



Assignment #1 Due: Mon. Oct. 22, 2018 by 11:59 PM

This assignment can be done individually or in pairs. If you plan to do it in pairs then you should notify your instructor beforehand.

Background

The purpose of this assignment is to get familiar with ASP.NET Core 2.1 and Identity Framework.

Mission

Any authenticated user can calculate compound interest.

In this assignment, you will tackle two challenges:

1. Authenticated users can calculate compound interest
2. User and role management

The home page of the website displays a logo and some static information. Anonymous users will only see the following tabs (or buttons):

- Contact us
- Register
- Login

If a user not in the *Admin* role is authenticated, he/she will see the following tabs (or buttons):

- Contact Us
- Compound Interest
- Logout

If a user with *Admin* role is authenticated, he/she will see the following tabs (or buttons):

- Contact Us
- Compound Interest
- Users & Roles
- Logout

Compound Interest

Refer to this web site for an explanation of the compound interest formula:

<http://www.thecalculatorsite.com/articles/finance/compound-interest-formula.php>

Requirements:

- Your Visual Studio solution will contain two projects.

Zenith – solution file must be saved in this directory

ZenithWeb

- You will use Entity Framework Code First development to create a database named *Zenith* in SQL Server *LocalDB* that can store data with minimum duplication.
- You will use Identity Framework with individual user authentication. (Already Built In)
- Login uses username and password (not email and password)
- User registration must capture the following data:
 - Username
 - Email
 - Password
 - FirstName
 - LastName
 - Address comprising:
 - Address Street
 - Address City
 - Address Province
 - Address Postal Code
 - Address Country
 - Mobile Number
- Display all error messages in red text.
- There should not be any meaningless content on any of the pages. You are urged to clean up content that originates from the standard Visual Studio template with which you generated your starter application.
- Every page must have a meaningful and unique title.
- All display names and column titles must be user friendly.
- Implement appropriate common-sense validations for all data items.
- Seed *Users* and *Roles* with reasonable sample data.
- To help the marker test your application, seed the appropriate identity framework database tables with the following users and roles:

Username	Email	Password	Security Role
a	a@a.a	P@\$w0rd	Admin
m	m@m.m	P@\$w0rd	Member

- Only users belonging to the *Admin* role can manage *Users* and *Roles*
- Deploy your web application to your Azure account.
- Users should not see links/buttons that they are not authorized to access.
- Place your EF migrations commands in a *migrations.txt* file inside your web application's *docs* directory
- There will be only one Entity Framework context named *ApplicationDbContext*

- The home page of the website should look professional.

Manage users & roles

You will also build a UI in the MVC application that will enable the administrator to add/delete *roles* and add/remove *users* from a role. The *Member* role is of special interest because your code automatically adds any registered user to the *Member* role. Only users that belong to the *Member* role can calculate compound interest. Of course, the administrator can remove a user from the *Member* role.

Your code needs to ensure that account "a" is never deleted or removed from the *Admin* role. Otherwise, if this happens, then the admin functionality of your web app may be inaccessible. You should also ensure that the *Admin* role cannot be deleted.

Note that a user can belong to one or more roles.

Readme.txt

Include a single *readme.txt* file with the following information:

- Your name(s), student number(s), and email address(es)
- What you have not completed
- The URL of your assignment 1 deployment on Azure.
- Any major challenges
- Place the *readme.txt* file, together with the *migrations.txt* file, inside a *docs* folder in your web application

Deliverables:

Source code for fully functional ASP.NET Core 2.1 web application.

Warning:

- If your submission does not comply with submission rules then you will lose 10% of the mark.
- You will get a mark of zero if you do not use Entity Framework Code First Development or you do not deploy your web application to azure.

Submission:

- Delete the *bin* and *obj* folder before you ZIP your file to give it a small footprint.
- Your zip file is to be named "*Lastname1_Lastname2_ass1.zip*". (Example: *Doe_Smith_ass1.zip* if you are working in pairs or simply *Doe_ass1.zip* if you are working individually).
- Do not include unnecessary files that are not needed in your submission.
- Submit your ZIP file to the assignment 1 folder in D2L's drop-box.
- Late submissions are not accepted.
- Each team must make only one submission. If you make more than one submission then you should use the same file name and clearly version the file by adding *_v2*, *_v3*, etc.
- As you submit your solution into D2L, add a D2L comment with the URL of your Azure deployed solution

COMP4976 Assignment 1 marking guide:

Task	Max Mark	Actual Mark
Overall Application Functionality	10	
Data Seeding <ul style="list-style-type: none"> Admin & Member accounts seeded as prescribed 	4	
Form <ul style="list-style-type: none"> Layout Appropriate validations implemented on all data entry pages 	2	
User Management <ul style="list-style-type: none"> Registered user automatically added to <i>Member</i> role Users must belong to <i>Member</i> role to see compound interest page Create and delete roles Add/remove users from roles Username 'a' cannot be deleted or removed from <i>Admin</i> role 	5	
C# and ASP.NET coding best practices <ul style="list-style-type: none"> All pages accessible thru links/buttons on the main page Users do not see links/buttons that they do not have access to. Meaningful content on all pages All pages have sensible titles One EF context class EF migrations commands in <i>docs/migrations.txt</i> file Reasonable validation for all data items 	7	
Other <ul style="list-style-type: none"> URL of Azure site in D2L submission comment Contents & quality of <i>readme.txt</i> file 	2	
TOTAL	30	