

.NET Core Syllabus:

.NET Introduction

- What is .NET
- Types of Applications we can develop in .NET
- Primary .NET Implementations
- About MS.NET Framework
- Important Components of .NET Framework
- About .NET Implementations
- What is .NET Core
- Benefits of .NET core
- What is new in .NET Core
- .NET Core vs .NET Framework
- About Mono
- About Xamarin
- About Universal Windows Platform (UWP)
- First .NET Core Application.

Building .NET Core Applications

- Building Console Based application
 - CLI tools
 - Visual Studio Code
 - Visual Studio 2017
- Debugging and Testing Application.
- Developing .NET Core on Linux

Working with Class Libraries

- What is .NET Standard
- Building a .NET Class Library
- Multitarget Libraries
- Test Libraries on .NET Core

Packing and Deploying .NET Core Applications

- Packages & Metapackages

- Retargeting .NET Core apps and .NET Standard libraries
- Framework Dependent Deployment
- Self-Contained Deployment
- Visual Studio Packaging
- Creating a NuGet Package with Cross Platform Tools

Porting to .NET Core from .NET Framework

- What do you want to port
 - Technologies discontinued for .NET Core
 - Reflection Support in .NET Core
 - Namespaces Not / Partially Supported in .NET Core
 - NuGet Package Explorer
 - .NET Framework Compatibility Mode
 - .NET API Analyzer Portability Tool
 - Windows Compatibility Pack
 - Recommended Approach for Porting
 - Reverse Package Search
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Docker Syllabus:

Introduction to Containers and Docker

- Understanding VM's and Containers.
- What is Docker?
- Docker Benefits.
- Docker Architecture and Docker Taxonomy.

Working with Windows Images and Container

- Installing Docker for Windows
- Pulling Windows Images
 - Windows Server Core
 - Nano Server
- Starting and Stopping Containers
- Running a Single task
- Running an Interactive Windows Server Core container
- Creating Image from current state of Container
- Important Docker Commands
- Run a background IIS Web Server Container

Developing Docker Custom Images using .NET Core

- Docker Images for .NET Core.
- Executing .NET Core applications in Containers.
- Inspecting the Image Architecture
- Developing and Publishing .NET Core Applications
- Dockerfile and Building Docker Images
- Breaking down and understanding dockerfile indepth
- **Installing and using Docker on Ubuntu**

Multi-Stage Builds

- Multiple stages in dockerfile
- Hosting ASP.NET Applications in Docker

Docker Volume

- Purpose of using Volumes
- Access Data in Docker Containers
- Use Cases for Volumes
- Docker volume commands
- Creating Container with Volumes
- Sharing Volumes

Docker Compose

- Overview
- Docker compose features
- Building docker-compose.yml file
- Docker-compose command
- Working with multiple images in a single application
- Environment Variables and Configuration File

Networking & Port Forwarding

- Introduction to Container Networking
- Exposing Containers with Port Redirect

Docker Registry

- Creating a Docker Hub Account
- Pushing an Image to Docker Hub
- Pulling the Image from Docker Hub
- Create Local / Private Registry
- Pushing and Pulling Image from Registry
- Azure Container Registry
- Azure Container Instance