Profitability Calculator

Execution Instructions

Prerequisites

Profitability Calculator application was developed with the following technologies. So it's recommended to install the following versions.

- Microsoft .NET version 6.0
- Node version 18.16.0
- Npm version 9.5.1
- MYSQL

Git url: https://github.com/tharinduroshana/profitability-calculator.git

Backend

1) Check out the project from the above GIT repository.
2) Navigate to the "ProfitabilityCalculatorBackend" folder.
3) It's recommended to open the solution in an IDE (Ex: VS Code).
4) Navigate inside the "ProfitabilityCalculator" folder.
5) Open the "appSettings.json" file to modify the MYSQL connection String.
6) The sample connection String has already committed. You just have to change the username, password, server and port.

Ex: If your

Username = "testuser"
Password = "testpassword"
Server = "localhost"
Port = "3306"

The connection string should look like below.

```
"ConnectionStrings": {
 "Default":
"server=localhost;port=3306;user=testuser;password=testpassword;database=profit
ability_calc_db"
},
```

7) Then everything is ready to be launched. Open the console in the "ProfitabilityCalculatorBackend" folder.
8) Execute the following command. This should build the project and the build should be successful.

```
dotnet build
```

9) Once the build succeeds, execute the following command to run the project

```
dotnet run --project ./ProfitabilityCalculator/
```

If everything is right the server should now be available in the following ports

https://localhost:7241
http://localhost:5105

And the Swagger documentation should now be available in the following URL.

https://localhost:7241/swagger/index.html

Frontend (Web)

1) In the root folder of the above checked out repository, you'll find the "frontend" folder. Navigate inside that project.
2) Open a terminal window inside and type the below command.

```
npm install
```

This will install all the node modules and this should be successfully completed.

3) Then run the following command in the terminal.

```
npm run dev
```

4) This will open up the Vue server on the default port

http://localhost:5173/

Open the above URL in the browser and the Profitability Calculator application is ready to test…!

Xamarin (Android)

Requirements for Mobile

- Xamarin Android 12.1
- Xamarin iOS 16.0
- Microsoft Visual Studio / IntelliJ Rider
- JDK installed
- Android SDK installation

- Android virtual device manager (Android emulator or an alternative) installation.

Only the basic functionalities of the Xamarin app has been developed and the iOS version is not developed due to time constraints. Due to the limited time, the android application was tested with the basic scenarios.

Follow the below steps to run the Xamarin android project.

1) Goto the root directory and open the “ProfitabilityCalculatorMobile” project on Visual Studio or IntelliJ RIder.
2) Since the backend is hosted in the localhost in the local machine, in order to access the backend from the android emulator, http://10.0.2.2 should be used. This is already defined in “Constants.cs” file inside the “ProfitabilityCalculatorMobile” project. If the backend is hosted in a proper server, the following line can be replaced to test it.

```
public const string ApiBaseUrl = "https://api.example.com/";
```

3) Build the project with the IDE and run.!

Testing

xUnit testing

Follow the below steps to execute .NET unit tests.

1) In the above “ProfitabilityCalculatorBackend” folder, navigate to the “ProfitabilityCalculator.Tests” directory and open a terminal there.
2) Run the following command to execute unit tests.

```
dotnet test
```

   This will search for all the unit tests and execute them.

Cypress end to end testing

Follow the below steps to execute end to end testing.

1) Navigate to the root folder of the above checked out repository. Navigate inside the “profitability-e2e-testing” folder and open up a terminal there.
2) Run the below command to install all the node modules.

```
npm install
```

   This should be successfully completed.
3) Then run the below command in the terminal.

```
npx cypress open
```

This will open up the cypress application.

4) Select the E2E Testing section. It should already be displayed as “configured”.
5) Then select the browser of your choice (Chrome is recommended).
6) Then your selected browser should be opened and under Specs options you should see the “profitability-calculator-e2e-testing.cy.js, profitability-calculator-failure-testing.cy.js” files. Click on either of them.
7) This should execute all the included e2e tests.
8) You can see the execution results and re-run the tests…!

Swagger documentation instructions

1) When the above backend executed, the Swagger documentation should be available under the following url

   https://localhost:7241/swagger/index.html

2) SignUp and Login are two public API’s you can just execute. But if you want to execute the ProfitabilityCalculation or DeleteUser API you need to authorize first. For that run the signup if you haven’t already created a user.
3) Login using the user credentials.
4) Once the login request completes, the response should contain the JWT token under the “token” section inside the JSON. Copy the token value.
5) Press the “Authorize” button on the top right corner of the page.
6) You will see a pop up with an input for the token bearer. Paste the copied token and click authorize.
7) Now you can just close that popup and send the two authorized requests (ProfitabilityCalculation and RemoveUser).

The DeleteUser endpoint is just created for running the cypress end 2 end testings so that we don’t end up creating a bunch of dummy users.

Postman Scripts

The postman scripts are already attached to the root of the Git repository.