

## **Project Title: Stock Market Portfolio Tracker**

**Workshop Theme:** Full Stack Development using .NET Core API and React (TypeScript)

### **Objective:**

1. To build a web-based application that allows users to manage and monitor their stock investments.
2. The app will help users track their holdings, view market trends, and analyze portfolio performance over time.

### **Problem Statement:**

1. Investors often struggle to keep track of their stock purchases, current valuations, and overall portfolio performance.

This application aims to simplify that process by providing a centralized platform to:

1. Record stock purchases and sales
2. View real-time or simulated market prices
3. Analyze gains/losses and portfolio diversification

### **Core Features:**

1. Portfolio Management: Add/edit/delete stock entries with quantity, purchase price, and date.
2. Market Data Integration: Fetch current stock prices via external APIs (or use mock data).
3. Performance Dashboard: View total investment, current value, and profit/loss.
4. Charts & Visuals: Pie charts for sector allocation, line charts for stock performance.
5. Watchlist: Track stocks of interest without investing.

### **Technology Stack:**

1. Backend: ASP.NET Core Web API (.NET 8), Entity Framework Core, SQL Server
2. Frontend: React with TypeScript, Axios for API calls, Chart.js/Recharts for visualizations
3. Tools: Visual Studio 2022, VS Code, Postman, GitHub, GitHub Copilot

**Learning Outcomes:**

1. Building RESTful APIs for financial data
2. Integrating external APIs (e.g., stock price feeds)
3. Managing state and asynchronous data in React
4. Implementing CRUD operations and data visualization
5. Using GitHub Copilot for code suggestions and productivity