Contents

1 General information

”MvcNews 1.0” is created in Visual Studio Code by Annice Strömberg, 2019, with Annice.se as the primary download location. The script is basically a simple web content management application (WCM) that allows an administrator user to create and edit news entries, as well as edit the administrator credentials. Furthermore, visitors can view published news.

2 License

This script is of general public license (GPL), which means that it is free of charge and can be modified to suit your needs. However, in case of redistribution the script must be made available under the same license terms.

3 System description

“MvcNews 1.0” is built in CSS3, razor HTML5, JavaScript, C# with ASP.NET Core, and Transact SQL using SQL Server as a database management system (DBMS).

Furthermore, the server code (C#) is based on the design pattern model-view-controller (MVC) along with a relational database to handle the different application entities.

4 System requirements

The script can be run on a server that supports C# ASP.NET Core 2.2, e.g. on Azure. However, I will not go into any details of how you can deploy this application on an Azure server or suchlike as this script is implemented locally. Yet, I will go through the necessary steps to run this web application on your local computer first and foremost.

As mentioned above, this application requires to be built and ran on a .NET Core 2.2 platform. Furthermore, your integrated development environment (IDE, such as Visual Studio Code) must have at least the following extensions installed:

- C#
- Razor+ (optional, but recommended for more eye-friendly razor code in view).

Nevertheless, you can read more about the necessary setup steps under section “8 Installation guide”.

5 Supported features

The following functions and features are supported by this script:

- Login system based on sessions.
- User password encryption (SHA256) with hash and salt.
- Protection against SQL injections.
- Protection against cross-site forgery.
- Full create/read/update/delete (CRUD) functionality for an admin.
- Responsive design.
- Client and server side validation.
- Pagination.
- Filter function to search entries.

6 Flow descriptions

This section describes and illustrates the different application flows to give you a quick overview of how the application works.

6.1 Sitemap

Anonymous visitors have access to the following site pages and actions:

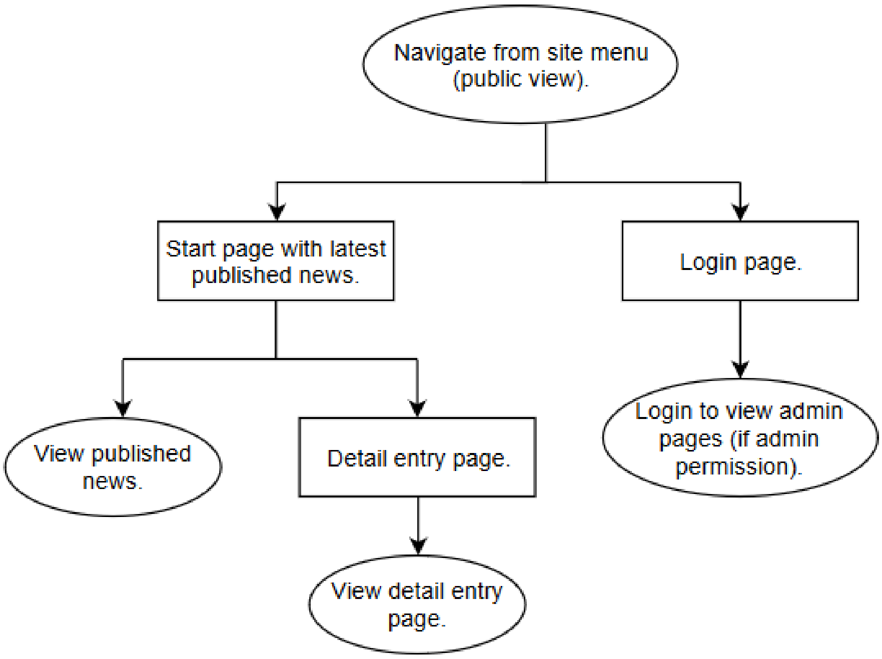

Navigate from site menu (public view).
Start page with latest published news.
Login page.
View published news.
Detail entry page.
Login to view admin pages (if admin permission).
View detail entry page.

Image 1: *Sitemap for public pages and actions.*

The administrator user has access to the following site pages and actions:

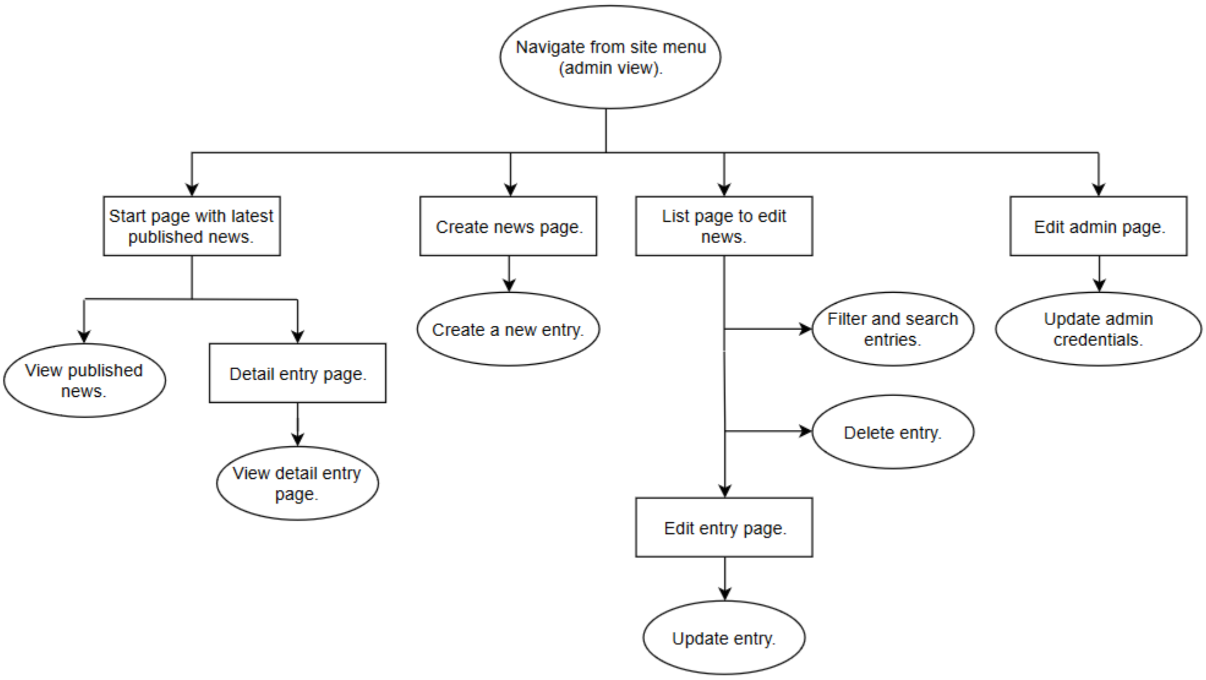


Image 2: *Sitemap for administrator pages and actions.*

6.2 Entity relationship diagram

The application is based on the following entity and database table attributes and relationships:

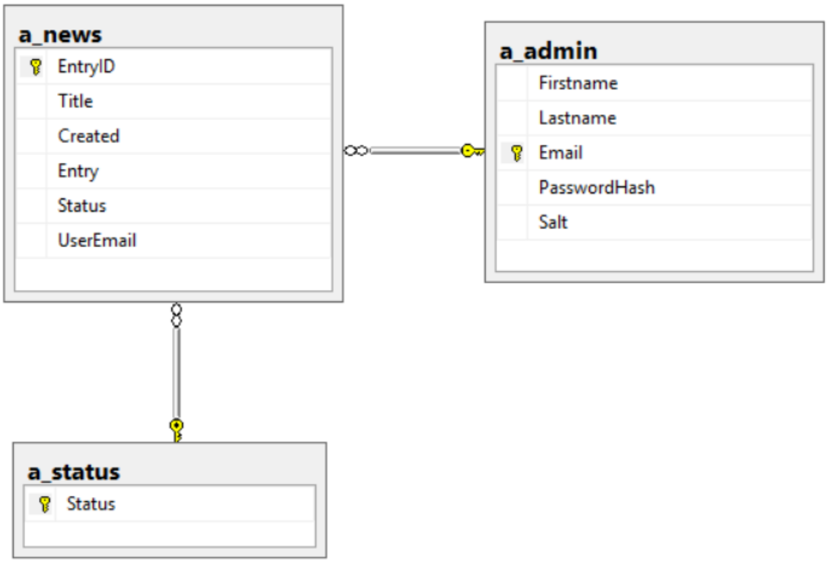


Image 3: *ER-diagram to illustrate the entity relationships.*

6.3 Sequence diagram

The following diagram illustrates an example of how the MVC pattern works for an entry creation request:

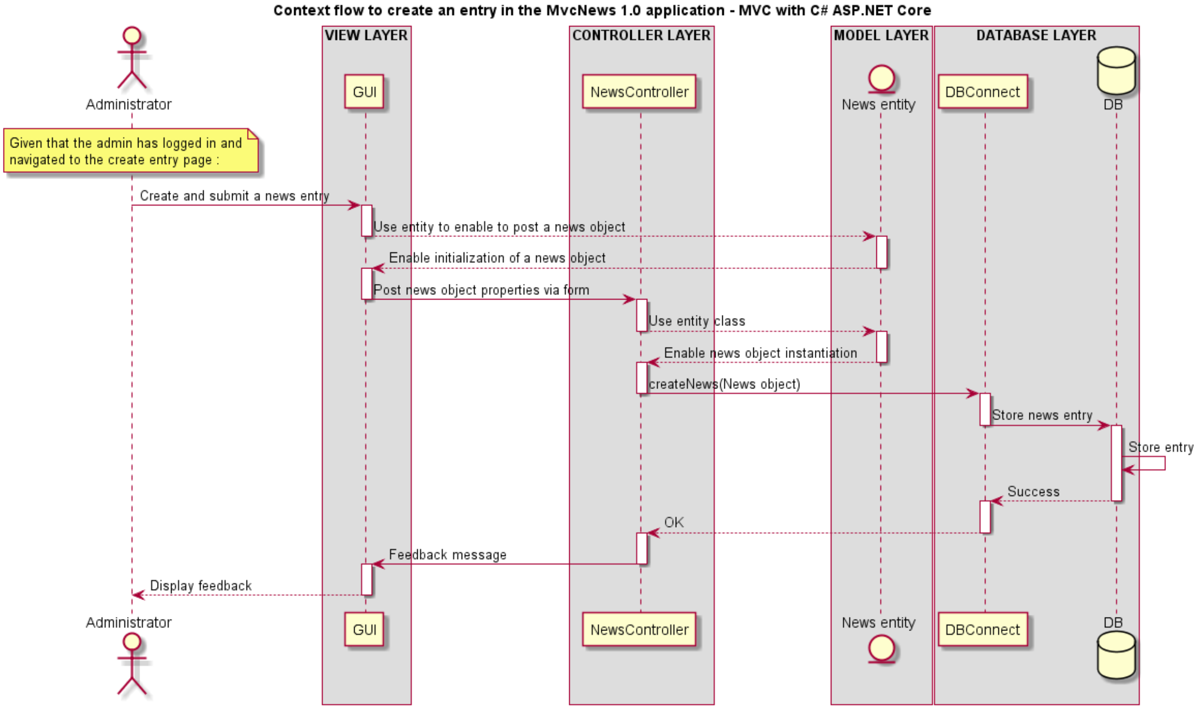
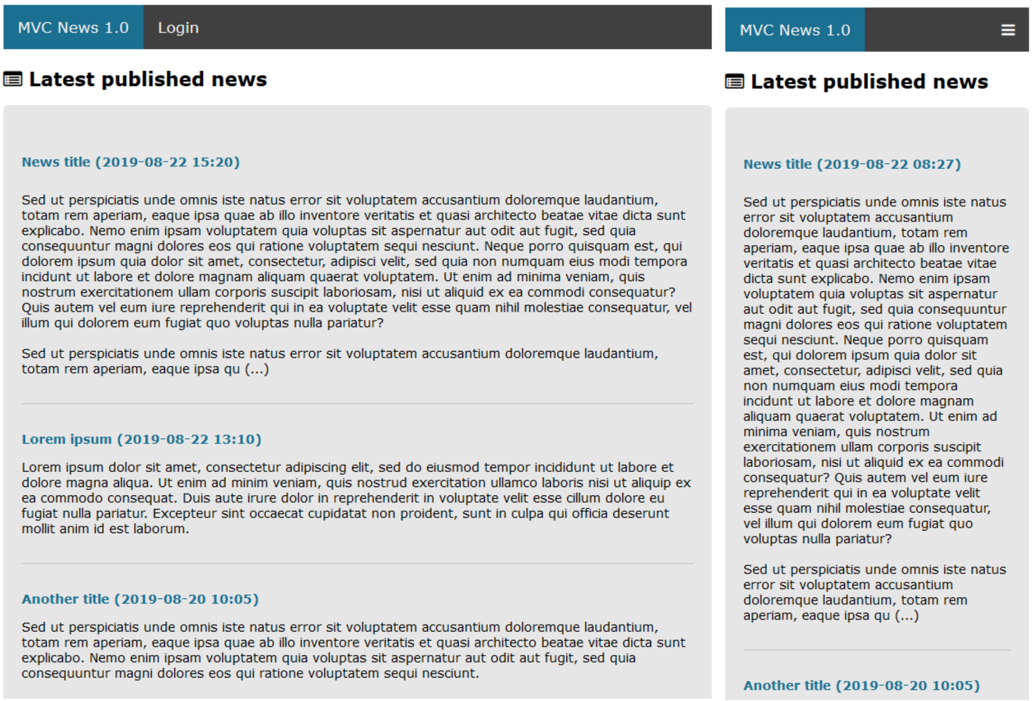

Context flow to create an entry in the MvcNews 1.0 application - MVC with C# ASP.NET Core
VIEW LAYER
CONTROLLER LAYER
MODEL LAYER
DATABASE LAYER
Administrator
GUI
NewsController
News entity
DBConnect
DB
Given that the admin has logged in and navigated to the create entry page :
Create and submit a news entry
Use entity to enable to post a news object
Enable initialization of a news object
Post news object properties via form
Use entity class
Enable news object instantiation
createNews(News object)
Store news entry
Store entry
Success
OK
Feedback message
Display feedback
Administrator
GUI
NewsController
News entity
DBConnect
DB

Image 4: *Sequence flow to illustrate the MVC pattern used for this application.*

7 Graphical user interface

In this section you can see some screenshots of how the application GUI looks like in desktop view and mobile device view.



MVC News 1.0 Login

Latest published news

News title (2019-08-22 15:20)

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Lorem ipsum (2019-08-22 13:10)

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Another title (2019-08-20 10:05)

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MVC News 1.0 ≡

Latest published news

News title (2019-08-22 08:27)

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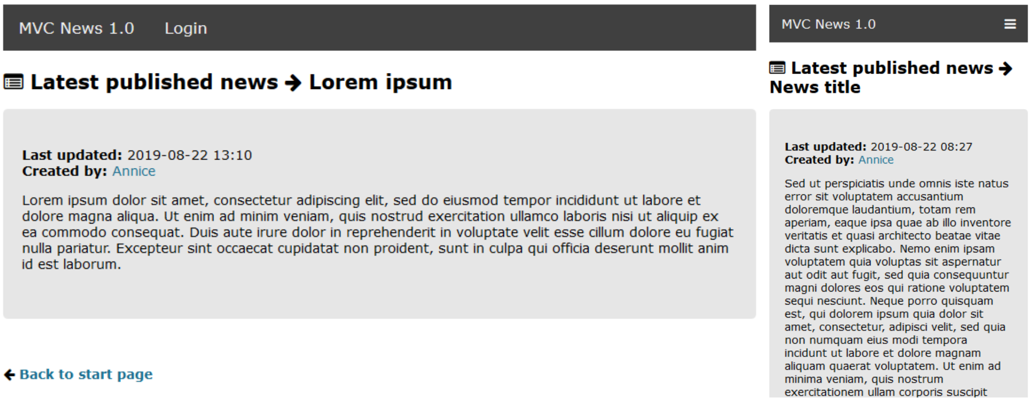
Another title (2019-08-20 10:05)

Image 5: *The public start page in desktop view vs. responsive view.*



MVC News 1.0 Login

Latest published news → Lorem ipsum

Last updated: 2019-08-22 13:10
Created by: Annice

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

← Back to start page

MVC News 1.0 ≡

Latest published news → News title

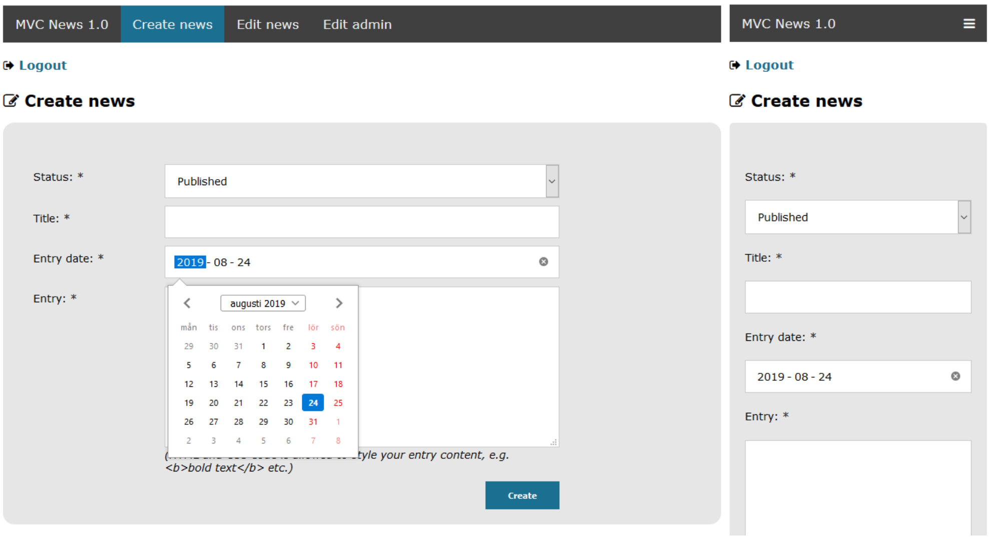
Last updated: 2019-08-22 08:27
Created by: Annice

Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium, totam rem aperiam, eaque ipsa quae ab illo inventore veritatis et quasi architecto beatae vitae dicta sunt explicabo. Nemo enim ipsam voluptatem quia voluptas sit aspernatur aut odit aut fugit, sed quia consequuntur magni dolores eos qui ratione voluptatem sequi nesciunt. Neque porro quisquam est, qui dolorem ipsum quia dolor sit amet, consectetur, adipisci velit, sed quia non numquam eius modi tempora incidunt ut labore et dolore magnam aliquam quaerat voluptatem. Ut enim ad minima veniam, quis nostrum exercitationem ullam corporis suscipit

Image 6: *The public entry detail page in desktop view vs. responsive view.*

Script: MvcNews 1.0 **Size (unzipped):** 952 kB

From: Annice.se **Created:** 2019



Create news

Status: * Published

Title: *

Entry date: * 2019 - 08 - 24

Entry: *

mån	tis	ons	tors	fre	lör	sön
29	30	31	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	1
2	3	4	5	6	7	8

(... tyle your entry content, e.g. <b>bold text</b> etc.)

Create news

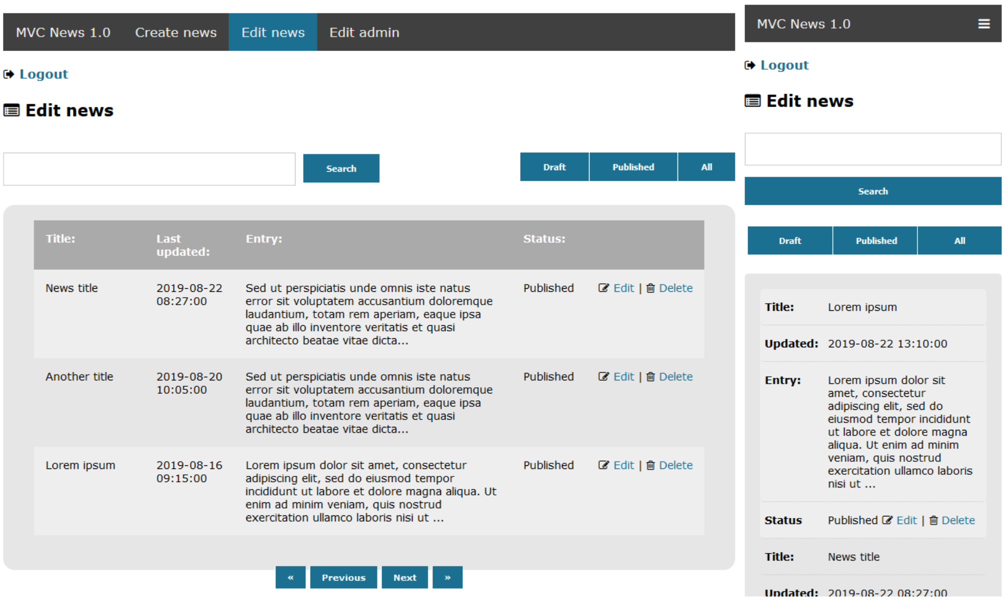
Status: * Published

Title: *

Entry date: * 2019 - 08 - 24

Entry: *

Image 7: *Admin page to create a new entry in desktop view vs. responsive view.*



Edit news

Title:	Last updated:	Entry:	Status:	
News title	2019-08-22 08:27:00	Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium, totam rem aperiam, eaque ipsa quae ab illo inventore veritatis et quasi architecto beatae vitae dicta...	Published	Edit | Delete
Another title	2019-08-20 10:05:00	Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium, totam rem aperiam, eaque ipsa quae ab illo inventore veritatis et quasi architecto beatae vitae dicta...	Published	Edit | Delete
Lorem ipsum	2019-08-16 09:15:00	Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut ...	Published	Edit | Delete

Edit news

Title:	Lorem ipsum
Updated:	2019-08-22 13:10:00
Entry:	Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut ...
Status	Published Edit | Delete
Title:	News title
Updated:	2019-08-22 08:27:00

Image 8: *Admin page to edit news in desktop view vs. responsive view.*

8 Installation guide

As this script was created in Visual Studio Code with SQL Server, I will go through the necessary installation steps accordingly.

Prerequisites:

- Install SQL Server Express
- Install .NET Core 2.2 (SDK)
- Install Visual Studio Code

Prepare the database and its tables:

1. Create a database in SQL Server.
2. Create a user login in SQL Server.
3. Launch SQL Server.
4. In the unzipped script folder, open the file “DBTables.sql” in SQL Server and change the following code line to match your own created database:
   ```
   USE YourDatabaseName
   GO
   ```
5. Execute the SQL file in SQL Server to create the application database tables.

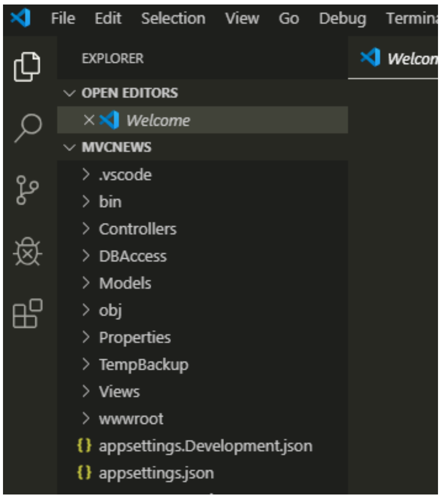
Install necessary Visual Studio Code extensions:

6. Launch Visual Studio Code.
7. In the main menu, navigate to *View* > *Extensions* (Ctrl+Shift+X).
8. Type “C#” in the extension search field and hit enter.
9. Click on the extension named “C#” and choose to install it.

Import the application to Visual Studio Code:

10. In the main menu bar, navigate to *File* > *Open Folder…* (Ctrl+K Ctrl+O).

11. Browse to the unzipped script folder and select to open the subfolder named “MvcNews”. The imported folder will then appear – including the application source code – in the explorer section as below:



Configure the imported application:

12. Once the application is imported into VSC, open the file “appSettings.json” in the explorer section.
13. In the file “appSettings.json”, change the database connection string to suit your own database credentials:

```
  "AllowedHosts": "*",
  "ConnectionStrings": {
    "MvcNewsContext": "Data Source=YourComputerName\\SQLEXPRESS;initial catalog=YourDatabaseName;user id=YourDatabaseLoginUser;password=YourDatabaseUserPassword;MultipleActiveResultSets=True"
  },
```

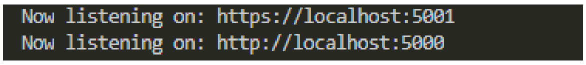
18. In the same file, you can also choose to change the number of entries to be displayed per page before pagination links are displayed:

```
  "EntriesPerPage": {
    "Items": "10"
  }
```

19. Save the project via main menu option *File > Save* (Ctrl+S).

Run the application:

20. In Visual Studio Code, open a terminal window by navigating to *View > Terminal* via the main menu (Swedish shortcut: Ctrl+ö).
21. In the open terminal window, type ***dotnet run*** and hit enter.
22. Once you see a confirmation message in the terminal saying that the application has started, you can navigate to the listening URL displayed in the terminal: https://localhost:5001



```
Now listening on: https://localhost:5001
Now listening on: http://localhost:5000
```

(If you want to stop the application from running, just click with the cursor in the terminal window and then press Ctrl+C.)

23. When you navigate to the above URL, make sure you also accept and install the necessary security certificate in the browser to finally be able to see and use the application.

Create the admin user:

24. When the application is up and running, you also have to create an admin user as a final step to be able to login and manage the news entries. This is a one time action, which can be done by navigating to the following application URL: https://localhost:5001/Admin/Create

9 Contact details

For general feedback related to this script, such as any discovered bugs etc., you can contact me via the following email address: info@annice.se