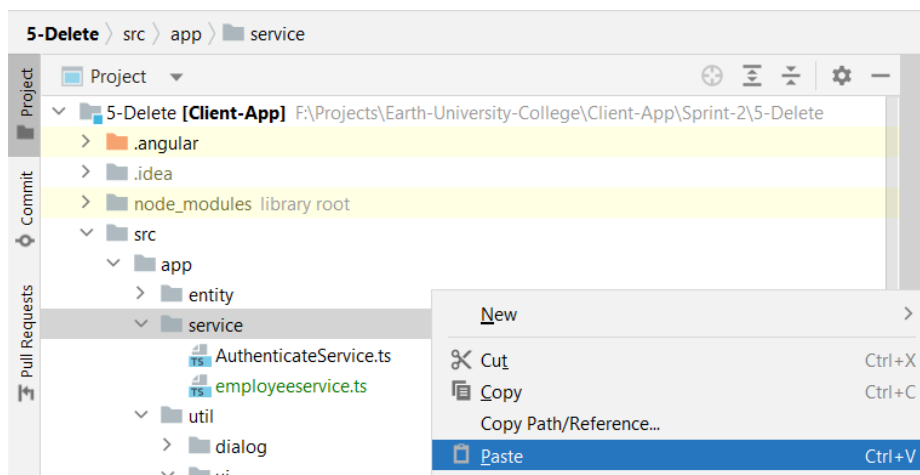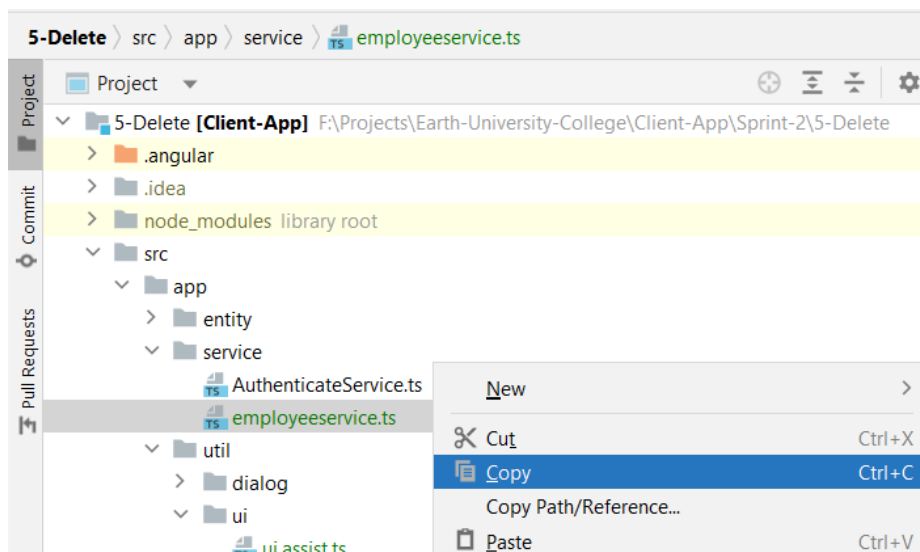   2. **Create Search Form and Observe for auto binding Combo Boxes**
   3. **Implement Search Functionality**
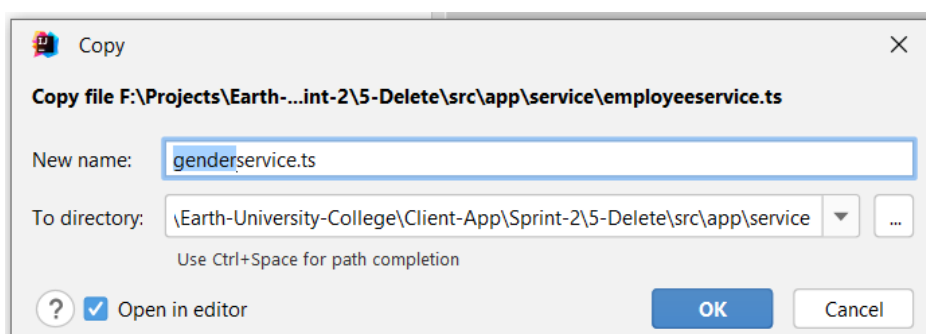   4. **Implement Search-Clear Functionality**
   5. **Create Confirm Dialog and integrate with Search Clear Confirmation**

===

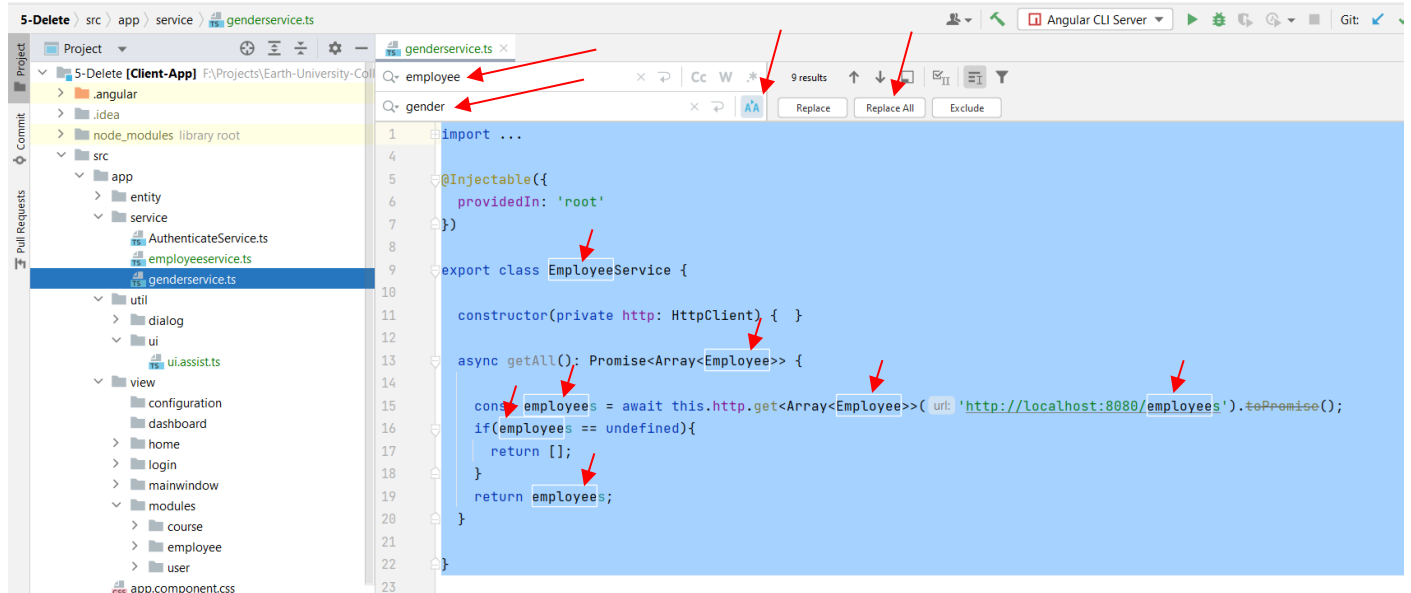## 1. Implement Service Calles and Test

(a) Create 2 Services "GenderService" and "DesignationService"

Change "employeeservice" into "genderservice"
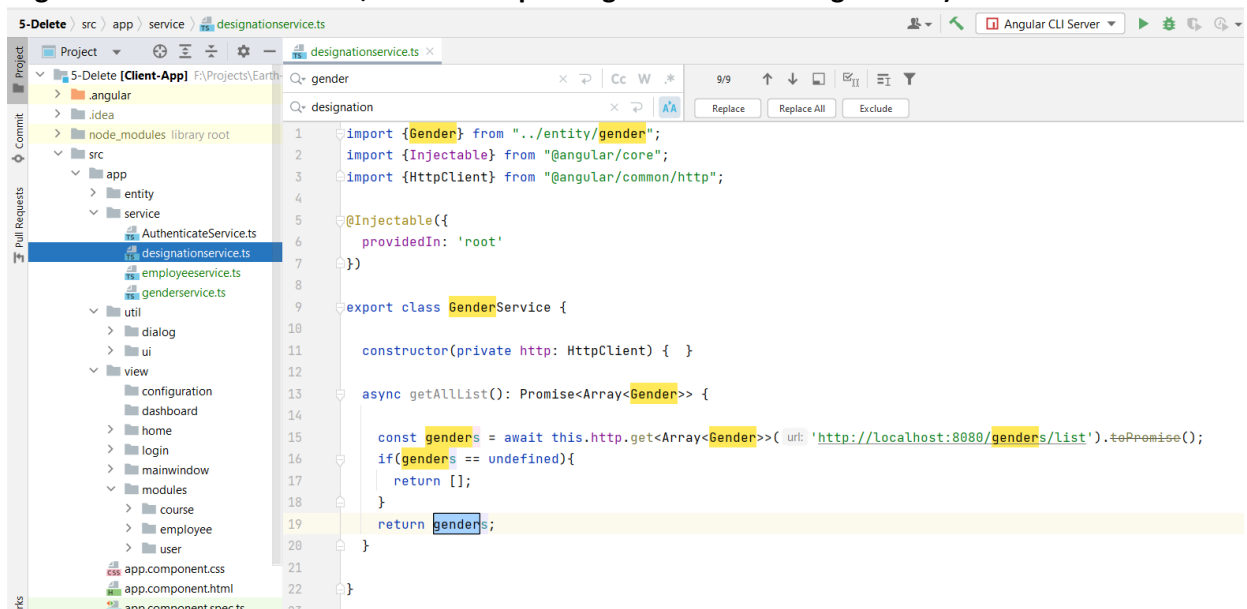
Crtl + R (Find & Replace)

Change the "getAll()" into "getAllList()"

Repeat the Process to create Designation Service
(Copy the genderservice.ts and Paste, Find and Replace "gender" with "designation")

Testing Service Calls

Create 2 Arrays
Instruct the Angular Framework (Routing Module who Call the Constructor) to Inject 2 Services(gs,ds).

Request Data using "getAllList()" methods of each injected Service(gs,ds) within the "initialize()" method
Console.log() outputs to test Data Arrival. Use "then()" or "finally()" of the Promise returned by each service

Run the project and observe Console Output
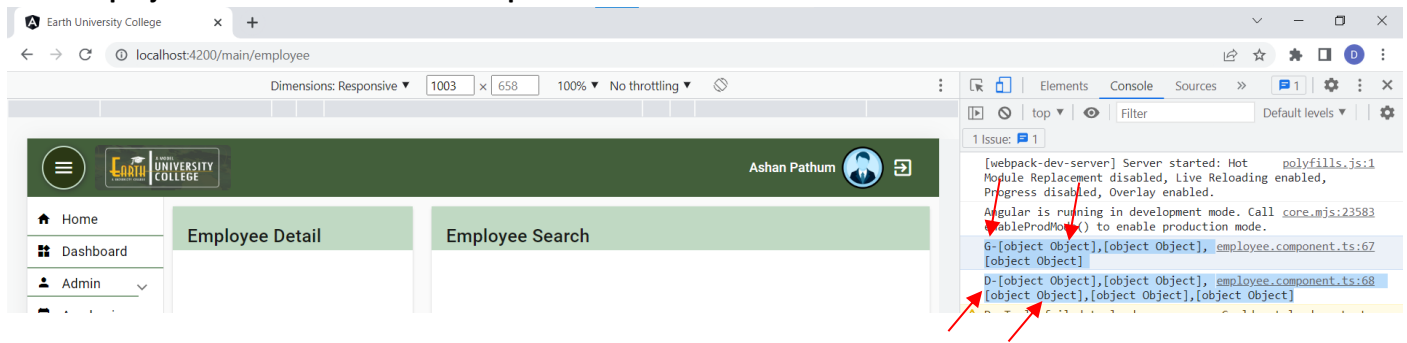
← **3 objects**

← **5 Objects**

2. Implement Form Controls needed for Search Form

    (i)   Form for Client Search (csearch) ← C-Search

    (ii)   **Form for Server Search (ssearch) ← S-Search**

    (iii)   Form for CRUD Operation (crud) ← Main Form used to (Add/Update/Delete/View Details)

```typescript
24    binders: string[] = ['number', 'callingname', 'gender.name'
25
26    cscolumns: string[] = ['csnumber', 'cscallingname', 'csgend
27    csprompts: string[] = ['Search by Number', 'Search by Name'
28                                        'Search by Desig
29    public csearch!: FormGroup;
30    public ssearch!: FormGroup;
31
32    employees: Array<Employee> = [];
```

```typescript
42    constructor(
43        private es: EmployeeService,
44        private gs: GenderService,
45        private ds: DesignationService,
46        private fb: FormBuilder) {
47
48        this.uiassist = new UiAssist(this);
49
50        this.csearch = this.fb.group( controls: {
51            "csnumber": new FormControl(),
52            "cscallingname": new FormControl(),
53            "csgender": new FormControl(),
54            "csdesignation": new FormControl(),
55            "csname": new FormControl(),
56            "csmodi": new FormControl(),
57        } );
58
59        this.ssearch = this.fb.group( controls: {
60            "ssnumber": new FormControl(),
61            "ssfullname": new FormControl(),
62            "ssgender": new FormControl(),
63            "ssdesignation": new FormControl(),
64            "ssnic": new FormControl()
65        } );
66
67    }
```

3. Implement Search Form (Data Lists will be automatically bind by the Angular framework)

Employee Search

Search by Number | Search by Fullname | Search by NIC

Gender | Designation

🔍 Search | ☰ Clear Search

Designation
- Not Selected
- Demonstrator L1
- Assistent G1
- Assistent G2
- Demonstrtaor L2
- Demonstrator L3

Gender: Male
- Not Selected
- Male
- Female
- Other


```html
<mat-grid-list [cols]="12" rowHeight="4rem">

    <mat-grid-tile [colspan]="4" [rowspan]="10">
      <mat-card>
        <mat-card-header>
          <mat-card-title>Employee Detail</mat-card-title>
        </mat-card-header>
        <mat-card-content> </mat-card-content>
      </mat-card>
    </mat-grid-tile>

    <mat-grid-tile [colspan]="8" [rowspan]="4">
      <mat-card>
        <mat-card-header>
          <mat-card-title>Employee Search</mat-card-title>
        </mat-card-header>
        <mat-card-content> </mat-card-content>
      </mat-card>
    </mat-grid-tile>

    <mat-grid-tile [colspan]="8" [rowspan]="6">
      <mat-card>
        <mat-card-header>
          <mat-card-title>Employee Table</mat-card-title>
```

```
employee.component.html  ×
12
13        <mat-grid-tile [colspan]="8" [rowspan]="4">
14          <mat-card id="ssearch">
15            <mat-card-header>
16              <mat-card-title>Employee Search</mat-card-title>
17            </mat-card-header>
18
19            <mat-card-content>
20
21              <mat-form [formGroup]="ssearch">
22
23                <mat-form-field appearance="outline">
24                  <mat-label>Search by Number</mat-label>
25                  <input matInput formControlName="ssnumber">
26                </mat-form-field>
27
28                <mat-form-field appearance="outline">
29                  <mat-label>Search by Fullname</mat-label>
30                  <input matInput formControlName="ssfullname">
31                </mat-form-field>
32
33                <mat-form-field appearance="outline">
34                  <mat-label>Search by NIC</mat-label>
35                  <input matInput formControlName="ssnic">
36                </mat-form-field>
37
38                <mat-form-field appearance="outline">
39                  <mat-label>Gender</mat-label>
40                  <mat-select formControlName="ssgender">
41                    <mat-option [value]="null" selected>Not Selected</mat-option>
42                    <mat-option *ngFor="let gender of genders" [value]="gender.id">{{gender.name}}</mat-option>
43                  </mat-select>
44                </mat-form-field>
45
46                <mat-form-field appearance="outline">
47                  <mat-label>Designation</mat-label>
48                  <mat-select formControlName="ssdesignation">
49                    <mat-option [value]="null" selected>Not Selected</mat-option>
50                    <mat-option *ngFor="let designation of designations" [value]="designation.id">{{designation.name}}</mat-option>
51                  </mat-select>
52                </mat-form-field>
53
54                <div>
55                  <button mat-raised-button color="primary"><mat-icon>search</mat-icon> Search </button>
56                  <button mat-raised-button color="primary"><mat-icon>reorder</mat-icon> Clear Search </button>
57                </div>
58
59              </mat-form>
60
61            </mat-card-content>
62
63          </mat-card>
64        </mat-grid-tile>
```

CSS Modifications

```
employee.component.css  ×
1    mat-card {  width: 100%;  height:100%;  margin: 10px 10px -10px 10px ; }
2
3    mat-card-content { overflow: auto; height: 100%; }
4
5    mat-card-header { background: #c0d9c3; }
6
7    #loading img{ width: 30px; height: 25px; margin-left: 200px;}
8
9    .csearch{   height: 40px;   width: 100%;  margin-top: 5px;   }
10
11   #ssearch mat-card-content{   padding-top: 30px; }
12
13   #ssearch mat-form-field { padding-left: 15px; width: 200px; }
14
15   #ssearch button{ width: 195px; margin-left:10px; margin-top: 5px; background-color: #435f3b;   }
16
```

4. Event Handling with Search Button

    (a) Declaring the Function and show values from the Search Form

    (b) Registering the Function with the Button and Test the Query String as a Console output

    (c) Updating data from the Server via Service Call of the Employee Service

    (a) Declaring the Function and show values from the Search Form

```
employee.component.ts
138
139    btnSearchMc(): void {
140
141        const sserchdata = this.ssearch.getRawValue();
142
143        let number = sserchdata.ssnumber;
144        let fullname = sserchdata.ssfullname;
145        let nic = sserchdata.ssnic;
146        let genderid = sserchdata.ssgender;
147        let designationid = sserchdata.ssdesignation;
148
149        let query="";
150
151        if(number!=null && number.trim()!="") query=query+"&number="+number;
152        if(fullname!=null && fullname.trim()!="") query=query+"&fullname="+fullname;
153        if(nic!=null && nic.trim()!="") query=query+"&nic="+nic;
154        if(genderid!=null) query=query+"&genderid="+genderid;
155        if(designationid!=null) query=query+"&designationid="+designationid;
156
157        if(query!="")   query = query.replace( searchValue: /^./, replaceValue: "?")
158
159        console.log(query);
160
161
162    }
```

    (b) Registering the Function with the Button and Test the Query String as a Console output

```
employee.component.html
51
52        <div>
53            <button mat-raised-button color="primary" (click)="btnSearchMc()"><mat-icon>search</mat-icon> Search </button>
54            <button mat-raised-button color="primary"><mat-icon>reorder</mat-icon> Clear Search </button>
55        </div>
```

(c) Updating data from the Server via Service Call of the Employee Service

(i) Modify Employee Service

```ts
import {Employee} from "../entity/employee";
import {Injectable} from "@angular/core";
import {HttpClient} from "@angular/common/http";

@Injectable({
  providedIn: 'root'
})

export class EmployeeService {

  constructor(private http: HttpClient) { }

  async getAll(): Promise<Array<Employee>> {

    const employees = await this.http.get<Array<Employee>>( url: 'http://localhost:8080/employees').toPromise();
    if(employees == undefined){
      return [];
    }
    return employees;
  }
```

```ts
async getAll(query:string): Promise<Array<Employee>> {

  const employees = await this.http.get<Array<Employee>>( url: 'http://localhost:8080/employees'+query).toPromise();
  if(employees == undefined){
    return [];
  }
  return employees;
}
```

(ii)   Modify loadTable(), createView() functions to reflect the changes in "getAll()" in employeeservice

```ts
employee.component.ts

    createView() {
      this.imageurl = 'assets/pending.gif';
      this.loadTable( query: "");
    }

    createSearch(){ }

    createForm(){ }

    loadForm(){ }


    loadTable(query:string) {

      this.es.getAll(query) Promise<Employee[]>
        .then((emps: Employee[]) => {
          this.employees = emps;
          this.imageurl = 'assets/fullfilled.png';
        }) Promise<void>
        .catch((error) => {
          console.log(error);
          this.imageurl = 'assets/rejected.png';
        }) Promise<void>
        .finally( onfinally: () => {
          this.data = new MatTableDataSource(this.employees);
          this.data.paginator = this.paginator;
        });

    }
```

Re run the project ad test Employee Table for loaded Data ← Regression Testing

Employee Table				✓	
Number	Calling Name	Gender	Designation	Full Name	Modification
Search by ...	Search by ...	Search by ...	Search by ...	Search by ...	Search by ...
2201	Ashan	Male	Demonstrator L1	Ashan Pathum	2201(Ashan)
2202	Rukmal	Male	Demonstrator L1	Dileesha Rukmal	2202(Rukmal)
2203	Imran	Male	Demonstrator L1	Thahir Imran	2203(Imran)

Items per page: 3 ▼   1 – 3 of 6   ‹ ›

(iii)   **Modify btnSerchMc() function as follows**

console.log(query)   →   this.loadTable(query);

```
139    btnSearchMc(): void {
140
141      const sserchdata = this.ssearch.getRawValue();
142
143      let number = sserchdata.ssnumber;
144      let fullname = sserchdata.ssfullname;
145      let nic = sserchdata.ssnic;
146      let genderid = sserchdata.ssgender;
147      let designationid = sserchdata.ssdesignation;
148
149      let query="";
150
151      if(number!=null && number.trim()!="") query=query+"&number="+number;
152      if(fullname!=null && fullname.trim()!="") query=query+"&fullname="+fullname;
153      if(nic!=null && nic.trim()!="") query=query+"&nic="+nic;
154      if(genderid!=null) query=query+"&genderid="+genderid;
155      if(designationid!=null) query=query+"&designationid="+designationid;
156
157      if(query!="")  query = query.replace( searchValue: /^./,  replaceValue: "?")
158
159      this.loadTable(query);
160
161
162    }
```

(iv)   **Test – All possible Tests**

You do not need to test the following. You can test based on your own data

Employee Search

Search by Number	Search by Fullname	Search by NIC
Gender ▼	Designation ▼	

🔍 Search   ☰ Clear Search

Employee Table ☑

2201	Ashan	Male	Demonstrator L1	Ashan Pathum	2201(Ashan)
2202	Rukmal	Male	Demonstrator L1	Dileesha Rukmal	2202(Rukmal)
2203	Imran	Male	Demonstrator L1	Thahir Imran	2203(Imran)
2301	Lakshan	Male	Demonstrator L1	Lakshan Ruwinda	2301(Lakshan)
2302	Arshad	Male	Demonstrator L1	Arshad Ahamad	2302(Arshad)
2303	Imasha	Female	Demonstrator L1	Imasha Gaupadi	2303(Imasha)

Items per page: 10 ▼   1 – 6 of 6   ‹ ›

All Demonstrators in the Search

Employee Search

Search by Number	Search by Fullname **sha**	Search by NIC
Gender ▼	Designation ▼	

🔍 Search   ☰ Clear Search

Employee Table ☑

Search by…	Search by…	Search by…	Search by…	Search by…	Search by…
2201	Ashan	Male	Demonstrator L1	Ashan Pathum	2201(Ashan)
2202	Rukmal	Male	Demonstrator L1	Dileesha Rukmal	2202(Rukmal)
2301	Lakshan	Male	Demonstrator L1	Lakshan Ruwinda	2301(Lakshan)
2302	Arshad	Male	Demonstrator L1	Arshad Ahamad	2302(Arshad)
2303	Imasha	Female	Demonstrator L1	Imasha Gaupadi	2303(Imasha)

Items per page: 10 ▼   1 – 5 of 5   ‹ ›

Except Thahir Imran ← No "sha" in the name

Employee Search

Search by Number

Search by Fullname: sha

Search by NIC

Gender: Male

Designation

🔍 Search   ☰ Clear Search

Employee Table ✓

Search by...	Search by...	Search by...	Search by...	Search by...	Search by...
2201	Ashan	Male	Demonstrator L1	Ashan Pathum	2201(Ashan)
2202	Rukmal	Male	Demonstrator L1	Dileesha Rukmal	2202(Rukmal)
2301	Lakshan	Male	Demonstrator L1	Lakshan Ruwinda	2301(Lakshan)
2302	Arshad	Male	Demonstrator L1	Arshad Ahamad	2302(Arshad)

Items per page: 10   1 – 4 of 4   ‹ ›

Imasha Removed ← She is Female

Employee Search

Search by Number

Search by Fullname: shan

Search by NIC

Gender: Male

Designation

🔍 Search   ☰ Clear Search

Employee Table ✓

Number	Calling Name	Gender	Designation	Full Name	Modification
Search by ...	Search by ...	Search by ...	Search by ...	Search by ...	Search by ...
2201	Ashan	Male	Demonstrator L1	Ashan Pathum	2201(Ashan)
2301	Lakshan	Male	Demonstrator L1	Lakshan Ruwinda	2301(Lakshan)

Items per page: 10   1 – 2 of 2   ‹ ›

Arshad Removed ← Arshad contin "sha" but not "shan"

Employee Search

Search by Number	Search by Fullname	
2201	shan	Search by NIC
Gender	Designation	
Male		

Search   Clear Search

Employee Table ✅

Number	Calling Name	Gender	Designation	Full Name	Modification
Search by …	Search by …	Search by …	Search by …	Search by …	Search by …
2201	Ashan	Male	Demonstrator L1	Ashan Pathum	2201(Ashan)

Items per page: 10   1 – 1 of 1   <   >

Lakshan Removed ← 2201 only match with Ashan

Clear Search Facility
 (a) Define the "btnSearchClearMc()" event handling function
 (b) Register the function with the Button
 (c) Test

```
btnSearchClearMc(): void {
    this.ssearch.reset();
    this.loadTable( query: "");
}
```
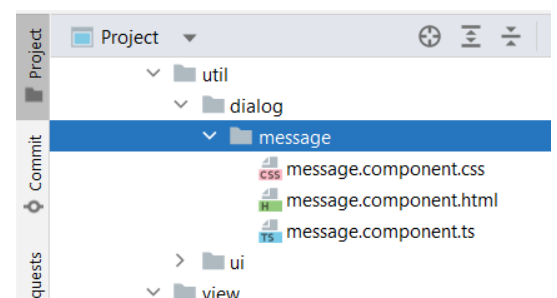
```
<div>
  <button mat-raised-button color="primary" (click)="btnSearchMc()"><mat-icon>search</mat-icon> Search </button>
  <button mat-raised-button color="primary" (click)="btnSearchClearMc()"><mat-icon>reorder</mat-icon> Clear Search </button>
</div>
```

Exercise:
Review the codes in "login.ts" to revise how to use Dialog Boxes
Implement new Dialog Component for Confirm Dialog

Get User Consent, before clearing the form
By modifying "btnSearchClearMc()"

Employee Search

Search by Number	Search by Fullname	Search by NIC
	shan	

Gender	Designation
Male	

🔍 Search   ☰ Clear Search

Employee Table ✓

Number	Calling Name	Gender	Designation	Full Name	Modification
Search by ...	Search by ...	Search by ...	Search by ...	Search by ...	Search by ...
2201	Ashan	Male	Demonstrator L1	Ashan Pathum	2201(Ashan)
2301	Lakshan	Male	Demonstrator L1	Lakshan Ruwinda	2301(Lakshan)

Items per page: 3   1 – 2 of 2   ‹ ›

When Click on "Clear Search"

Employee Search

Search by Number	Search by Fullname	Search by NIC

Gender	Designation

🔍 Search   ☰ Clear Search

Employee Table ✓

Number	Calling Name	Gender	Designation	Full Name	Modification
Search by ...	Search by ...	Search by ...	Search by ...	Search by ...	Search by ...
2201	Ashan	Male	Demonstrator L1	Ashan Pathum	2201(Ashan)
2202	Rukmal	Male	Demonstrator L1	Dileesha Rukmal	2202(Rukmal)
2203	Imran	Male	Demonstrator L1	Thahir Imran	2203(Imran)

Items per page: 3   1 – 3 of 6   ‹ ›

Department of Information Technology
Earth University College