1. ?DotNet server
2. C# Extensions
3. Git
   1. GitHub
   2. Git Graph
   3. Git Lens
4. NuGet Gallery
5. SQLite
6. Angular
7. Node-JS
8. CORS
   1. API 🡪 Startup.cs 🡪 method ConfigureServices – add:
9. services.AddCors();
   1. .. 🡪 method Configure, after line “app.UseRouting();” – add:
10. app.UseCors(policy =>
11. policy.AllowAnyHeader()
12. .AllowAnyMethod()
13. .WithOrigins("http://localhost:4200")
14. );
    1. Save 🡪 restart “dotnet run”.
    2. [Debug status.](https://d.docs.live.net/2bb79b4ac30b365b/Documents/HackerU/07.%20Angular%20-%20C%20Sharp%5eJ%20JavaScript%5eJ%20EF/InstallationSteps/Assets/CORS%20-%20debug%20the%20result%20after%20CORS%20add%5eMconfig.png)
15. HTML by string evaluation
    1. Build in “app.component.html” (using Angular structural directive).
    2. Example:
16. <h1>
17. {{title}}
18. </h1>
19. <ul>
20. <li \*ngFor="let user of users">
21. {{user.Id}} - {{user.userName}}
22. </li>
23. </ul>
24. Bootstrap
    1. ..\Client> 🡪 install bootstrap “manually” by command:

**npm i ngx-bootstrap --save**

* 1. copy code from [here](https://valor-software.com/ngx-bootstrap/old/6.2.0/#/documentation) 🡪 Bootstrap 4 🡪 to “..\client\src\index.html”.
* In case of versions incompliancy, install Angular 12 by command below + restore code of Client: **npm install @angular/cli@12**
  1. To check if installed successfully, run command: **ng build**
  2. Install [font-awesome](https://www.npmjs.com/package/font-awesome) by command: **npm i font-awesome**
  3. ..\client\angular.json 🡪 “options” 🡪 “styles” – add:

1. "./node\_modules/font-awesome/css/font-awesome.min.css",
   1. To check if it works, add:

3.    <i class="fa fa-user"></i>

1. HTTPS
   1. Perform actions by “..\StudentAssets\generateTrustedSSL\Instructions.txt”.
   2. ..\client\**ssl**
   3. Copy “server.crt” and “server.key”

From:

..\StudentAssets\generateTrustedSSL\

To:

..\client\ssl\

* 1. ..\client\angular.json 🡪 “projects” 🡪 “client” 🡪 “architect” 🡪 “serve” 🡪 ”configurations” 🡪 “production” and “development” 🡪 add:

1. "sslKey":"./ssl/server.key",
2. "sslCert":"./ssl/server.crt",
3. "ssl": true
   1. Restart **dotnet run** + **ng serve** -o 🡪 should open https://localhost:4200/
   2. Update CORS accordingly.

1. HASH + SALT
   1. ..\API\Entities\AppUser.cs - add:
2. public byte[] PasswordHash { get; set; }
3. public byte[] PasswordSalt { get; set; }
   1. Perform command dotnet ef migrations add UserPasswordAdded
   2. Perform command dotnet ef database update
4. JSON Web Token
   1. Install from NuGet gallery: System.IdentityModel.Tokens.Jwt (~v6.15.0)
   2. Create ..\Interfaces\ITokenService.cs
      1. With method:
         1. string CreateToken(AppUser user);
   3. Create ..\Services\TokenService.cs