# INTRODUCTION

This task is to create a chat application in Xmal using the application writer Windows Presentation Foundation (WPF) apps on the Cor.NET programming model. The Xaml generated UI simplifies creating a native UI and separating the UI definition from the run-time logic using code-behind files bound to the tags through partial class definitions. xmal directly represents the instantiation of objects in a particular set of support types defined in assemblies and this is the direct link to the support type system and works where separate parties can work in the user interface and application logic

This program consists of sections for the basic shapes of the xmal syntax. The element contains roots for the attributes xmlns and x:xmlns. These attributes refer to the xmal processor. The namespace contains the type definitions. The instances that we will refer to as tags. WPF from the SDK, the XMAL namespace for the XMAL language contains several syntaxes that we will use frequently in our XMAL.

Assemblies designated for building the application or outside WPF's kernel PresentationCore, PresentationFramework and WindowsBase The custom mapping assembly is defined and then the types of assembly are indicated in our XMAL

The application consists of coding the XML code behind the project and uses a CLR language such as Microsoft Visual Basic or C#

The basic mechanism at the application level is to add behavior to an object element using an existing event of the element class and write a specific handler for this event The event is called at runtime The name of the event and the name of the handler are specified The code that executes the handler is specified in the hidden code

## ****Prerequisites****

1. Visual basic 2022

2. C# and Object-Oriented Programming concepts

3. XAML language and its syntaxes

* **Technology used**

1. .Net WPF
2. XMAL

**1.chapter**

1.1. .**NET**

it is a platform for developing and creating windows application in the .Net framework version ,supported by Microsoft ,and NET application are created.

Form source code and project file using .NET CLI or an integrated development environment (IDE)such Visual Studio

## 1.2. C #

Is a general-purpose, high-level multi-paradigm programming language. C# encompasses static typing, strong typing, lexically scoped, imperative, declarative, functional, generic, object-oriented (class-based), and component-oriented programming disciplines.

The C# programming language was designed by Anders Hejlsberg from Microsoft was later approved as an international standard by Ecma (ECMA-334) and ISO/IEC (ISO/IEC 23270) . Microsoft introduced C# along with .NET Framework and Visual Studio, both of which were closed-source. At the time, Microsoft had no open-source products. Four years later, a free and open-source project called Mono began, providing a cross-platform compiler and runtime environment for the C# programming language. A decade later, Microsoft released Visual Studio Code (code editor), Roslyn (compiler), and the unified .NET platform (software framework), all of which support C# and are free, open-source, and cross-platform. Mono also joined Microsoft but was not merged into .NET.

As of November 2022, the most recent stable version of the language is C# 11.0, which was released in 2022 in .NET 7.0

It is a simple, general-purpose, object-oriented programming language. The language and its implementations must be available in support of software engineering principles such as strong type checking, array bounds checking, attempt detection, and the use of uninitialized variables.

The language is intended for use in developing software components suitable for deployment in distributed environments and is a very important portability for source code programmers.

C# is designed to be suitable for writing applications for all hosted and embedded systems

1.2.1**. Notable features of C Sharp**

* Portability: By design, C# is a programming language that directly reflects the underlying structure (CLI) and corresponds to most of its core types with the value types implemented by the CLI framework.
* Feature: C# supports classes with properties. Properties can be simple accessory functions with field support for (getter) and (setter) functions.
* Namespace: The c# namespace provides the same level, similar rules, and features found in the package. Namespaces can be imported using the "Using" syntax.
* Memory Access: In CSharp, memory address pointers can only be used within blocks that are specifically marked as unsafe. Unsafe code needs the appropriate permissions to run. Managed memory cannot be freed explicitly. All garbage addresses the problem of memory leaks by freeing the programmer from responsibility for freeing memory that is no longer needed in most cases.
* Exception A range of standard exceptions are available to programmers.

methods in standard libraries regularly throw system exceptions in some circumstances and the range of exceptions thrown is normally documented. custom exception classes can be defined for classes allowing handling to be put in place for particular circumstances as needed. Checked exceptions are not present in C# (in contrast to Java). This has been a conscious decision based on the issues of scalability and versionability.

1.3. **C language**

A computer programming language created by Debbie Ritchie. It is widely used by design for its capabilities on target CPUs. It has found widespread use in operating systems, device drivers, and protocol stacks. The C language is commonly used in computer architectures.

A successor to the C/B programming language was originally developed by Bell Labs by Ritchie to create utilities that run on Unix. It has been implemented to re-implement the Unix kernel execution kernel. It is one of the most widely used programming languages with C compilers. It is a language that supports structured programming with variable scope. Lexicographical and iterative, and with a system of static types, is designed to provide low-level access to memory and constructs for a language that effectively delineates machine instructions. The language is designed to encourage cross-platform programming. A standards-compliant C program written with portability in mind can Compilation for a variety of computer platforms and operating systems with variants in the source code

1.4. **C++ language**

It is a level general-purpose programming language as an extension of the C programming language or a language that has greatly expanded the language over time, and modern C++ now has object-oriented, generic, and functional features in addition to facilities for memory manipulation in addition to facilities for low-level memory manipulation and C++ was designed + With systems programming, embedded software with limited resources, large systems, useful for all contexts and the other, and where the main strength is in software infrastructure, applications with limited resources, desktop applications, video games, and servers (such as electronic commerce, web searches, or databases). Data (the current 20 C++ standard replaces these new features and the standard library is expanded. It is a flexible language similar to C that also provides high-level features for organizing programs.

It is implemented in the Microsoft compiler and the organization relies on the C++ reference guide described by Margaret C++ and Bjarne Stroustrup and on the international standard (ISO / IEC FDIS) C++ ANSI /ISO

1.5. **Xmal**

An extensible language that is a declarative language XAML can initialize objects and set properties of objects using a language structure that shows hierarchical relationships between multiple objects and a support type convention that supports extending types You can create visual widgets in XMAL markup that can respond to events and manipulate objects that support a language XMAL file exchange between different tools in the development process, between design tools, an interactive development environment (IDE), or between core developers and translation developers. Using XAML as the exchange format, designer and developer roles can be kept separate or grouped together, and designers and developers can iterate through application production and XMAL has a basic syntax that builds on XML By definition XMAL must be both valid XMAL contains syntax concepts that are assigned a different meaning and more

1.5.1. **XAML And Visual Studio**

An XAML text editor or the more graphically oriented XAML design interface IDE encourages correct syntax generation by automatically providing tooltips and showing widget librariesin a ToolBOX window.

1.5.2. **XAML namespaces**

a namespace is an organizing concept that determines how identifiers for programming entities are interpreted how XAML applies and extends the XML language namespace concepts:

* XAML uses the reserved XML attribute xmlns for namespace declarations
* XAML uses prefixes in declarations to declare non-default namespaces
* Namespace definitions inherit in a XAML file or construct, from parent element to child element
* Attributes of an element inherit the element's namespaces. It's fairly uncommon to see prefixes on XAML attributes.

1.6**.HTML**

HTML (Hyper Text Markup Language) is the most basic building block of the Web. It defines the meaning and structure of web content. Other technologies besides HTML are generally used to describe a web page's appearance/presentation (CSS) or functionality/behavior (JavaScript).

"Hypertext" refers to links that connect web pages to one another, either within a single website or between websites. Links are a fundamental aspect of the Web. By uploading content to the Internet and linking it to pages created by other people, you become an active participant in the World Wide Web.

HTML uses "markup" to annotate text, images, and other content for display in a Web browser.

An HTML element is set off from other text in a document by "tags", which consist of the element name surrounded by "<" and ">". The name of an element inside a tag is case insensitive. That is, it can be written in uppercase, lowercase

1.7.**CSS**

Cascading Style Sheets, fondly referred to as CSS, is a simply designed language intended to simplify the process of making web pages presentable. CSS allows you to apply styles to web pages. More importantly, CSS enables you to do this independent of the HTML that makes up each web page. It describes how a webpage should look: it prescribes colors, fonts, spacing, and much more. In short, you can make your website look however you want. CSS lets developers and designers define how it behaves, including how elements are positioned in the browser.

While html uses tags, css uses rulesets. CSS is easy to learn and understand, but it provides powerful control over the presentation of an HTML document.

CSS is written in HTML pages. We only change the style. It is considered an encrypted technology, which means that search engines will not have difficulties in reading its content.

# 2.CHAPTER

2.1