

Objective:

Learn how to create web applications using ASP.NET Core. Learn about controllers, routes, http attributes. Learn about model validation in ASP.NET Core.

Theory:

- <https://docs.microsoft.com/en-us/aspnet/core/fundamentals/choose-aspnet-framework?view=aspnetcore-6.0>
- <https://docs.microsoft.com/en-us/aspnet/core/fundamentals/?view=aspnetcore-6.0&tabs=windows>
- <https://docs.microsoft.com/en-us/aspnet/core/fundamentals/middleware/?view=aspnetcore-6.0>
- <https://docs.microsoft.com/en-us/aspnet/core/fundamentals/configuration/?view=aspnetcore-6.0>
- <https://docs.microsoft.com/en-us/aspnet/core/fundamentals/routing?view=aspnetcore-6.0>
- <https://docs.microsoft.com/en-us/aspnet/core/web-api/?view=aspnetcore-6.0>
- <https://docs.microsoft.com/en-us/aspnet/core/mvc/models/validation?view=aspnetcore-6.0>
- <https://docs.microsoft.com/en-us/aspnet/core/mvc/models/model-binding?view=aspnetcore-6.0>

Task:

Deadline: 3-4 days

Requirements:

- Rework your console application into a web application. Include ASP.NET Core package and setup startup configuration.
- Create your first controller that will be responsible for brands of your clothing store.

- Create a RESTful API to create/update/get/delete brands. Don't forget about input model validation and using attributes for routing and http configuration.
- For now you can have all database operations within this controller.

Here we start our web application on top of previously created console app. We will start with a single controller and later expand this implementation.

Answer all of these questions to be prepared:

1. What is ASP.NET Core and ASP.NET? What are the benefits of using ASP.NET Core over ASP.NET?
2. What is the responsibility of Startup class in ASP.NET Core? What is the difference between Configure and ConfigureServices methods?
3. What is ASP.NET Core middleware? What is Http request pipeline?
4. How Configuration works in ASP.NET Core? What is stored in Appsettings.json file. What is Options pattern?
5. Please describe the role of the controllers in ASP.NET Core. What is the difference between Controller and ControllerBase classes? Why is it important to derive from ControllerBase class when writing a controller?
6. What is an endpoint in terms of web application?
7. What is routing, and how can you define routes in ASP.NET Core?
8. What are the differences between conventional and attribute-based routings? What is the preferred way to define routes in ASP.NET Core?

9. What is model binding in ASP.NET Core? What is the role of parameter-based attributes (FromBody, FromQuery, etc). When would you use each of them?
10. Please explain model validation process. What is ModelState class? What are validation attributes?