

Library 4: Book repository

Data project: Install packages

Install the following packages in the Data project.

- Install Microsoft.Data.SqlClient package
- Install System.Configuration.ConfigurationManager package

Data project: Add application configuration file

Add an application configuration file both to the Presentation and Tests application projects to store the connection string.

Obtain connection string

- Go to the Server Explorer window
- Right-click Data Connections, and select Add Connection
- Ensure Microsoft SQL Server is selected as the data source
- Enter your database server name
 - To access this, go to SSMS, right-click the topmost object in the Object Explorer (which represents the database server), select Properties, and copy the name displayed
- Select the correct database from the dropdown (LibraryDatabase), and press OK
- Right-click the new connection, select Properties
- In the properties, copy the connection string displayed

Add configuration file

- Add a new application configuration item to the application projects, called App.config
- In the <configuration> element, add a <connectionStrings> element (with open/close tags)
- In the <connectionStrings> element, add an <add/> element (standalone, with no close tag)
- To the <add/> element, add the following three properties:
 - name: Arbitrary name used as a key to identify the current connection string from code
 - providerName: Microsoft.Data.SqlClient
 - connectionString: Insert the connection string obtained above
- You might also need to extend the connection string by inserting the following text at the end of the string, in order to prevent errors arising from invalid certificates:
 - TrustServerCertificate=True

Data project: Add book repository

- Create a class called BookRepository
- Add a connection string field
- Initialize the connection string in the constructor by accessing ConfigurationManager
- Implement the following public methods

Public query methods

- bool BookExists(long id)
- Book GetBook(long id)
- List<Book> GetAllBooks()
- List<Book> GetAvailableBooks()
- List<Book> GetBorrowedBooks()
- List<Book> GetBooksByTitle(string titleFilter)

Public command methods

- Book CreateBook(Book book)
- bool UpdateBook(Book book)
- bool DeleteBook(Book book)
- bool DeleteBook(long id)

Test project: Test book repository

- Test each of the public functionalities of the book repository
- Use breakpoints to step through the code, as well as Console.WriteLine calls, to test your code
- It might be helpful to add some records to the database table initially, for development purposes