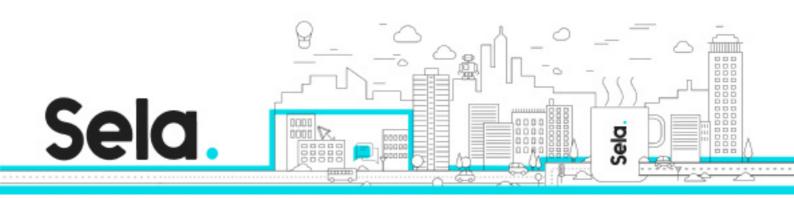# Developing Microsoft Azure and Web Services (.NET Core)

Developing Microsoft Azure and Web Services (.NET Core)

20487D - Version: 1

🕐 5 days Course

Description:

In this course, students will learn how to design and develop services that access local and remote data from various sources. Students will also learn how to develop and deploy services to hybrid environments, including on-premises servers and Microsoft Azure.

Intended audience:

Primary: .NET developers who want to learn how to develop services and deploy them to hybrid environments.
Secondary: .NET developers with Web application development experience who are exploring developing new applications or porting existing applications to Microsoft Azure.
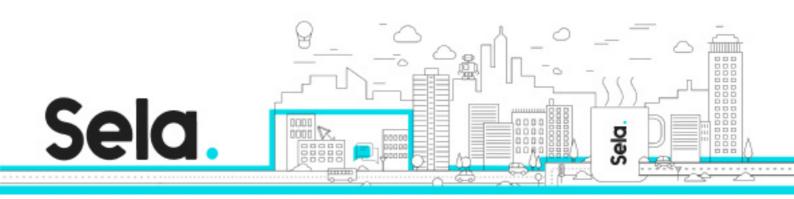
Prerequisites:

Experience with C# programming, and concepts such as lambda expressions, LINQ, and anonymous types
Understanding the concepts of n-tier applications
Experience with querying and manipulating data with ADO.NET

Objectives:

Describe the basic concepts of service development and data access strategies using the .NET platform.

Describe the Microsoft Azure cloud platform and its compute, data, and application hosting offerings.

Design and develop a data-centric application using Visual Studio 2017 and Entity Framework Core.

Design, implement, and consume HTTP services using ASP.NET Core.

Extend HTTP services using ASP.NET Core.

Host services on-premises and in Microsoft Azure.

Deploy services to both on-premises and cloud environments and manage the interface and policy for their services.

Choose a data storage solution, cache, distribute, and synchronize data.

Monitor, log, and troubleshoot services.

Describe claim-based identity concepts and standards, and implement authentication and authorization with Azure Active Directory.

Create scalable service applications.

Topics:

Overview of service and cloud technologies

- Key Components of Distributed Applications
- Data and Data Access Technologies
- Service Technologies
- Cloud Computing
- Manipulating Data

Querying and Manipulating Data Using Entity Framework

- ADO.NET Overview
- Creating an Entity Data Model
- Querying Data

Creating and Consuming ASP.NET Core Web APIs

- HTTP Services
- Creating an ASP.NET Core Web API
- Consuming ASP.NET Core Web APIs
- Handling HTTP Requests and Responses
- Automatically Generating HTTP Requests and Responses

Extending ASP.NET Core HTTP Services

- The ASP.NET Core Request Pipeline
- Customizing Controllers and Actions
- Injecting Dependencies into Controllers

Hosting Services On-Premises and in Azure

- Hosting Services on-premises
- Hosting Services in Azure App Service
- Packaging Services in Containers
- Implementing Serverless Services

Deploying and Managing Services

- Web Deployment with Visual Studio 2017
- Continuous Delivery with Visual Studio Team Services
- Deploying Applications to Staging and Production Environments
- Defining Service Interfaces with Azure API Management

Implementing Data Storage in Azure

- Choosing a Data Storage Mechanism
- Accessing Data in Azure Storage
- Working with Structured Data in Azure
- Geographically Distributing Data with Azure CDN
- Scaling with Out-of-Process Cache

Diagnostics and Monitoring

- Logging in ASP.NET Core
- Diagnostic Tools
- Application Insights

Securing services on-premises and in Microsoft Azure

- Explaining Security Terminology
- Securing Services with ASP.NET Core Identity
- Securing Services with Azure Active Directory

Scaling Services

- Introduction to Scalability
- Automatic Scaling
- Azure Application Gateway and Traffic Manager