### PROJECT REPORT

#### ON

C# And XAML used\_Calculator
Submitted on partial fullfillment for the three years degree
course

Batchelor of Vocational (Information Technology)
Of
GAUHATI UNIVERSITY



Submitted by -

Name: Nayan sarma

Roll No: UA-211-200-0030

Registration No: 21069039

BVOC (IT) 6TH SEM (GROUP A)

Guided By -

Dr. Devajit Mahanta

H.O.D. of B.Voc. (IT)

Outro

DEPARTMENT OF B.VOC.(IT) 6<sup>TH</sup> (SEM GROUP A)
NALBARI COMMERCE COLLAGE
NALBARI, ASSAM- 781334

## **ACKNOWLEDGEMENT**

C# - The Engine of Intelligence: C# provided the robust logic and functionality that powers the calculator. Its versatility and clear syntax made complex calculations a breeze. With an object-oriented approach, C# laid the foundation for a scalable and maintainable codebase, ensuring the calculator's reliability.

XAML - Crafting User-Friendly Design: XAML brought the calculator's user interface to life with its declarative markup language. The collaboration between C# and XAML seamlessly blended logic with design. XAML's support for data binding and styling added a touch of elegance to the interface, creating a user-friendly and visually appealing experience.

WPF - Dynamic and Responsive Interface: WPF played a crucial role in making the interface dynamic and responsive. Its features, including data binding and animation support, contributed to an engaging user experience. The seamless integration with XAML allowed for the creation of interactive UI elements, enhancing the overall usability of the calculator.

.NET 5.0 - Modernizing Development: Embracing .NET 5.0 was a decision to embrace modern development practices. The enhancements and cross-platform capabilities of .NET 5.0 elevated the project to contemporary standards. This not only ensured high performance but also positioned the calculator at the forefront of modern software development.

Gratitude to the Community: I express my gratitude to the .NET community for its continuous support. The collaborative spirit and shared knowledge within the community were instrumental in overcoming challenges and pushing the boundaries of the project. The vibrant .NET ecosystem significantly contributed to the success of this endeavor.

## About Visual studio

Visual Studio is a powerful integrated development environment (IDE) created by Microsoft. It's widely used by software developers for various programming languages, including C#, C++, and Python. This IDE offers a comprehensive set of tools and features to streamline the software development process.

One of the standout features of Visual Studio is its rich code editor, which provides code completion, debugging, and real-time syntax checking, making it easier to write clean and error-free code. The integrated debugger is robust, helping developers identify and fix issues quickly.

Visual Studio supports a wide range of project types, from desktop applications to web and mobile development. It has excellent integration with Azure, Microsoft's cloud platform, making it a preferred choice for cloud-based application development.

Extensions and add-ons, available through the Visual Studio Marketplace, enhance the IDE's functionality. Developers can customize their development environment by adding extensions that cater to their specific needs.

Version control is made easy with built-in Git support, enabling collaborative coding and code version management. Visual Studio also includes excellent tools for unit testing and continuous integration, ensuring software quality.

The Visual Studio ecosystem extends to Visual Studio Code, a lightweight code editor, and Visual Studio Online, which offers cloud-based development collaboration and code repositories. Overall, Visual Studio is a comprehensive software development environment that caters to both individual and team needs. It simplifies and enhances the software development process with its feature-rich environment and extensive integration capabilities

# Contents

1. Introduction	08
- Background of the Project	09
- Problem Statement	10
- Objectives	11
- Scope of the Project	12
- Significance of the Project	13
- Methodology	14
	14
2. Literature Review	15
- Overview of Calculator Applications	16
- Related Technologies (C#, Windows Application)	17-18
- Previous Work and Research	19
and researen	
3. System Design	20
- System Architecture	21 - 22
- Use Case Diagrams	22 - 23
- Class Diagrams	
- User Interface Design	26 - 27
	20 - 27
1. Implementation	28 - 29
- Programming Languages and Tools	30 - 31
- Algorithms and Data Structures	32
- Code Structure	33 - 34
- Key Features and Functionalities	35 - 36
- Challenges Faced during Implementation	37 <u>-</u> 38
	37 30
. Testing and Quality Assurance	30 - 40
- Testing Strategy	41 _42
- Bug Tracking and Resolution	12 42
- Performance Testing	15 16
, vo6	43 - 40

6. Appendices	47 40
- Code Samples	4/ - 48
- Code Samples	49 - 50
- Screenshots and Diagrams	51 - 52