ASP.NET I

Course code: ASPNET_INTRO

In this training, I will explain the general basics of the .NET platform, we will show you how to host web applications on premises, in the Microsoft Azure cloud, on Windows and on Linux. It will also be about writing console applications and Windows Services and daemons on Linux.Then we look at the basics of the software architecture and the SOLID principles on which the `ASP.NET` Core platform is built. An important part of `ASP.NET` Core is the IoC / DI container, we will imagine the function of the built-in one and its replacement by another, as well as the basics of software architecture.In the next section, we'll look at ASP.NET MVC and improvements to the Razor template engine. We will show you how to create the basis of a web application and work with JavaScript, CSS preprocessors and CDNs.The last part is devoted to tag helpers, a new form of Razor engine extensibility, ie MVC and Razor Pages. Let's look at existing tag helpers and how to create new ones.The courses are designed for programmers who have a general knowledge of web technologies (HTML, CSS, JavaScript) and at least the basics of .NET (C #, Razor, Web Forms, MVC). The goal is to upgrade their knowledge and skills to the current level.At the same time, it is advisable to visit the follow-up course ASPNET_ADV - ASP.NET II

Requirements per participant

- Knowledge of C # programming at the GOC2125 course level
- Knowledge of Razor view engine (MVC, Web Pages)
- Functional subscription to Microsoft Azure, just a trial.
- Digital Ocean subscription

Teaching methods

- Expert explanation with practical examples, exercises on computers.

Studying materials

- Online presentation of the subject matter and exercises.

Course syllabus

Introduction

- Reasons for ideas, ideological news, changes against the .NET Framework
- Recommendations for existing applications and for the development of new ones
- Available runtime variants, LTS versus current version
- .NET Standard - what it is and how to use it
- NuGet packages, their role in .NET Core, how to create and publish them
- Basics of
- ASP.NET
- , concept of middleware, creation of own middleware
- Kestrel web server, working with static files

Operation and hosting of ASP.NET Core applications

- SCD, FDD, SDK deployment
- Installation and configuration of a server with Windows and IIS, basic diagnostics
- Hosting applications in Azure App Service using Azure SQL Database, deployment slots
- Why and how to write cross-platform applications
- Installation and configuration of a web server on Linux, deployment and operation of
- ASP.NET
- Core applications

.NET Core not just for the web: Console applications

- Why write them
- Command line parsing - NConsoler
- CommandLineUtils - framework for writing larger console applications

Windows Services and daemons
- Why use background processing in web applications
- Host a standard web application in your own Windows Service outside of IIS
- Background worker hosted in Windows Service or daemon
- Background worker hosted in a web process

A gentle introduction to software architecture
- Why we need a software architecture
- SOLID principles (SRP, OCP, LSP, ISP, DIP)
- IoC / DI as an implementation of these principles

IoC / DI in ASP.NET Core
- Built-in container
- Replacement of the built-in container with Autofac
- Advanced Autofac options

ASP.NET MVC Core and the new Razor
- Changes from previous MVC versions
- News in Razor (@inject, _ViewImports.cshtml, initialization)

Basic application skeleton in ASP.NET MVC Core
- Working with JavaScript and CSS, using Client Library Manager (LibMan)
- CSS and JavaScript preprocessors (SASS, LESS)
- Bundling and minification
- Use of CDN, fallback, SRI, CORS
- Concept of environment (Hosting Environment) and their use

Tag helpers in Razor
- Tag tag registration
- Tag helpers for creating links
- Tag helpers for caching
- Tag helpers for forms
- Create your own tag helpers

Cookies in ASP.NET
- Working with cookies in
- ASP.NET
- Core
- Security aspects and limitations
- Cookie Consent and GDPR
- Alternatives to cookies - Local Storage and Session Storage

.NET command line tools
- What are .NET Tools, global and local
- Use existing
- Creating your own

Logging in .NET
- Concept of creating logs
- Record filtering
- Log provided