

Task

Required to build an MVC application using C# for code behind and targeting the latest (stable) version of .NET Core.

The application will require an MS SQL database¹ for storage of data generated by the application.

This application must perform the following tasks and built to best practices:

1. Allow the user to enter a variable number of numbers, of any integer value and in random order.
2. Sort these numbers in either ascending or descending order – the user should choose the order.
3. The ordered sequence should be inserted into the database along with the direction that the sequence was sorted in and the time taken to perform the sort.
4. Feedback to the user the result of the operation (i.e., whether the operation was successful, any validation issues with the submission or any errors that occurred).
5. Display the results of all sorts including the sort direction and time taken.
6. Allow the user to export all the sorts as JSON.
7. Please document all assumptions and decisions taken separately and submit with final codebase.

Assumptions:

- Database configuration is specified in 'appsettings.json' file.
- 'Numbers.cs' model includes Id, Number List, Sort Type (sort direction), Time Taken and Created time.
- Users are required to interact via HTML form with basic feedback.
- No built-in security features. user authentication, authorization, and data validation will be handled separately or as part of a larger security framework.
- No built-in error logging.
- No built-in performance optimizations such as caching or asynchronous processing.

Decisions:

- Error handling redirects to 'Index' page on exception.
- Success/Error messages are displayed for 5 seconds.
- Users are allowed to view and export JSON files individually or as a whole set.
- Export as JSON feature without user-defined save location.