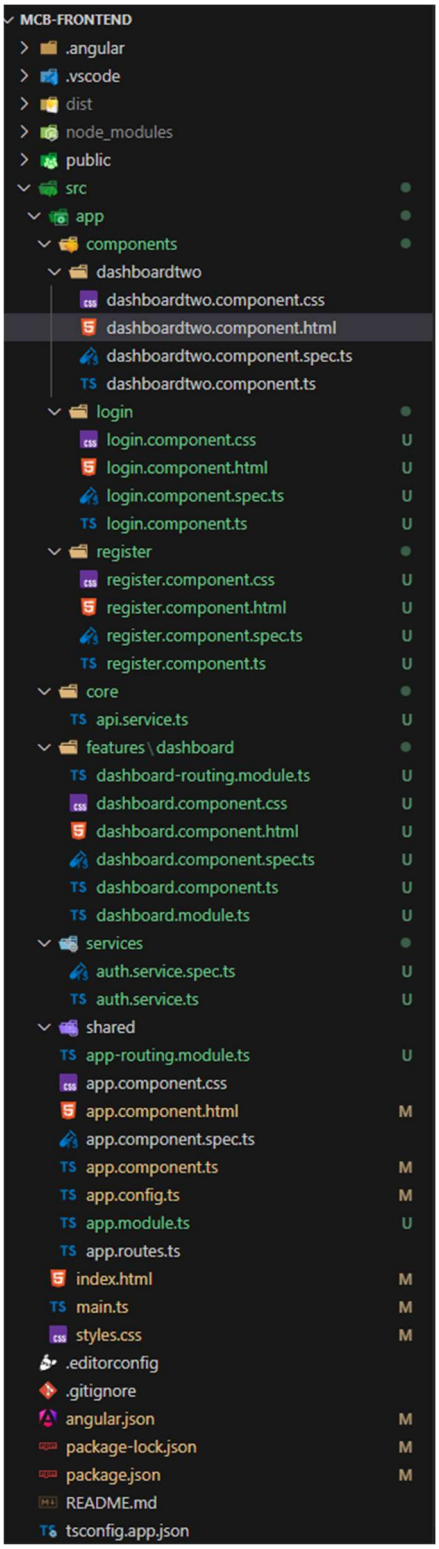
MCB Frontend Report

Overview

The frontend of the MCB project is built using Angular and follows a modular structure with reusable components, services, and a routing system. It provides user authentication, data visualization, and reporting functionalities. Below is an overview of its key components and their functionalities.



Project Structure

Key Directories & Files

- **src/app/components/**: Contains UI components like dashboard, dashboardtwo, login, and register.
- **src/app/core/**: Includes the api.service.ts file for API communication.
- **src/app/features/dashboard/**: Contains dashboard module and related files.
- **src/app/services/**: Holds authentication services (auth.service.ts and auth.service.spec.ts).
- **src/app/shared/**: Contains global configurations, routing, and shared components.
- **Root files**: Includes index.html, main.ts, styles.css, and app.component.* files.

Component Breakdown

1. Dashboard Component (dashboard.component.html & dashboardtwo.component.html)

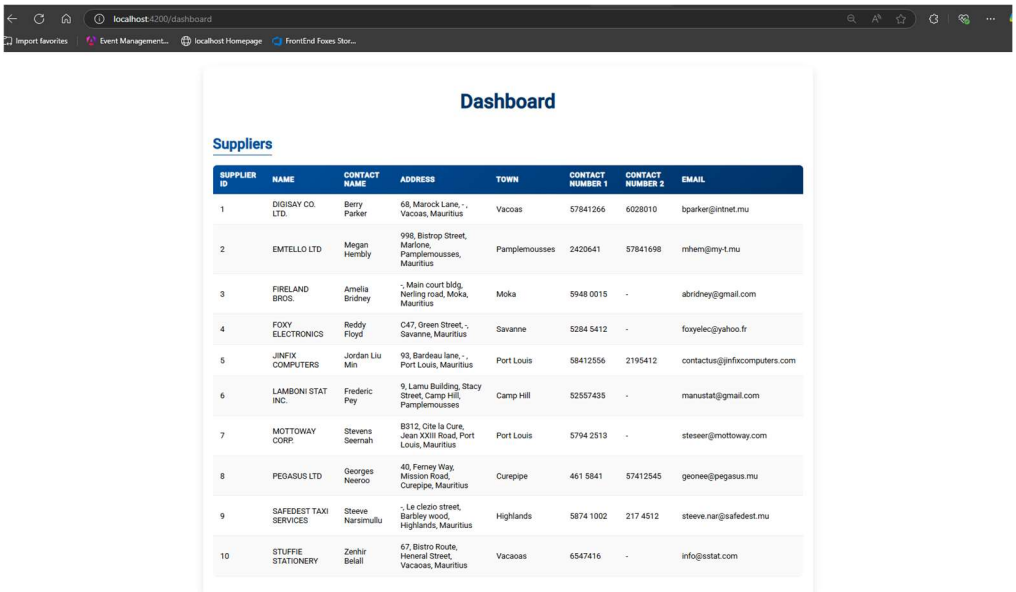
The **Dashboard** modules provide tabular data representation for suppliers, orders, and invoices.

Dashboard Features:

- **Error Handling**: Displays an error message when applicable.
- **Loading State**: Shows a loading message until data is fully fetched.
- **Data Display**: Uses Angular directives (*ngIf, *ngFor) to iterate and render tables.
- **Data Formatting**: Uses Angular Pipes for date and currency formatting.

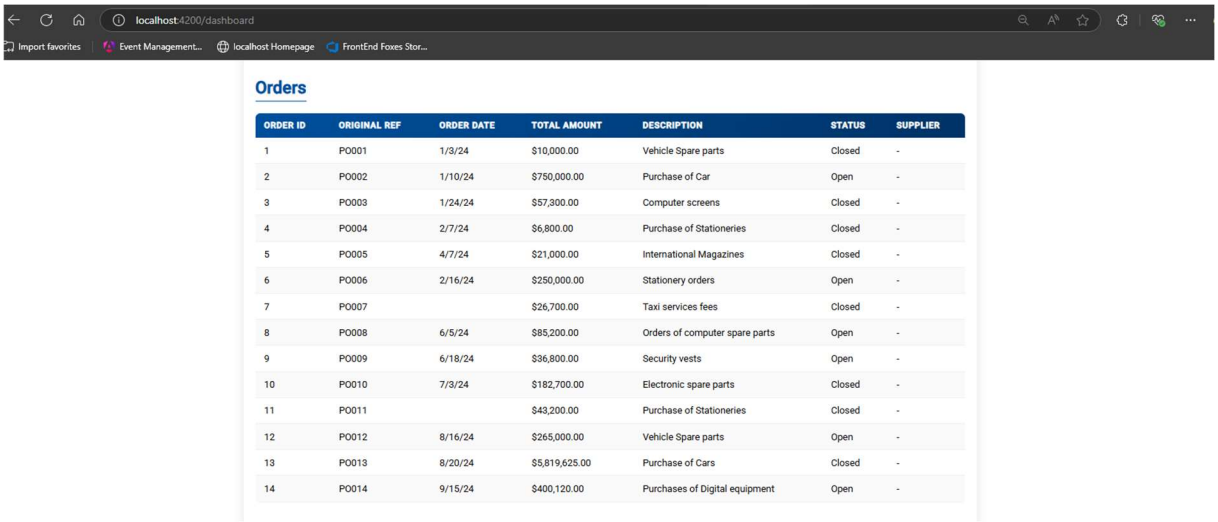
Tables Included:

- **Suppliers Table**: Displays supplier information (ID, name, contact details, address, etc.).



SUPPLIER ID	NAME	CONTACT NAME	ADDRESS	TOWN	CONTACT NUMBER 1	CONTACT NUMBER 2	EMAIL
1	DIGISAY CO. LTD.	Berry Parker	68, Marock Lane, - , Vacoas, Mauritius	Vacoas	57841266	6028010	bparker@intnet.mu
2	EMTELLO LTD	Megan Hembly	998, Bistrop Street, Marlone, Pamplemousses, Mauritius	Pamplemousses	2420641	57841698	mhem@my-t.mu
3	FIRELAND BROS.	Amelia Bridney	-, Main court bldg, Nerling road, Moka, Mauritius	Moka	5948 0015	-	abridney@gmail.com
4	FOXY ELECTRONICS	Reddy Floyd	C47, Green Street, -, Savanne, Mauritius	Savanne	5284 5412	-	foxyelec@yahoo.fr
5	JINFIX COMPUTERS	Jordan Liu Min	93, Bardeau lane, - , Port Louis, Mauritius	Port Louis	58412556	2195412	contactus@jinfixcomputers.com
6	LAMBONI STAT INC.	Frederic Pey	9, Lamu Building, Stacy Street, Camp Hill, Pamplemousses	Camp Hill	52557435	-	manustat@gmail.com
7	MOTTOWAY CORP.	Stevens Seernah	B312, Cite la Cure, Jean XXIII Road, Port Louis, Mauritius	Port Louis	5794 2513	-	steseer@mottoway.com
8	PEGASUS LTD	Georges Neeroo	40, Ferney Way, Mission Road, Curepipe, Mauritius	Curepipe	461 5841	57412545	geonee@pegasus.mu
9	SAFEDEST TAXI SERVICES	Steeve Narsimullu	-, Le clezio street, Barbley wood, Highlands, Mauritius	Highlands	5874 1002	217 4512	steeve.nar@safedest.mu
10	STUFFIE STATIONERY	Zenhir Belali	67, Bistro Route, Heneral Street, Vacaoas, Mauritius	Vacaoas	6547416	-	info@sstat.com

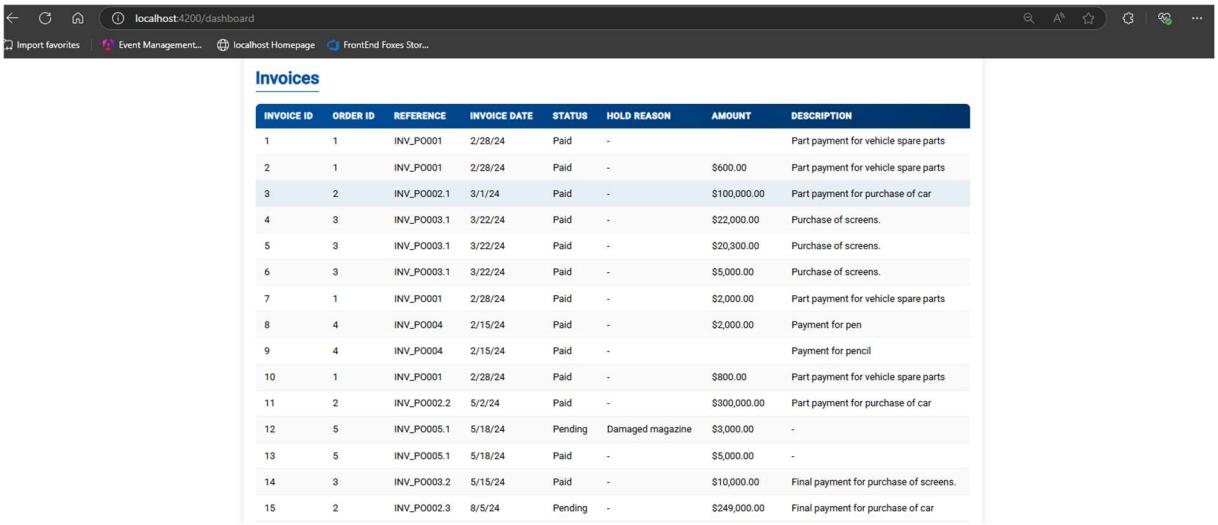
- **Orders Table**: Displays order details (ID, reference, date, amount, status, supplier info).



Orders

ORDER ID	ORIGINAL REF	ORDER DATE	TOTAL AMOUNT	DESCRIPTION	STATUS	SUPPLIER
1	PO001	1/3/24	$10,000.00	Vehicle Spare parts	Closed	-
2	PO002	1/10/24	$750,000.00	Purchase of Car	Open	-
3	PO003	1/24/24	$57,300.00	Computer screens	Closed	-
4	PO004	2/7/24	$6,800.00	Purchase of Stationeries	Closed	-
5	PO005	4/7/24	$21,000.00	International Magazines	Closed	-
6	PO006	2/16/24	$250,000.00	Stationery orders	Open	-
7	PO007		$26,700.00	Taxi services fees	Closed	-
8	PO008	6/5/24	$85,200.00	Orders of computer spare parts	Open	-
9	PO009	6/18/24	$36,800.00	Security vests	Open	-
10	PO010	7/3/24	$182,700.00	Electronic spare parts	Closed	-
11	PO011		$43,200.00	Purchase of Stationeries	Closed	-
12	PO012	8/16/24	$265,000.00	Vehicle Spare parts	Open	-
13	PO013	8/20/24	$5,819,625.00	Purchase of Cars	Closed	-
14	PO014	9/15/24	$400,120.00	Purchases of Digital equipment	Open	-

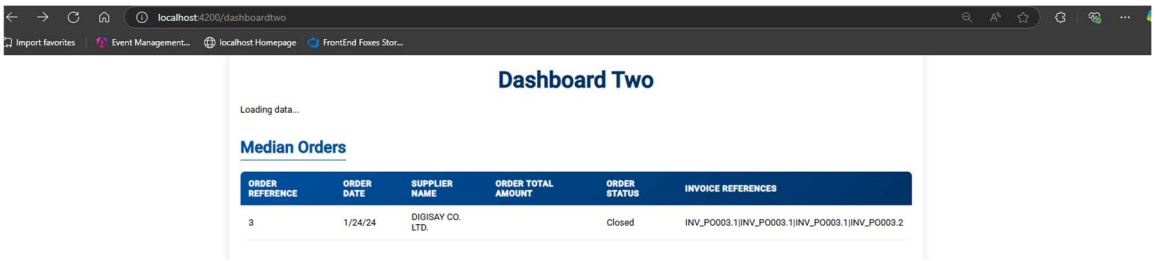
- **Invoices Table**: Shows invoice details (ID, order reference, date, amount, hold reason, status, etc.).



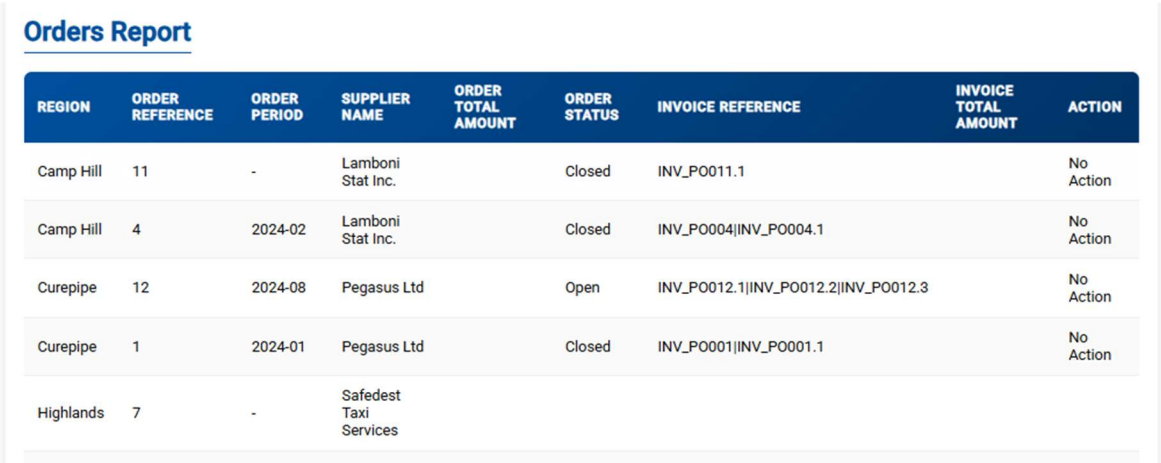
Invoices

INVOICE ID	ORDER ID	REFERENCE	INVOICE DATE	STATUS	HOLD REASON	AMOUNT	DESCRIPTION
1	1	INV_PO001	2/28/24	Paid	-		Part payment for vehicle spare parts
2	1	INV_PO001	2/28/24	Paid	-	$600.00	Part payment for vehicle spare parts
3	2	INV_PO002.1	3/1/24	Paid	-	$100,000.00	Part payment for purchase of car
4	3	INV_PO003.1	3/22/24	Paid	-	$22,000.00	Purchase of screens.
5	3	INV_PO003.1	3/22/24	Paid	-	$20,300.00	Purchase of screens.
6	3	INV_PO003.1	3/22/24	Paid	-	$5,000.00	Purchase of screens.
7	1	INV_PO001	2/28/24	Paid	-	$2,000.00	Part payment for vehicle spare parts
8	4	INV_PO004	2/15/24	Paid	-	$2,000.00	Payment for pen
9	4	INV_PO004	2/15/24	Paid	-		Payment for pencil
10	1	INV_PO001	2/28/24	Paid	-	$800.00	Part payment for vehicle spare parts
11	2	INV_PO002.2	5/2/24	Paid	-	$300,000.00	Part payment for purchase of car
12	5	INV_PO005.1	5/18/24	Pending	Damaged magazine	$3,000.00	-
13	5	INV_PO005.1	5/18/24	Paid	-	$5,000.00	-
14	3	INV_PO003.2	5/15/24	Paid	-	$10,000.00	Final payment for purchase of screens.
15	2	INV_PO002.3	8/5/24	Pending	-	$249,000.00	Final payment for purchase of car

- **Dashboard Two Additional Reports**:
  - **Median Orders Table**: Summarizes order references, suppliers, and amounts.



  - **Orders Report Table**: Provides regional order breakdown with invoice details.



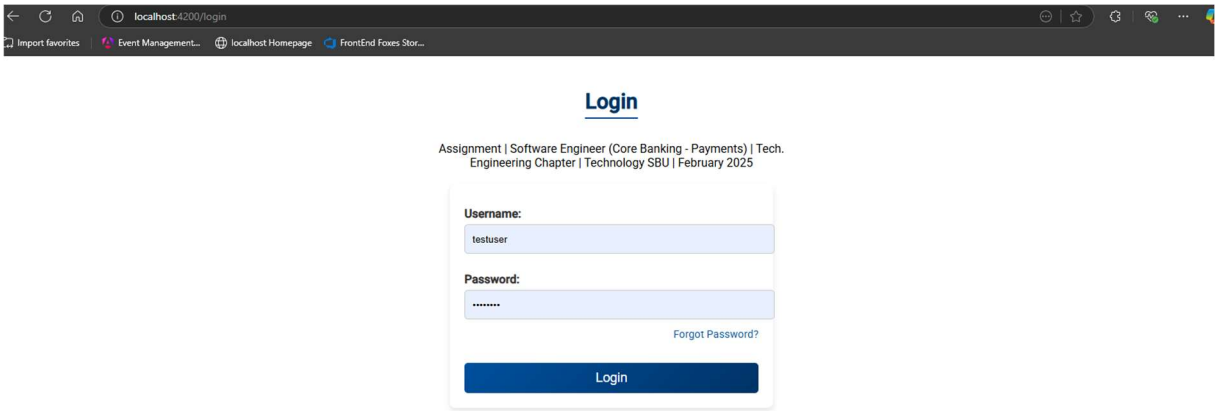
Orders Report

REGION	ORDER REFERENCE	ORDER PERIOD	SUPPLIER NAME	ORDER TOTAL AMOUNT	ORDER STATUS	INVOICE REFERENCE	INVOICE TOTAL AMOUNT	ACTION
Camp Hill	11	-	Lamboni Stat Inc.		Closed	INV_PO011.1		No Action
Camp Hill	4	2024-02	Lamboni Stat Inc.		Closed	INV_PO004|INV_PO004.1		No Action
Curepipe	12	2024-08	Pegasus Ltd		Open	INV_PO012.1|INV_PO012.2|INV_PO012.3		No Action
Curepipe	1	2024-01	Pegasus Ltd		Closed	INV_PO001|INV_PO001.1		No Action
Highlands	7	-	Safedest Taxi Services					

  - **Supplier Orders Summary**: Monthly breakdown of suppliers and total orders.

2. Login Component (login.component.html)

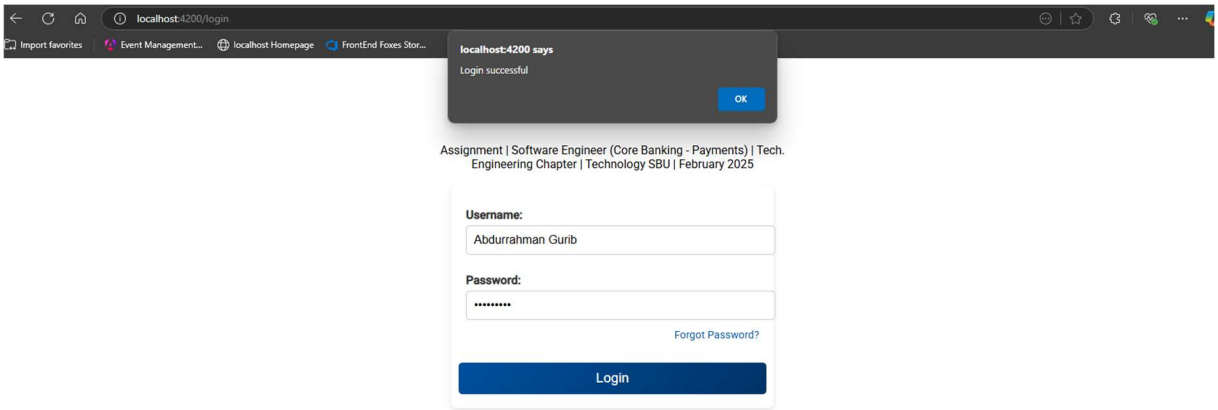
Handles user authentication via login credentials.



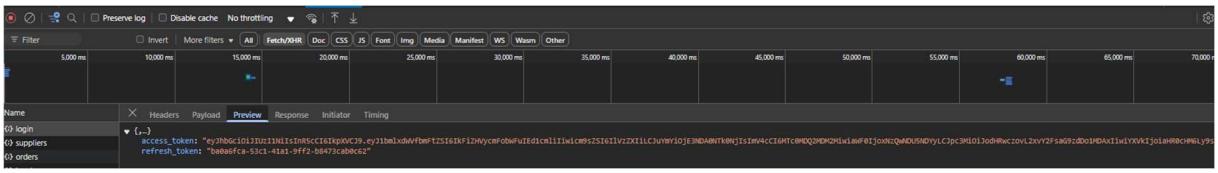
Login Features:

- **User Input Fields**: Email and password fields.
- **Form Validation**: Checks for required fields and valid credentials.
- **Error Handling**: Displays error messages if login fails.
- **API Integration**: Calls authentication service to verify user login.

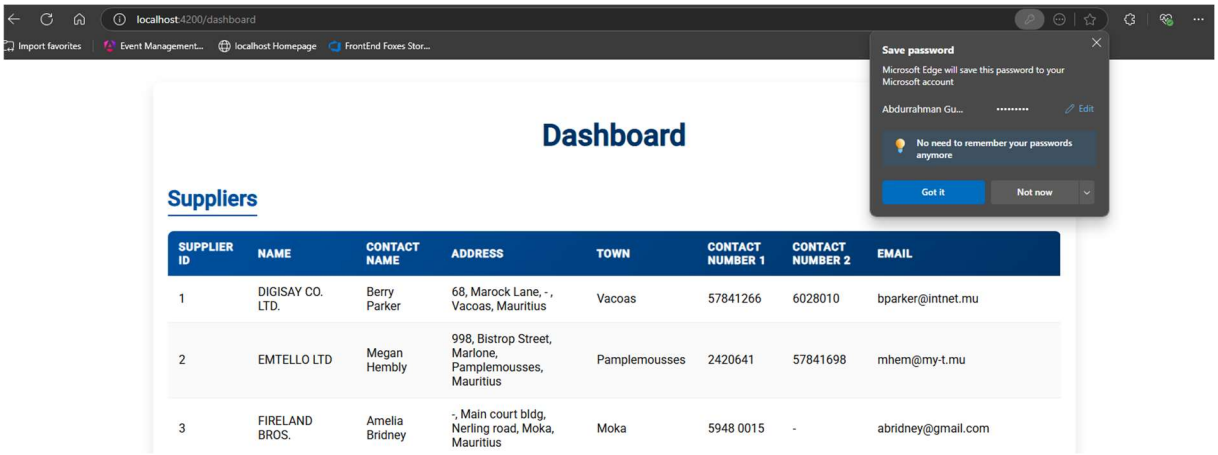
Unit Test: Logged with correct User name and Password



Secure Access token and refresh token created in Developer Tools In the Network Tab



Then directed into dashboard screen



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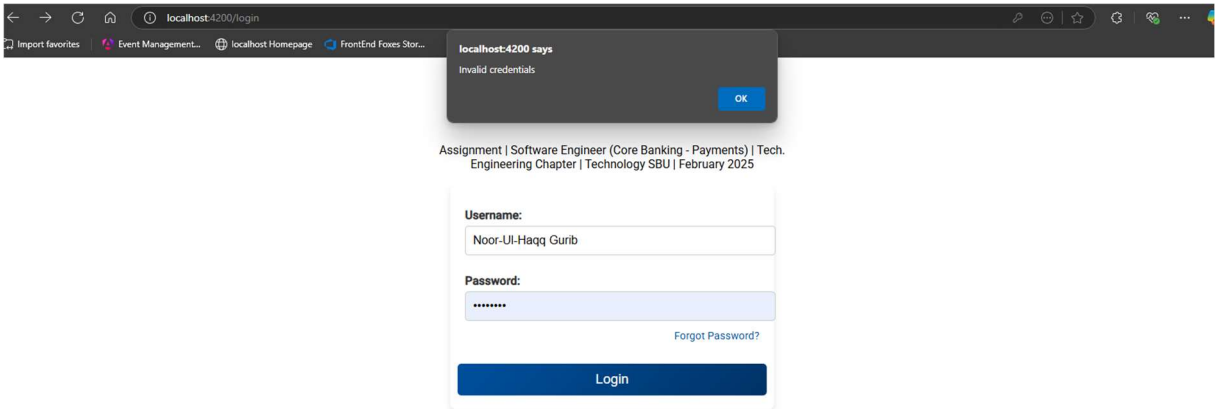
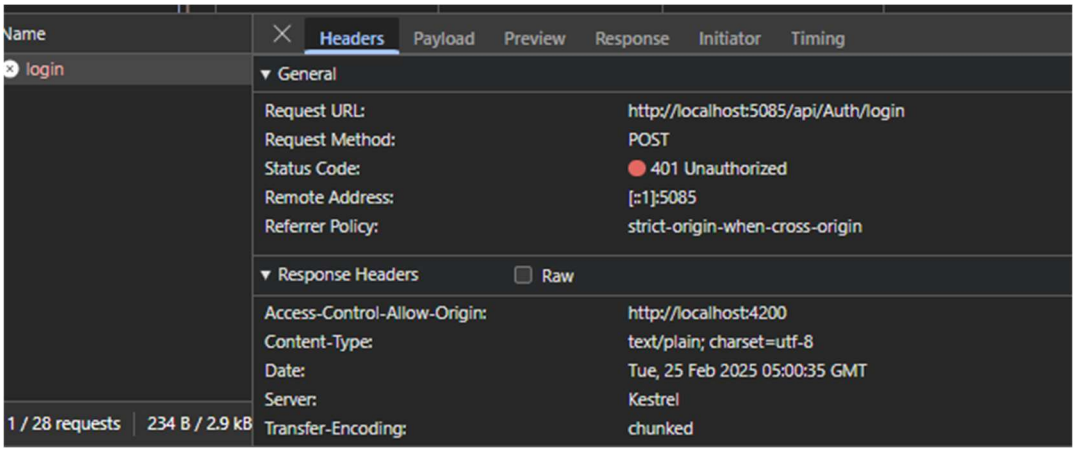
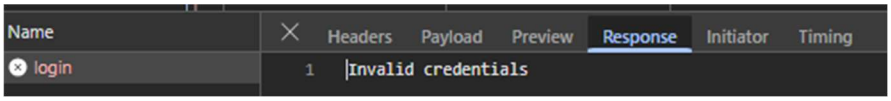
1	DIGISAY CO. LTD.	Berry Parker	68, Marock Lane, - , Vacoas, Mauritius	Vacoas	57841266	6028010	bparker@intnet.mu
2	EMTELLO LTD	Megan Hembly	998, Bistrop Street, Marlone, Pamplemousses, Mauritius	Pamplemousses	2420641	57841698	mhem@my-t.mu
3	FIRELAND BROS.	Amelia Bridney	-, Main court bldg, Nerling road, Moka, Mauritius	Moka	5948 0015	-	abridney@gmail.com

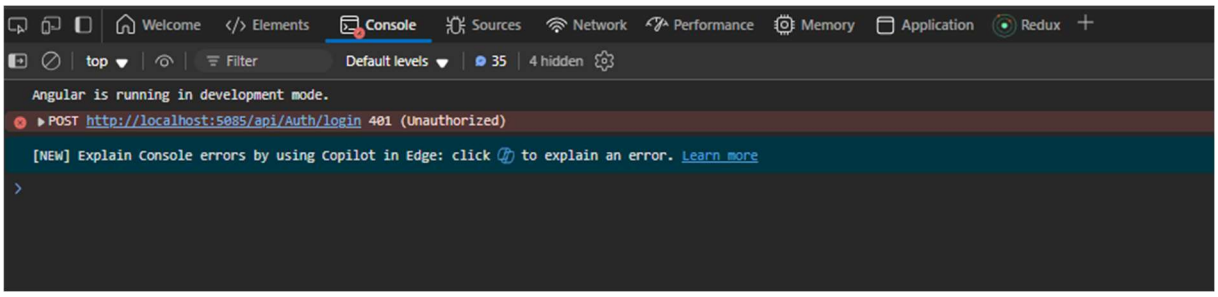
Unit Test Logged with incorrect Username and Password, trigger validations



Unauthorised access Api Status Code to login

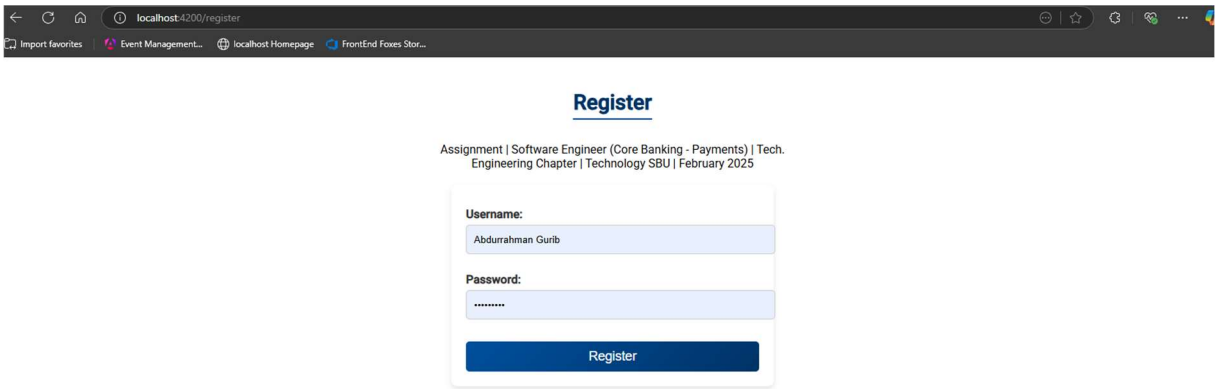






3. Register Component (register.component.html)

Handles new user registration.

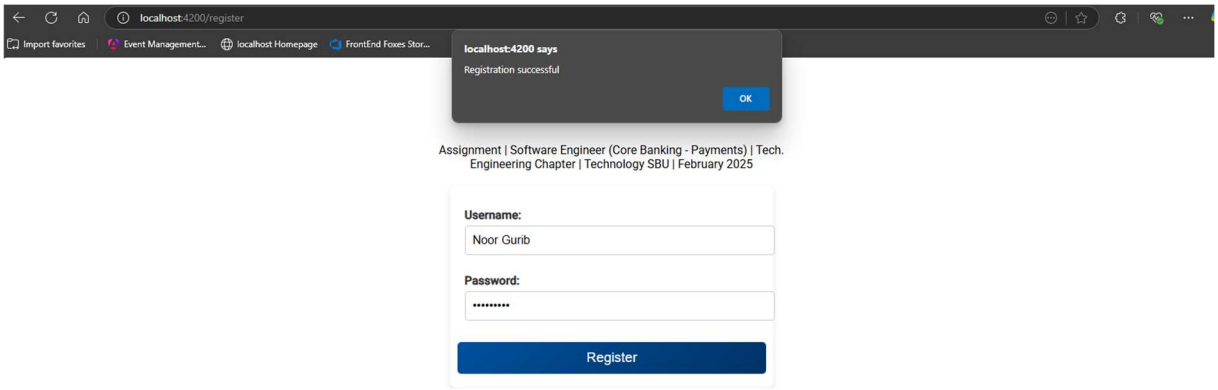


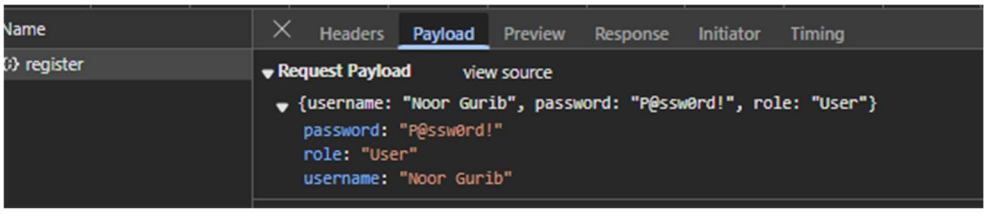
Register Features:

- **User Input Fields**: Name, email, password, and confirm password fields.
- **Form Validation**: Ensures valid input, matching passwords, and required fields.

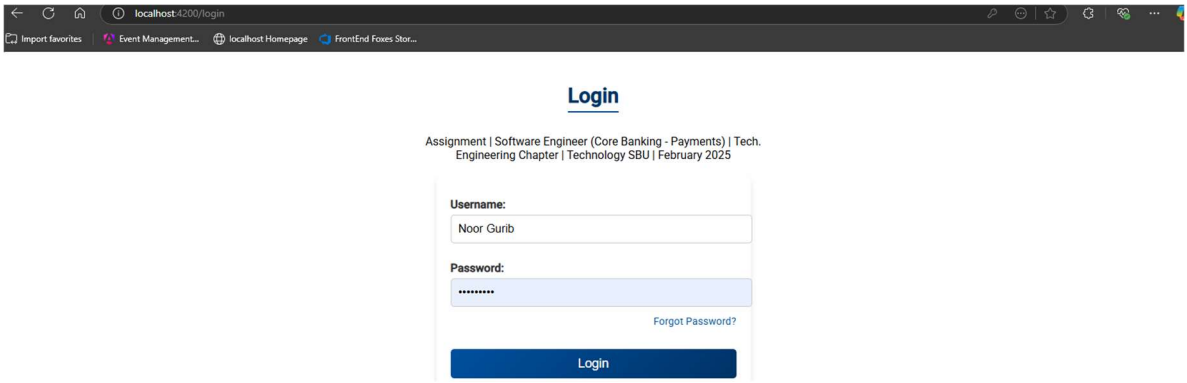
- **Error Handling**: Displays relevant error messages.
- **API Integration**: Sends registration data to the backend.

Unit Test: Created a new account to register a user

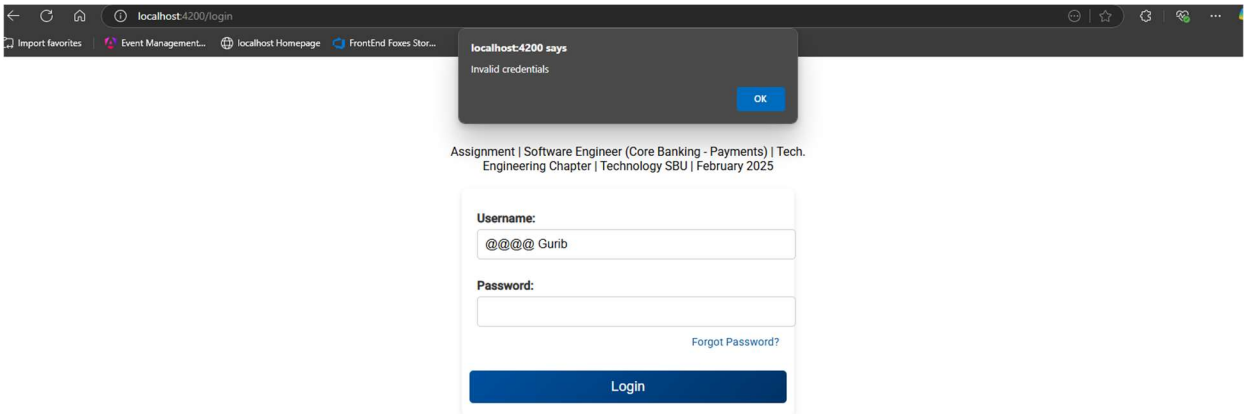




Redirected to login page



Unit Test: Register with invalid characters



Services & API Integration

1. api.service.ts

Handles API communication for retrieving suppliers, orders, invoices, and authentication data.

src > app > core > TS api.service.ts > ApiService > getSupplierOrdersSummary

```
import { Injectable } from '@angular/core';
import { HttpClient } from '@angular/common/http';
import { Observable } from 'rxjs';

@Injectable({
  providedIn: 'root'
})
export class ApiService {
  private baseUrl = 'http://localhost:5085/api/Migration'; // adjust if needed

  constructor(private http: HttpClient) { }

  getSuppliers(): Observable<any[]> {
    return this.http.get<any[]>(`${this.baseUrl}/suppliers`);
  }

  getOrders(): Observable<any[]> {
    return this.http.get<any[]>(`${this.baseUrl}/orders`);
  }

  getInvoices(): Observable<any[]> {
    return this.http.get<any[]>(`${this.baseUrl}/invoices`);
  }

  // Fetch Median Order Data
  getMedianOrder(): Observable<any[]> {
    return this.http.get<any[]>(`http://localhost:5085/api/MedianOrder`);
  }

  // Fetch Order Management Data
  getOrderManagement(): Observable<any[]> {
    return this.http.get<any[]>(`http://localhost:5085/api/OrderManagement`);
  }

  // Fetch Orders Report Data
  getOrdersReport(): Observable<any[]> {
    return this.http.get<any[]>(`http://localhost:5085/api/Report/orders`);
  }

  // Fetch Supplier Orders Summary
  getSupplierOrdersSummary(): Observable<any[]> {
    return this.http.get<any[]>(`http://localhost:5085/api/SupplierOrders/summary`);
  }
}
```

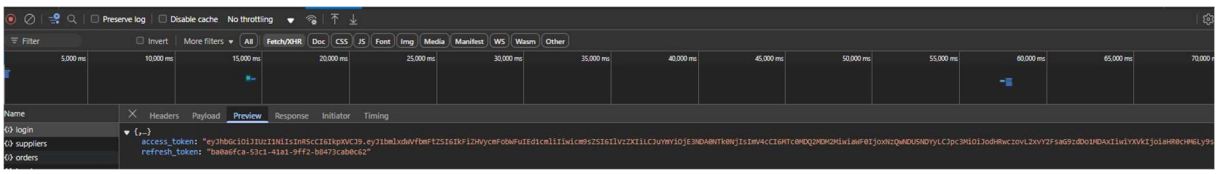
2. Authentication Service (auth.service.ts)

src > app > services > TS auth.service.ts > AuthService > logout

```
1   import { Injectable } from '@angular/core';
2   import { HttpClient } from '@angular/common/http';
3   import { Observable } from 'rxjs';
4
5   @Injectable({
6     providedIn: 'root'
7   })
8   export class AuthService {
9     private apiUrl = 'http://localhost:5085/api/Auth';
10
11    constructor(private http: HttpClient) {}
12
13    register(user: any): Observable<any> {
14      return this.http.post(`${this.apiUrl}/register`, user);
15    }
16
17    login(credentials: any): Observable<any> {
18      return this.http.post(`${this.apiUrl}/login`, credentials);
19    }
20
21    saveToken(token: string) {
22      localStorage.setItem('jwt_token', token);
23    }
24
25    getToken(): string | null {
26      return localStorage.getItem('jwt_token');
27    }
28
29    logout() {
30      localStorage.removeItem('jwt_token');
31    }
32  }
33
```

- **Login & Logout**: Manages user authentication.

- **Token Handling**: Stores and retrieves authentication tokens.



- **User Authorization**: Ensures secure access control.

Routing & Navigation

1. app-routing.module.ts

- Defines routes for the application, including authentication and dashboard pages.
- Uses Angular's RouterModule for navigation control.

2. app.routes.ts

- Centralizes application-wide route definitions.

```
src > app > TS app-routing.module.ts > ...
import { NgModule } from '@angular/core';
import { RouterModule, Routes } from '@angular/router';
import { LoginComponent } from './components/login/login.component';
import { RegisterComponent } from './components/register/register.component';
import { DashboardtwoComponent } from './components/dashboardtwo/dashboardtwo.component';


export const routes: Routes = [

  { path: 'dashboardtwo', component: DashboardtwoComponent },
  { path: 'login', component: LoginComponent },
  { path: 'register', component: RegisterComponent },
  { path: '', redirectTo: '/dashboard', pathMatch: 'full' },
  {
    path: 'dashboard',
    loadChildren: () => import('./features/dashboard/dashboard.module').then(m => m.DashboardModule)
  },
];

@NgModule({
  imports: [RouterModule.forRoot(routes)],
  exports: [RouterModule]
})
export class AppRoutingModule { }

```

Styling & Configuration

1. styles.css

- Provides global styles for the application.

2. app.config.ts

- Stores configuration settings for API endpoints and environment variables.

3. app.module.ts & dashboard.module.ts

- Declares components and imports necessary Angular modules.

Unit Test for Login using **JEST npx Framework**

```
9   describe('LoginComponent', () => {
10    let component: LoginComponent;
11    let fixture: ComponentFixture<LoginComponent>;
12    let authService: AuthService;
13
14    beforeEach(async () => {
15      await TestBed.configureTestingModule({
16        imports: [FormsModule, HttpClientTestingModule, RouterTestingModule],
17        declarations: [LoginComponent],
18        providers: [AuthService]
19      })
20      .compileComponents();
21
22      fixture = TestBed.createComponent(LoginComponent);
23      component = fixture.componentInstance;
24      authService = TestBed.inject(AuthService);
25      fixture.detectChanges();
26    });
27
      Run | Debug
28    it('should create', () => {
29      expect(component).toBeTruthy();
30    });
31
      Run | Debug
32    it('should call login method on form submit', () => {
33      spyOn(component, 'login');
34      const form = fixture.nativeElement.querySelector('form');
35      form.dispatchEvent(new Event('submit'));
36      expect(component.login).toHaveBeenCalled();
37    });
38
      Run | Debug
39    it('should login successfully', () => {
40      const credentials = { username: 'test', password: 'test' };
41      component.credentials = credentials;
42      spyOn(authService, 'login').and.returnValue(of({ token: '12345' }));
43      spyOn(authService, 'saveToken');
44      spyOn(window, 'alert');
45      spyOn(component['router'], 'navigate');
46
47      component.login();
48
49      expect(authService.login).toHaveBeenCalledWith(credentials);
50      expect(authService.saveToken).toHaveBeenCalledWith('12345');
51      expect(window.alert).toHaveBeenCalledWith('Login successful');
52      expect(component['router'].navigate).toHaveBeenCalledWith(['/dashboard']);
53    });
54
      Run | Debug
55    it('should show error on login failure', () => {
56      const credentials = { username: 'test', password: 'wrong' };
57      component.credentials = credentials;
58      spyOn(authService, 'login').and.returnValue(throwError({ status: 401 }));
59      spyOn(window, 'alert');
60
61      component.login();
62
63      expect(authService.login).toHaveBeenCalledWith(credentials);
64      expect(window.alert).toHaveBeenCalledWith('Invalid credentials');
65    });
66
      Run | Debug
67    it('should call forgotPassword method when forgot password link is clicked', () => {
68      spyOn(component, 'forgotPassword');
69      const forgotPasswordLink = fixture.nativeElement.querySelector('a');
70      forgotPasswordLink.click();
```

Unit Test for Register using **Jasmine Framework**

```
Run | Debug
describe('RegisterComponent', () => {
  let component: RegisterComponent;
  let fixture: ComponentFixture<RegisterComponent>;
  let authService: AuthService;
  let router: Router;

  beforeEach(async () => {
    const authServiceMock = {
      register: jasmine.createSpy('register').and.returnValue(of({}))
    };

    const routerMock = {
      navigate: jasmine.createSpy('navigate')
    };

    await TestBed.configureTestingModule({
      imports: [FormsModule, RegisterComponent],
      providers: [
        { provide: AuthService, useValue: authServiceMock },
        { provide: Router, useValue: routerMock }
      ]
    })
    .compileComponents();

    fixture = TestBed.createComponent(RegisterComponent);
    component = fixture.componentInstance;
    authService = TestBed.inject(AuthService);
    router = TestBed.inject(Router);
    fixture.detectChanges();
  });

  Run | Debug
  it('should create', () => {
    expect(component).toBeTruthy();
  });

  Run | Debug
  it('should call register method of AuthService on form submit', () => {
    component.user.username = 'testuser';
    component.user.password = 'password';
    component.register();
    expect(authService.register).toHaveBeenCalledWith(component.user);
  });

  Run | Debug
  it('should navigate to login on successful registration', () => {
    component.register();
    expect(router.navigate).toHaveBeenCalledWith(['/login']);
  });

  Run | Debug
  it('should show alert on successful registration', () => {
    spyOn(window, 'alert');
    component.register();
    expect(window.alert).toHaveBeenCalledWith('Registration successful');
  });

  Run | Debug
  it('should show alert on registration failure', () => {
    (authService.register as jasmine.Spy).and.returnValue(throwError('Registration failed'));
    spyOn(window, 'alert');
    component.register();
    expect(window.alert).toHaveBeenCalledWith('Registration failed');
  });
});
```