

Course code: DOTNET_MAU1

The course is intended for developers on the .NET platform who want to get acquainted with the development of multiplatform applications for Windows, Android and iOS using the modern .NET Multi-platform App UI (.NET MAUI) framework. In the course, you will learn about the architecture of this framework, the basic elements of the user interface, application navigation, working with data and web services, an introduction to multitasking, notifications and other techniques common for mobile application development. Emphasis is placed on the implementation of the user interface, which will be shared between the individual platforms, but on which it will be indistinguishable from the native user interface and will be well controlled. Furthermore, emphasis is placed on the correct design of the application architecture, which will allow a high level of code sharing, easy expansion and testing of the application.

What we will teach you

You will learn about the new .NET MAUI framework and its use for application development for Windows, Android and iOS. You will learn to design and implement user interfaces for applications that you will share between platforms. You will try to implement a web services application using the MVVM design pattern. You will understand the application life cycle, multitasking options and notifications. You'll get an overview of API options on each platform, as well as their limitations. You will get acquainted with the possibilities of application distribution, both through public trade and internally in your company.

Who is the course for?

The course is aimed at .NET developers who want to learn how to develop cross-platform mobile applications that will run on Windows, Android and iOS platforms.

Required input knowledge

Knowledge of C # and Visual Studio environment (course will be conducted in C #). Basic knowledge of XAML.

Teaching methods

Expert explanation with practical examples, exercises on computers.

Studying materials

Printed presentations of the subject.

Course syllabus

Introduction of platform and tools for application development

- Introduction to the .NET MAUI framework and its architecture
- Introduction to individual target platforms Windows, Android and iOS and acquaintance with the possibilities of running .NET applications
- Introduction to the necessary tools for development, demonstration of project creation, deployment in the emulator, demonstration of debugging the application on the device

Design and implementation of the user interface

- Use of XAML language in .NET MAUI
- Introduction to available user interface elements
- Introduction to the positioning of controls
- Creating your own visual styles and storing them in resources
- Controls for displaying items and working with item templates
- Implementation of the application bar and commands in the application

Application architecture design enabling code sharing, use of other libraries and packages

- Introduction of the Model-View-ViewModel (MVVM) design model and its use in MAUI applications
- Application architecture design with emphasis on code sharing

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- Application testing unit options
- Platform API abstraction

Working with data in the user interface

- Introduction to data-binding in XAML
- Use controls to display data

Application navigation and application lifecycle

- Introduction to the application lifecycle
- Introduction and creation of basic types of pages intended for navigation

Working with web services

- Asynchronous processing operations
- Loading data from web service (REST JSON, SOAP, OData)
- Practical examples of working with HttpClient

Working with notifications

- Possibilities of using local notifications
- Introduction to the principle of remote notifications

Application publishing

- Preparing the application for publication
- Application publishing process

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