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<u>Module – 2</u>

o Understanding Classes In Depth

Class: https://www.geeksforgeeks.org/c-sharp-class-and-object/#:~:text=A%20class%20is%20a%20user,derived%20classes%20and%20base%20classes.

Static Class: https://www.c-sharpcorner.com/UploadFile/74ce7b/static-class-in-C-Sharp/#:~:text=A%20static%20class%20in%20C%23,class%20that%20cannot%20be%20instantiated.&text=You%20can't%20create%20an%20object%20for%20the%20static%20class.

Sealed Class: https://www.c-sharpcorner.com/article/sealed-class-in-C-Sharp/

o Scope & Accessibility Modifiers

https://www.javatpoint.com/access-modifiers

o Namespace & .Net Library

Namespace: https://www.tutorialspoint.com/csharp/csharp_namespaces.htm

Introduction to .Net Core Libraries

1. Swashbuckle

A .net core library to build beautiful API documentation. Swashbuckle also enables you to explore and test API operations along with the Swagger UI. Some of the core features provided by this library are:

- Automatic generation of Swagger 2.0 and seamless integration with Swagger UI.
- As you describe your API types, you get reflection-based schema generation
- Swagger UI extensibility hooks

- Support for XML comments
- Support for authentication Implicit OAuth2 scheme and flow, APIKey, and basic authentication.
  GitHub: https://github.com/domaindrivendev/Swashbuckle.AspNetCore

License: MIT License

Stars: 3.5k

2. Polly

Polly is one of the lightweight dotnet libraries that enable .net core developers to handle faults like retrying, timeout, circuit break, bulkhead isolation, and thread-safe fallback.

Few important features of Polly are:

- Navigation through an unreliable network.
- Provides resilient strategies.
- Enables zero-dependency.
  GitHub: https://github.com/App-vNext/Polly

License: New BSD license

Stars: 8.2k

3. AutoMapper

As the name suggests, AutoMapper is a .net core library to manage object-to-object mapping. Developers are immensely relieved by using this library as they do not have to worry about the code while they are mapping values.

With AutoMapper, you can enable the following:

- EF6 Extensions
- IDataReader/Record Extensions
- Collection Extensions
- Microsoft DI Extensions
- Expression Mapping
- Enum Extensions
  GitHub: https://github.com/AutoMapper/AutoMapper

  License: MIT License

  Stars: 7.6k

4. SaasKit

A net core library for developing software-as-a-service applications. Using this library you can easily build multitenant apps using the OWIN interface.

The founder of this library, Ben Foster writes various informative blogs on how to use this SaasKit library, you might want to read here.

GitHub: https://github.com/saaskit/saaskit

License: MIT License

Stars: 886

5. Diagnostics.HealthChecks

A net core library to check the UI port and liveness of the Microsoft Health Checks. It also enables you to create exclusive APIs for the display of health checks.

The Diagnostics.HealthChecks library monitors health checks for:

- Applications
- Databases
- APIs
- Azure services
- Servers, etc.
  GitHub: https://github.com/Xabaril/AspNetCore.Diagnostics.HealthChecks

License: Apache-2.0 license

Stars: 1.8k

6. [MailKit](#)

MailKit is a dot net core library for client-server that is cross-platform.

Some of the core features of this library are:

- Simple Authentication and Security Layer (SASL) Authentication
- Proxy support for SOCKS4/4a, SOCKS, and HTTP
- SMTP client
- Pop3 client
- IMAP4 client
- Async API and API cancellation
  GitHub: https://github.com/jstedfast/MailKit

  License: MIT License

Stars: 3.6k

7. [CacheManager](#)

A .net core library for cache abstraction in C#. It intends to ease the life of developers while complex caching scenarios. CacheManager provides various advanced features and providers of cache.

GitHub: https://github.com/MichaCo/CacheManager

License: Apache-2.0 license

Stars: 1.9k

8. Dapper

Another .net core library for object mapping is the Dapper library. It supports high-performance ORM support for SQL Server, MySQL, SQLite, SqICE, and more. You can extend your IDBconnection interface using this NuGen library.

GitHub: https://github.com/StackExchange/Dapper

License: Apache-2.0 license

Stars: 12.9k

9. Ocelot

An open-source API gateway for running microservices, or service-oriented architecture

This net core library is useful for routing, request aggregation, web sockets, rate limiting, authentication, authorization, caching, load balancing, and configuration, etc.

GitHub: https://github.com/ThreeMammals/Ocelot

License: MIT license

Stars: 5.7k

10. NLog

A net core library that is used for logging, is open-source and cross-platform. NLog enables you to manage features and with excellent log routines. Essential features of the NLog library are:

- Easy configuration
- Template formation
- Extensible
- Structured logging
  GitHub: https://github.com/NLog/NLog

License: BSD- 3 clause license

Stars: 4.8k

11. [LiteDB](#)

LiteDB is a lightweight MongoDB like, NoSQL database for .NET core. It is an open-source library that enables anyone to download and use it freely.

Some amazing features of this library are:

- Thread-safe cross collection transaction.
- Reader: no lock. Writer: per collection lock.
- Query support for index and loader.
- FileStorage and system collection.
  GitHub: https://github.com/mbdavid/LiteDB

License: MIT license

Stars: 5.3k

12. Smidge

A dotnet core library that helps in app development framework, is lightweight and extensible.

Features:

- Minification, compression, and combination for JSS/CSS files.
- Client-side and server-side caching.
- Debugging and production configuration for each bundle.
- Fluent syntax and cache-busting.
  GitHub: https://github.com/Shazwazza/Smidge

  License: MIT license

Stars: 257

13. Bcrypt.net

Damien Miller created the Bcrypt .net core library for encryption in the .net framework. It is compatible with both .NET and .NET core frameworks.

GitHub: https://github.com/neoKushan/BCrypt.Net-Core

License: BSD-3 clause licence

Stars: 129

14. FluentEmail

A library that enables you to send emails flawlessly in both .NET and .NET core frameworks. It uses SendGrid, SMTP, MailGun, and other protocols.

GitHub: https://github.com/lukencode/FluentEmail

License: MIT license

Stars: 1.2k

15. UnitConversion

It is a library for unit conversion for both .net and dotnet core frameworks.

Inclusions:

- Time conversions
- Mass conversions
- Distance conversions
- Area conversions

- Volume conversions
  GitHub: https://github.com/atulmish/UnitConversion

License: MIT license

Stars: 130

16. FastReport

It is an open-source report generator library for the .NET core framework. FastReport enables you to add data from the following:

- XML
- CSV
- JSON
- MySQL
- MongoDB
- Oracle
- CouchBase
- Postgres
- SQLite
- RavenDB
  GitHub: https://github.com/FastReports/FastReport

License: MIT license

Stars: 1.2k

17. [Autocomplete](#)

This is a dot NET core library for auto-completing text-boxes and fields for any types of applications- desktop, web, or cloud apps. The minified js file is around 13KB and is dependent on jQuery.

GitHub: https://github.com/devbridge/jQuery-Autocomplete

License: MIT license

Stars: 3.3k

18. [AppMetrics](#)

AppMetrics is an open-source dotnet library that can record and report metrics in an application. The various types of metrics that it can provide are:

- Counting login users
- Requests rate
- Free memory
- Time to run database queries
- Support for Meters, gauges, timers, histograms, and counters, etc.

GitHub: https://github.com/AppMetrics/AppMetrics

License: Apache 2.0 license

Stars: 1.7k

19. SharpCompress

A compression library for dot net core framework that helps you compress and decompress your files. It also supports non-seekable streams for larger files.

Additional features:

- 7Zip writing
- RAR 5 decryption support
- Zip64
- Multi-volume zip support
  GitHub: https://github.com/adamhathcock/sharpcompress

License: MIT license

Stars: 1.3k

20. nopCommerce

The best .NET core library that provides shopping cart support. It comes with amazing functionality and is highly stable and secure. nopCommerce is compatible with Azure and web farms.

GitHub: https://github.com/nopSolutions/nopCommerce

License: General Public License V3

Stars: 5.4k

21. Cscore

Cscore is a .NET core library for audio utilizations like capturing, decoding, effects, encoding, and much more.

Useful Features:

- Optimized performance with CLI instructions.
- Easy to use for naive learners.
- Unit tests enable high code coverage.
- Give fast support on Stackoverflow and GitHub.
  GitHub: https://github.com/filoe/cscore

License:Microsoft Public License (Ms- PL)

Stars: 1.5k

22. NetOffice

A net core library for Microsoft office tools to automate and extend them. MS Excel, Outlook, Powerpoint, Access, Project, and Vision, all versions after 2000 get support from NetOffice in the .NET core framework.

Additional features:

- Add-in developments.
- Version independent development.
- Can use with .NET Framework 4 or higher.
- No registration required.
  GitHub: https://github.com/NetOfficeFw/NetOffice

  License: MIT license

Stars: 353

23. SignalR

The SignalR .NET core library enables you to add real-time web functionalities to your .NET core apps. It helps the developers push-add data from the server to their applications.

Some of the noteworthy features are:

- Automatic connection management.
- Simultaneous message-sending to all clients.
- Can handle increasing traffic by scaling.
- Allows you to send messages to a group of clients.
  GitHub:https://github.com/SignalR/SignalR

  License: Apache 2.0 license

Stars: 8.1k

    ○ Creating and adding ref. to assemblies

https://www.c-sharpcorner.com/UploadFile/akkiraju/creating-and-sharing-net-assemblies-for-a-net-application/

    ○ Collections

Array List: https://www.tutorialsteacher.com/csharp/csharp-arraylist

List: https://www.tutorialsteacher.com/csharp/csharp-list

Dictionary: https://www.tutorialsteacher.com/csharp/csharp-dictionary

Hash Table: https://www.tutorialsteacher.com/csharp/csharp-hashtable

Stack: https://www.tutorialsteacher.com/csharp/csharp-stack

Queue: https://www.tutorialsteacher.com/csharp/csharp-queue