Faysal Aziz

.NET MAUI Training

Tailored for Retail POS Development

FA-0011 · 5-day

Software Development

Introduction

5-day training outline

Throughout this 5-day course, we will embark on a detailed exploration of .NET MAUI's capabilities, guided by industry experts and seasoned developers. You will learn the intricate art of building a comprehensive Retail Point of Sale (POS) system—a project that encapsulates the essence of modern retail operations. This hands-on project will not only solidify your understanding of .NET MAUI but also showcase its practical application in solving real-world challenges.

Our curriculum is meticulously crafted for your OJT in POS using the .NET MAUI framework. From the fundamentals of cross-platform development to the complexities of implementing secure and robust systems, each module is a step towards mastering this cutting-edge technology. We delve into the nuances of designing intuitive user interfaces, managing data with SQL Lite, ensuring top-notch security and authentication, and efficiently connecting to remote databases. Moreover, the course covers the pivotal aspects of deploying and maintaining your application in a production environment.

Learning outcomes

- Understanding the architecture of .NET MAUI for cross-platform development.
- Mastery of SQL Lite for local data storage in a retail POS context.
- Implementing robust security and authentication mechanisms.
- Designing and navigating common UI/UX interfaces across platforms.
- Evaluating and choosing between Native, Hybrid, or other app development approaches.
- Establishing and managing connections to remote databases.
- Implementing and managing background tasks in .NET MAUI.
- Navigating the app deployment and release process to production environments.

- Building a functional Simple Retail POS system with dynamic, interactive features.
- Implementing effective synchronization of sales data with server-side systems.

Prerequisites

Knowledge:

- Basic understanding of C# and .NET framework.
- Familiarity with SQL and database concepts.
- Basic knowledge of web services and APIs.

Hardware:

- A computer with at least 16GB RAM and a modern processor (i7 or better).
- Windows 10 or higher,
- MacOS for iOS development.
- Full administrative access
- Internet access

Software:

- Visual Studio 2022 or later with .NET MAUI installed.
- Android Studio for Android emulator.
- SQL Lite browser for database management.
- Access to sample .mp4 videos and images for UI design.

Training outline

1. Module 1: Introduction to .NET MAUI

- Overview of .NET MAUI and its role in cross-platform development.
- Setting up the development environment.

2. Module 2: Cross-Platform Development

- Understanding the cross-platform capabilities (Android, Windows, iOS).

- Developing a basic multi-platform application.

3. Module 3: SQL Lite for Local Data Storage

- Introduction to SQL Lite in .NET MAUI.
- Implementing local data storage for the retail POS.

4. Module 4: Security and Authentication

- Best practices in app security.
- Implementing login functionalities (Pin and Buttons).

5. Module 5: UI/UX Design Across Platforms

- Principles of common UI/UX design.
- Building a dynamic interface with buttons and grid layouts.
- Second screen implementation for multimedia display.

6. Module 6: Application Development Approaches

- Comparison: Native vs Hybrid vs Others.
- Choosing the right approach for the retail POS.

7. Module 7: Remote Database Connectivity

- Using Web APIs and Web Services in .NET MAUI.
- Syncing sales data to a remote server.

8. Module 8: Background Tasks

- Implementing background tasks in a retail POS.
- Ensuring smooth operation and data processing.

9. Module 9: App Deployment and Release

- Preparing the application for production.
- Deployment processes for different platforms.

10. Module 10: Building a Simple Retail POS System

- Designing the POS interface (Hot Items, Grid Display, Order and Tender Process).
- Implementing video and image display functionalities.
- Data synchronization and storage considerations.

11. Module 11: Conclusion and Project Assignment

- Review of key concepts.
- Assignment of a capstone project: Building a sample retail POS application.

Additional Topics

- Accessibility in app design.
- Responsive design for various screen sizes.
- Debugging and troubleshooting techniques.
- Understanding and implementing app analytics.
- Best practices for maintaining and updating applications post-deployment.

This course is more than just coding and technicalities. It's hand tailored for your specific requirement that sees beyond the code, understanding the user, the market, and the ever-evolving tech landscape. You will gain insights into choosing the right development approach, optimizing user experience, and ensuring your application thrives in the competitive digital world.

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