Technology and Programming Languages Report

1. Introduction

This project was developed to provide a robust software solution for managing data and processing operations within the organization. The system includes an intuitive user interface and a reliable connection to the database to ensure high accuracy and performance.

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2. Programming Language Used

C# (C Sharp)

The primary programming language used in this project is **C#**, chosen for the following reasons:

- Strong and reliable for developing Windows and web applications.

- Fully supported within the .NET Framework.

- Excellent integration with databases.

- Fast development and easy maintenance.

- Provides rich libraries for building graphical user interfaces (WinForms or WPF).

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3. Development Environment

Microsoft Visual Studio

The project was developed using **Microsoft Visual Studio** as the Integrated Development Environment (IDE), due to:

- Advanced tools for code editing and debugging.

- Excellent integration with SQL Server.

- Built-in support for package management through NuGet.

- Strong tools for designing professional user interfaces.

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4. Database Used

Microsoft SQL Server

The database management system used in the project is **Microsoft SQL Server**, selected for:

- High reliability and performance in enterprise-level applications.

- Support for advanced queries through T-SQL.

- Availability of powerful tools such as SQL Server Management Studio (SSMS).

- Easy integration with .NET and C# applications.

- Support for Stored Procedures to enhance performance and security.

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5. Technology Used for Data Connectivity

ADO.NET

The application connects to the database using **ADO.NET**, which includes:

- **SqlConnection** for handling database connections.

- **SqlCommand** for executing queries and stored procedures.

- **SqlDataAdapter / SqlDataReader** for retrieving data.

- **SqlParameter** objects to protect the system against SQL Injection attacks.