

Developer Assessment

Introduction

Candidate is required to complete CRUD of backend and frontend functions for the accompanying solution.

The solution consists of,

1. .NET Core project
 - a. Stored in the /api folder
2. Angular 8 project
 - a. Stored in the /web folder
3. SQLite Database
 - a. Stored at /api/DB/data.db

Name	Date modified	Type	Size
api	30/1/2020 6:18 PM	File folder	
web	3/2/2020 9:08 AM	File folder	
angulardoc.json	31/1/2020 5:34 PM	JSON File	1 KB
readme.md	30/1/2020 5:15 PM	MD File	1 KB

Welcome to web!

Shipment Number	Price	Vehicle Size	Vehicle Build Up	Pickup	Pickup Time	Drop	Drop Time	Load 1	Load 2	Load 3		
S200130-0111	MYR 1000	1TON	Hardbox truck	Johor	30-01-2020 08:00 am	Selangor	30-01-2020 12:00 pm	10 x Cartons - 25kg - 0.5m3	20 x Boxes - 20kg - 0.3m3	10 x Tubes - 5kg - 0.1m3		
S200130-0112	MYR 455	1TON	Hardbox truck	Kuala Lumpur	30-01-2020 08:30 am	Ipoh	30-01-2020 11:30 am	50 x Boxes - 45kg - 1m3				

At the end of the assessment, the entire solution including any and all changes should be zipped and returned to Ezyhaul for grading.

Note1: Please verify that the solution works before sending it back to Ezyhaul for grading.

Note2: Development time for this assessment is not expected to exceed **4 hours** if the candidate is familiar with .Net and Angular. For candidates who are unfamiliar they should spend some time to become familiar with the technology before attempting the test.

Note3: Please fill in and return the assessment feedback so that we can improve our candidate assessment methodology. Thank you.

Note4: If there are any questions about this assessment, please feel free to contact us as below.

- Edmund Lee (e.lee@ezyhaul.com) – Technical Lead

Requirements

- Develop forms to create, edit and delete new offers
 - Delete offer should prompt for confirmation before deleting
- All forms should have the appropriate form UI and validation
 - Columns marked as Required should be required on form
 - Remarks will contain additional validation information if any
- Data should be saved into the provided SQLite database
- Database design should not be changed

Skills

- Angular
- .Net Core
- Entity Framework Core

Database design

Column	Data type	Required	Remarks
Id	GUID	Yes	Unique ID
ShipmentNumber	String	Yes	Should follow the format as below S{YYMMDD}-{running number} YY – 2 digit year MM – 2 digit month DD – 2 digit day
Price	Decimal	Yes	2 decimal places
Currency	String	Yes	Default value to MYR
VehicleSize	String	Yes	Only allow the following values 1TON, 3TON, 5TON, 10TON
VehicleBuildUp	String	Yes	Only allow the following values Hardbox truck Canvas truck Open truck
PickupLocationName	String	Yes	Only allow states in Peninsula Malaysia
PickupDateTime	Long	Yes	Pickup date time should be earlier than delivery date time Unixtimestamp in milliseconds Save in DB as number but render on web as DateTime (use moment.js)
DeliveryLocationName	String	Yes	Only allow states in Peninsula Malaysia

DeliveryDateTime	Long	Yes	Delivery date time should be later than pickup date time Unixtimestamp in milliseconds Save in DB as number but render on web as DateTime (use moment.js)
LoadDetail1	String	No	Free entry textarea
LoadDetail2	String	No	Free entry textarea
LoadDetail3	String	No	Free entry textarea

Validation

1. Pickup Date Time must be earlier than Delivery Date Time
2. Pickup Date Time cannot be equal to Delivery Date Time

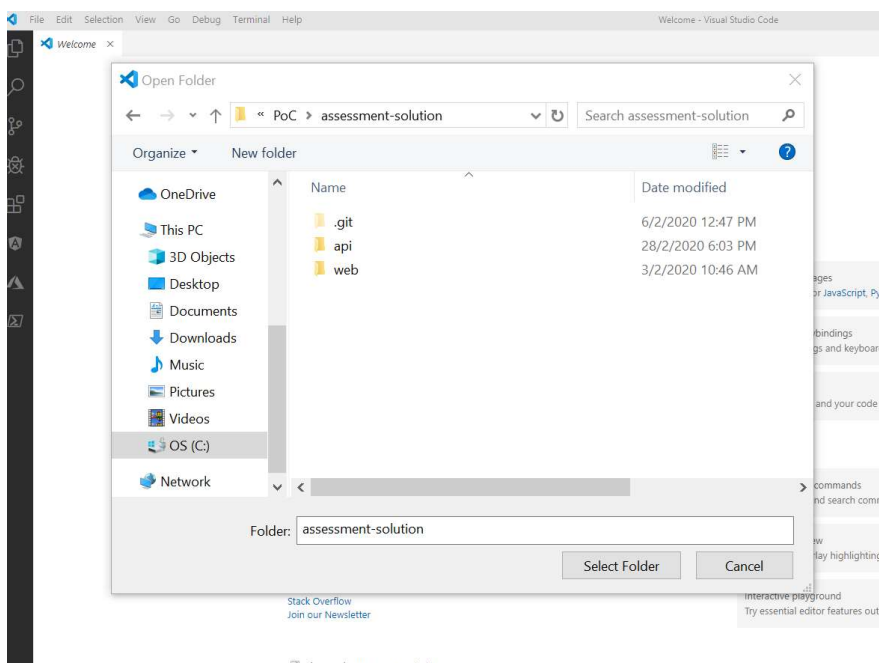
Running the project

Prerequisites

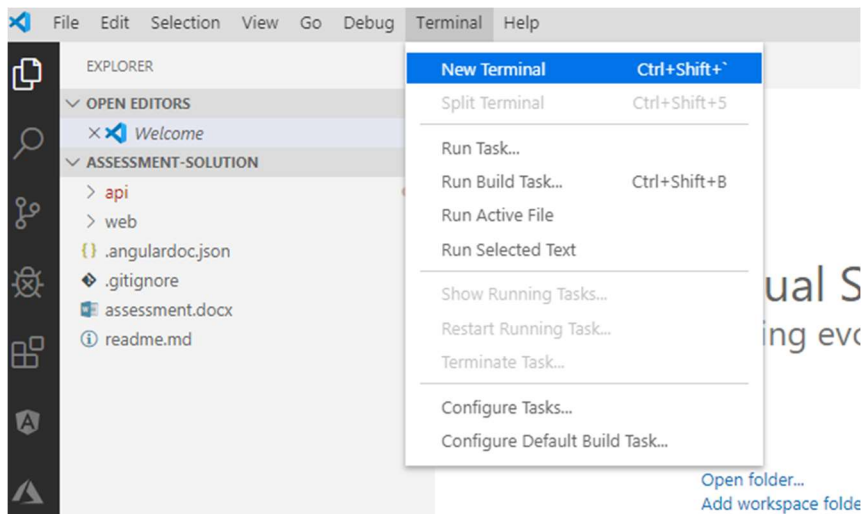
- Install [Node JS](#) – LTS version
- Install [.Net Core SDK](#) – 3.1
- Install [Angular CLI](#) – Node JS
- Install [VS Code](#) - *optional*

Running the API project

1. Using Visual Studio Code, open the folder containing the solution



2. Open New Terminal



3. Using the terminal window, run the following commands in the folder

- cd api
- dotnet restore
- dotnet build
- dotnet run

```

PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  1: dotnet  +
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.
Try the new cross-platform PowerShell https://aka.ms/pscore6

Loading personal and system profiles took 288ms.
PS C:\Dev\PoC\assessment-solution> cd api
PS C:\Dev\PoC\assessment-solution\api> dotnet restore
Restore completed in 424.65 ms for C:\Dev\PoC\assessment-solution\api\api.csproj.
PS C:\Dev\PoC\assessment-solution\api> dotnet build
Microsoft (R) Build Engine version 16.4.0+e901837fe for .NET Core
Copyright (C) Microsoft Corporation. All rights reserved.

Restore completed in 35.89 ms for C:\Dev\PoC\assessment-solution\api\api.csproj.
api -> C:\Dev\PoC\assessment-solution\api\bin\Debug\netcoreapp3.1\api.dll

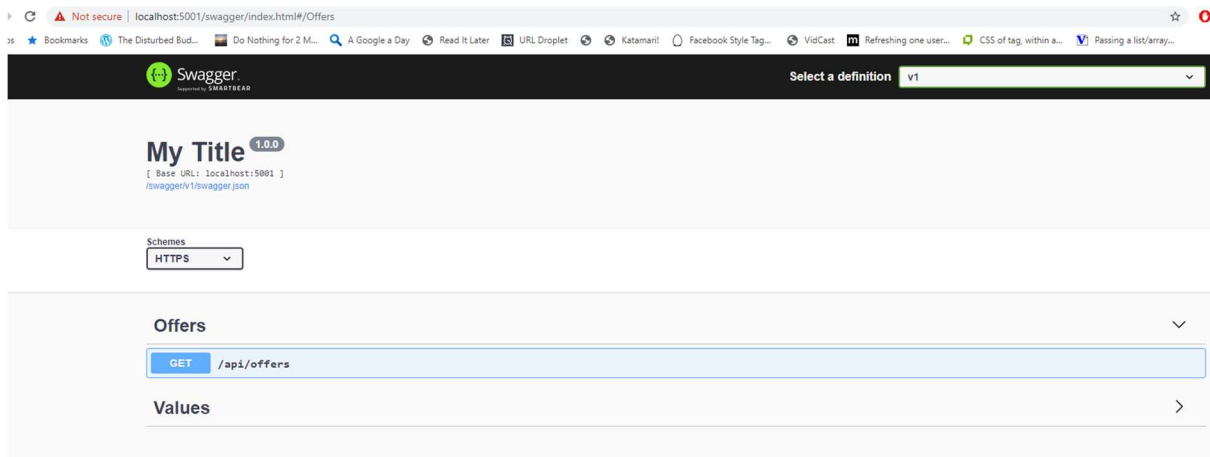
Build succeeded.
0 Warning(s)
0 Error(s)

Time Elapsed 00:00:01.39
PS C:\Dev\PoC\assessment-solution\api> dotnet run
info: Microsoft.AspNetCore.DataProtection.KeyManagement.XmlKeyManager[0]
      User profile is available. Using 'C:\Users\ezyha_3738u7h\AppData\Local\ASP.NET\DataProtection-Keys' as key repository and Windows DPAPI to encrypt keys at rest.
Hosting environment: Development
Content root path: C:\Dev\PoC\assessment-solution\api
Now listening on: https://localhost:5001
Now listening on: http://localhost:5000
Application started. Press Ctrl+C to shut down.
[]
  
```

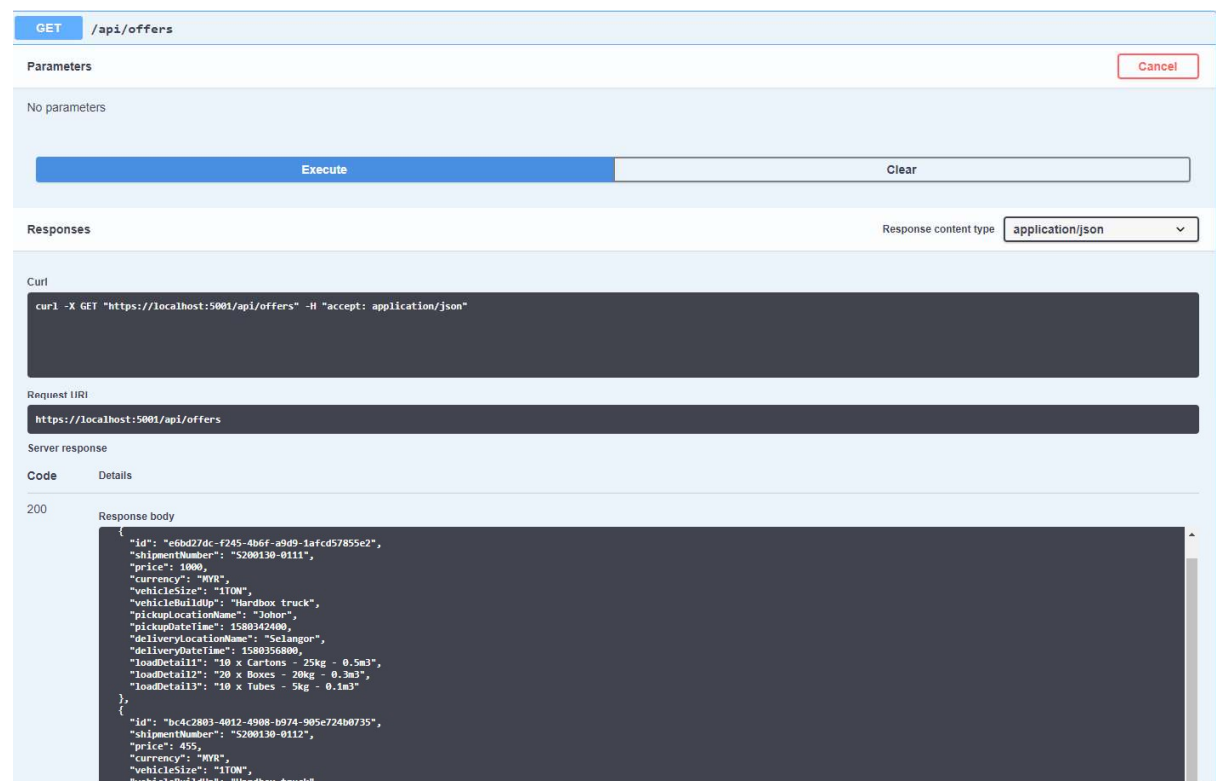
4. The api project should be running now. To verify this, navigate to the site at,

<https://localhost:5001/swagger>

- Bypass browser prompt on insecure certification if necessary



- Expand the Offers section and expand the section “/api/offers”. Click “Try it out” and followed by “Execute”. This will make a call to the api and the response will be displayed below.



Running the Web project

- Open a new terminal window

```

PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL

Info: Microsoft.AspNetCore.Hosting.Internal.WebHost[2]
Request finished in 0.0018ms 302
Info: Microsoft.AspNetCore.Hosting.Internal.WebHost[1]
Request starting HTTP/1.1 GET https://localhost:5001/swagger/index.html
Info: Microsoft.AspNetCore.Hosting.Internal.WebHost[2]
Request finished in 0.2636ms 200 text/html; charset=utf-8
Info: Microsoft.AspNetCore.Hosting.Internal.WebHost[1]
Request starting HTTP/1.1 GET https://localhost:5001/swagger/swagger-ui.css
Info: Microsoft.AspNetCore.StaticFiles.StaticFileMiddleware[2]
Sending file. Request path: '/swagger-ui.css'. Physical path: 'N/A'
Info: Microsoft.AspNetCore.Hosting.Internal.WebHost[2]
Request finished in 3.2387ms 200 text/css
Info: Microsoft.AspNetCore.Hosting.Internal.WebHost[1]
Request starting HTTP/1.1 GET https://localhost:5001/swagger/swagger-ui-bundle.js
Info: Microsoft.AspNetCore.Hosting.Internal.WebHost[1]
Request starting HTTP/1.1 GET https://localhost:5001/swagger/swagger-ui-standalone-preset.js
Info: Microsoft.AspNetCore.StaticFiles.StaticFileMiddleware[2]
Sending file. Request path: '/swagger-ui-bundle.js'. Physical path: 'N/A'
Info: Microsoft.AspNetCore.Hosting.Internal.WebHost[2]
Request finished in 2.4929ms 200 application/javascript
Info: Microsoft.AspNetCore.StaticFiles.StaticFileMiddleware[2]
Sending file. Request path: '/swagger-ui-standalone-preset.js'. Physical path: 'N/A'
Info: Microsoft.AspNetCore.Hosting.Internal.WebHost[2]
Request finished in 20.0933ms 200 application/javascript
Info: Microsoft.AspNetCore.Hosting.Internal.WebHost[1]
Request starting HTTP/1.1 GET https://localhost:5001/swagger/v1/swagger.json
Info: Microsoft.AspNetCore.Hosting.Internal.WebHost[2]
Request finished in 0.1035ms 200 application/json; charset=utf-8
n
  
```

7. In the new terminal window, run the following commands

- cd web
- npm install
- npm start

```

PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL

Try the new cross-platform PowerShell https://aka.ms/powershell

Loading personal and system profiles took 1969ms.
PS C:\Dev\POC\assessment-solution> cd web
PS C:\Dev\POC\assessment-solution\web> npm install
> core-js@3.2.1 postinstall C:\Dev\POC\assessment-solution\web\node_modules\core-js
> node scripts/postinstall || echo "ignore"

Thank you for using core-js ( https://github.com/zloirock/core-js ) for polyfilling JavaScript standard library!

The project needs your help! Please consider supporting of core-js on Open Collective or Patreon:
> https://opencollective.com/core-js
> https://www.patreon.com/zloirock

Also, the author of core-js ( https://github.com/zloirock ) is looking for a good job -)

> @angular/cli@8.3.23 postinstall C:\Dev\POC\assessment-solution\web\node_modules\@angular\cli
> node ./bin/postinstall/script.js

npm WARN optional SKIPPING OPTIONAL DEPENDENCY: fsevents@1.2.11 (node_modules\webpack-dev-server\node_modules\fsevents):
npm WARN notsup SKIPPING OPTIONAL DEPENDENCY: Unsupported platform for fsevents@1.2.11: wanted {"os":"darwin","arch":"any"} (current: {"os":"win32","arch":"x64"})
npm WARN optional SKIPPING OPTIONAL DEPENDENCY: fsevents@1.2.11 (node_modules\webpack\node_modules\fsevents):
npm WARN notsup SKIPPING OPTIONAL DEPENDENCY: Unsupported platform for fsevents@1.2.11: wanted {"os":"darwin","arch":"any"} (current: {"os":"win32","arch":"x64"})
npm WARN optional SKIPPING OPTIONAL DEPENDENCY: fsevents@2.1.1 (node_modules\@angular\compiler-cli\node_modules\fsevents):
npm WARN notsup SKIPPING OPTIONAL DEPENDENCY: Unsupported platform for fsevents@2.1.1: wanted {"os":"darwin","arch":"any"} (current: {"os":"win32","arch":"x64"})
npm WARN optional SKIPPING OPTIONAL DEPENDENCY: fsevents@2.1.2 (node_modules\fsevents):
npm WARN notsup SKIPPING OPTIONAL DEPENDENCY: Unsupported platform for fsevents@2.1.2: wanted {"os":"darwin","arch":"any"} (current: {"os":"win32","arch":"x64"})

added 1803 packages from 532 contributors and audited 16004 packages in 25.144s
found 0 vulnerabilities

PS C:\Dev\POC\assessment-solution\web> npm start
> web@0.0.0 start C:\Dev\POC\assessment-solution\web
> ng serve

10% building 3/3 modules 0 active [wds]: Project is running at http://localhost:4200/webpack-dev-server/
i [wds]: webpack output is served from /
i [wds]: 404s will fallback to //index.html

chunk [main] main.js, main.js.map (main) 36.6 kB [initial] [rendered]
chunk [offers-offers-module] offers-offers-module.js, offers-offers-module.js.map (offers-offers-module) 2.77 MB [rendered]
chunk [polyfills] polyfills.js, polyfills.js.map (polyfills) 264 kB [initial] [rendered]
chunk [runtime] runtime.js, runtime.js.map (runtime) 9.61 kB [entry] [rendered]
chunk [styles] styles.js, styles.js.map (styles) 178 kB [initial] [rendered]
chunk [vendor] vendor.js, vendor.js.map (vendor) 5.21 MB [initial] [rendered]
Date: 2020-03-04T01:59:02.706Z - Hash: 40a0a5dc7c4fb28f15fc - Time: 13047ms
** Angular Live Development Server is listening on localhost:4200, open your browser on http://localhost:4200/ **
i [wds]: Compiled successfully.
  
```

8. The web project should be running now. To verify this, navigate to the site at <http://localhost:4200>

Shipment Number	Price	Vehicle Size	Vehicle Build Up	Pickup	Pickup Time	Drop	Drop Time	Load 1	Load 2	Load 3		
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S200130-0112	MYR 455	1TON	Hardbox truck	Kuala Lumpur	30-01-2020 08:30 am	Ipoh	30-01-2020 11:30 am	50 x Boxes - 45kg - 1m3				

Development Notes

- The Angular project implements **live reload** so changes to the project will cause the project to auto rebuild and the web to auto refresh
- The .Net Core project on the other hand does not implement live reload so you will need to stop and restart the project manually
- The resources list in the next section contains links that are related or will be useful for development of this assessment project.

Resources

- Angular Docs Introduction - <https://angular.io/docs>
- Angular Environment Setup - <https://angular.io/guide/setup-local>
- Visual Studio Code - <https://code.visualstudio.com/>
- Moment JS - <https://momentjs.com/>
- Angular Material - <https://material.angular.io/components/categories>
- Angular Flex Layout - <https://github.com/angular/flex-layout>
- Material Icons - <https://material.io/resources/icons/?style=baseline>
- Angular Reactive Forms - <https://angular.io/guide/reactive-forms>
- Angular Form Validation - <https://angular.io/guide/form-validation>
- Angular CLI Wiki - <https://github.com/angular/angular-cli/wiki/1-x-home>
- SQLite DB Browser - <https://sqlitebrowser.org/>
- Angular 8 RxJS tutorial - <https://www.djamware.com/post/5da31946ae418d042e1aef1d/angular-8-tutorial-observable-and-rxjs-examples>