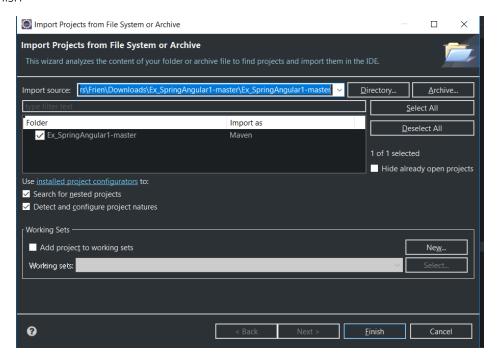
Backend: Spring boot

- 1. เปิดโปรแกรม eclipse
- 2. ที่เมนู File > Open Projects from File System..
- 3. เลือก Directory ไปที่โฟลเดอร์ Ex_SpringAngular1-master\Ex_SpringAngular1-master แล้วคลิก Finish



4. ที่แถบ Project Explorer ไปที่ src\main\java\com\example เปิด CrudBackendApplication.java

```
ြဲ Project Explorer 🛭
                                                             crudBackend [boot]
                                                                1 package com.example;
 Ex_SpringAngular1-master [boot]
                                                               30 import org.springframework.beans.factory.annotation.Autowired;
  Spring Elements
  🕯 📂 src/main/java
                                                              11 @SpringBootApplication
    12 public class CrudBackendApplication implements CommandLineRunner{
       J CrudBackendApplication.java
                                                                       @Autowired
        ▶ G CrudBackendApplication
                                                                       private UserRepository userRepository;
    public static void main(String[] args) {
    b == com.example.entities
                                                                           SpringApplication.run(CrudBackendApplication.class, args);
    b == com.example.repositories
  ▶ " src/main/resources
 src/test/java
                                                               200
                                                                       @Override
                                                                       public void run(String... arg0) throws Exception {
   userRepository.save(new User("one","one"));
   userRepository.save(new User("two","one"));
   userRepository.save(new User("three","one"));
    JRE System Library [JavaSE-1.8]
                                                              22
23
24
  Maven Dependencies
  ▶ 📂 src
  b 📂 target
    mvnw
    mvnw.cmd
```

5. กด Run (CTRL + F11)



```
2018-04-30 21:40:56.850 INFO 4652 --- [ main] o.s.w.s.handler.SimpleUrlHandlerMapping : Mapped URL path [/webjars/**] onto handler of type [class org.sprii 2018-04-30 21:40:56.850 INFO 4652 --- [ main] o.s.w.s.handler.SimpleUrlHandlerMapping : Mapped URL path [/**] onto handler of type [class org.sprii 2018-04-30 21:40:57.189 INFO 4652 --- [ main] o.s.w.s.handler.SimpleUrlHandlerMapping : Mapped URL path [/**] onto handler of type [class org.sprii 2018-04-30 21:40:57.189 INFO 4652 --- [ main] o.s.w.s.handler.SimpleUrlHandlerMapping : Mapped URL path [/**] onto handler of type [class org.sprii 2018-04-30 21:40:57.189 INFO 4652 --- [ main] o.s.w.s.handler.SimpleUrlHandlerMapping : Mapped URL path [/**] onto handler of type [class org.sprii 2018-04-30 21:40:57.189 INFO 4652 --- [ main] o.s.w.s.handler.SimpleUrlHandlerMapping : Mapped URL path [/**] onto handler of type [class org.sprii 2018-04-30 21:40:57.189 INFO 4652 --- [ main] o.s.w.s.handler.SimpleUrlHandlerMapping : Mapped URL path [/**] onto handler of type [class org.sprii 2018-04-30 21:40:57.189 INFO 4652 --- [ main] o.s.w.s.handler.SimpleUrlHandlerMapping : Mapped URL path [/**] onto handler of type [class org.sprii 2018-04-30 21:40:57.189 INFO 4652 --- [ main] o.s.w.s.handler.SimpleUrlHandlerMapping : Mapped URL path [/**] onto handler of type [class org.sprii 2018-04-30 21:40:57.189 INFO 4652 --- [ main] o.s.w.s.handler.SimpleUrlHandlerMapping : Mapped URL path [/**] onto handler of type [class org.sprii 2018-04-30 21:40:57.189 INFO 4652 --- [ main] o.s.w.s.handler.SimpleUrlHandlerMapping : Mapped URL path [/**] onto handler of type [class org.sprii 2018-04-30 21:40:57.189 INFO 4652 --- [ main] o.s.w.s.handler.SimpleUrlHandlerMapping : Mapped URL path [/**] onto handler of type [class org.sprii 2018-04-30 21:40:57.189 INFO 4652 --- [ main] o.s.w.s.handler.SimpleUrlHandlerMapping : Mapped URL path [/**] onto handler of type [class org.sprii 2018-04-30 21:40:57.189 INFO 4652 --- [ main] o.s.w.s.handler.SimpleUrlHandlerMapping : Mapped URL path [/**] onto
```

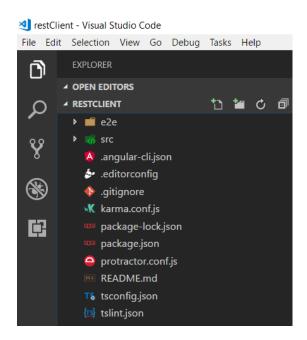
6. เข้า http://localhost:8080/api/users จะเห็นดังรูป

```
[{"id":1,"fname":"one","lname":"one"},{"id":2,"fname":"two","lname":"one"},{"id":3,"fname":"three","lname":"one"}]
```

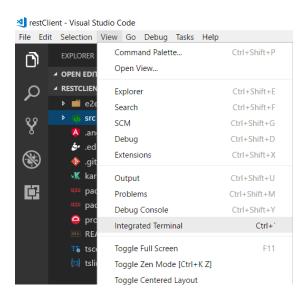
Frontend: Angular

- 1. เปิดโปรแกรม Visual Studio Code
- 2. แถบเมนู File > Open Folder...
- 3. ไปที่ Ex_SpringAngular1-master\Ex_SpringAngular1-master\src\main\resources\static

แล้วคลิกที่โฟลเดอร์ restClient กด Select Folder จะได้ดังรูป



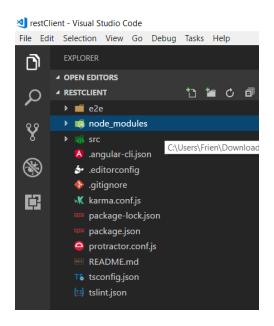
4. แถบเมนู view เลือก Integrated Terminal



5. ที่หน้าต่าง Terminal ด้านล่าง พิมพ์ npm install แล้ว Enter

```
Frien@LAPTOP-8CMPGD01 MINGW64 ~/Downloads/Ex_SpringAngular1-master/Ex_SpringAngular1-master/src/main/resources/static/restClient $ npm install
```

6. รอจน install เสร็จ จะได้ตามรูป



7. ไปที่ src>app>>app.component.ts จะไม่เจอ error "Cannot find module" ดังรูป

```
omponent.ts - restClient - Visual Studio Code
            Selection View Go Debug Tasks Help
                                                                                                                                                                                                                            🤼 app.component.ts 🗴
                                                                                                                                                                                                                                                                   import { Component } from '@angular/core';
     △ OPEN EDITORS
                          🔼 app.component.ts src\app
                                                                                                                                                                                                                                                                 @Component({
        RESTCLIENT
                                                                                                                                                                                                                                                                            selector: 'app-root',
                                                                                                                                                                                                                                                                           templateUrl: './app.component.html',
             ▶ node_modules
                                                                                                                                                                                                                                                                           styleUrls: ['./app.component.css']
             export class AppComponent {

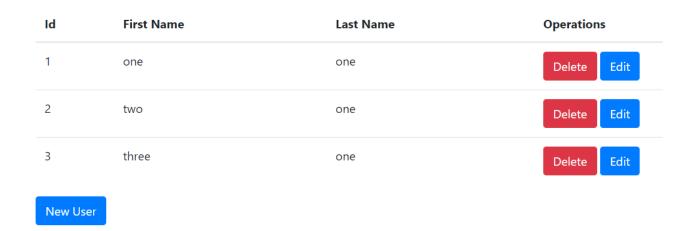
▲ replace approximately a
                                                                                                                                                                                                                                                                   title = 'app';
                              ▶ ■ shared-service
                                          app.component.css
                                          app.component.html
                                        app.component.spec.ts
                                          🔼 app.component.ts
```

หมายเหตุ : หากพบ error "Cannot find module" เปิด Integrated Terminal แล้วพิมพ์ rm -rf node_modules
npm install

8. พิมพ์ ng serve รอ Compile เสร็จสิ้น

```
$ ng serve
*** NG Live Development Server is listening on localhost:4200, open your browser on http://localhost:4200/ **
Date: 2018-04-30T16:27:49.337Z
Hash: c22e1dea220cd646c26b
Time: 7918ms
chunk {inline} inline.bundle.js (inline) 3.85 kB [entry] [rendered]
chunk {main} main.bundle.js (main) 47.9 kB [initial] [rendered]
chunk {polyfills} polyfills.bundle.js (oplyfills) 554 kB [initial] [rendered]
chunk {vendor} vendor.bundle.js (vendor) 9.51 MB [initial] [rendered]
webpack: Compiled successfully.
```

9. เข้า http://localhost:4200/ จะได้ดังรูป



10. สามารถ Create , Read , Update , Delete ข้อมูลได้

• New User

ID (random)	
First Name	
Jame	
Last Name	
1319	
save	

ผลที่ได้

Id	First Name	Last Name	Operations
1	one	one	Delete Edit
2	two	one	Delete Edit
3	three	one	Delete Edit
4	Jame	1319	Delete Edit

New User

• Delete

Id	First Name	Last Name	Operations
4	Jame	1319	Delete Edit

New User

Update

ID (random)			
6			
First Name			
Jame			
Last Name			
09571319			
save			

ผลที่ได้

Id	First Name	Last Name	Operations
6	Jame	09571319	Delete Edit

New User