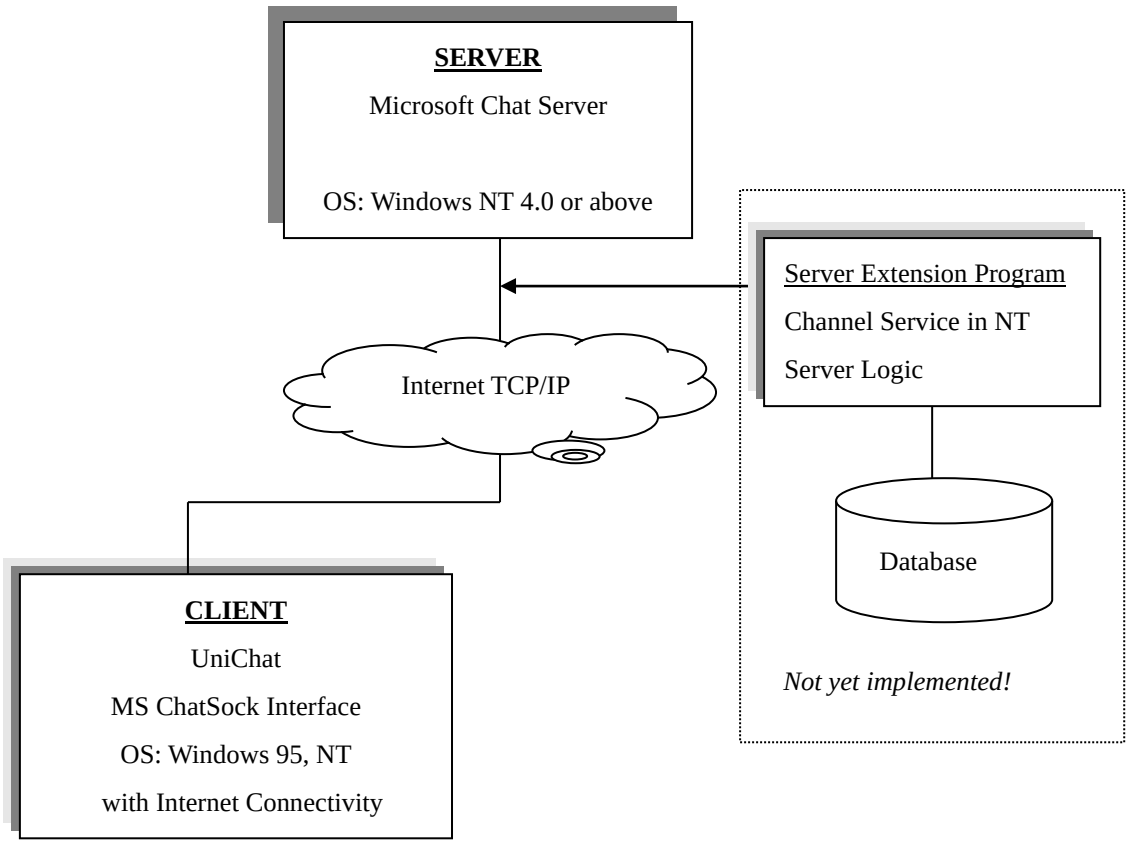
The Current Architecture of the UniChat™ System

Microsoft Chat Server and MIC protocol

UniChat is a Client-Server system working on the internet (TCP/IP) network. We are using Microsoft's Chat Server that has been developed to replace any older IRC (Internet Relay Chat) servers on the UNIX machines. Microsoft has extended IRC protocol for the internet chat system to their MIC (Microsoft Internet Chat) protocol. Microsoft Chat Server has really good performance over any other internet chat servers available now and it also supports binary data transmission and server extension programmability. So, we can develop somewhat interactive multiplayer online games like chess or card games using this chat server. Microsoft has two kinds of their own chat client programs called **Microsoft Chat** and **V-Chat**, and they all use this chat server.



UniChat Client System

UniChat client program deals with the internet communication and the game interface. It has been developed using Microsoft Visual C++/MFC.

Networking Part

The network communication for internet chat was implemented using Microsoft **ChatSock SDK**. MS

ChatSock SDK is a communication programming library that provides the data communication with the Chat Server using IRC or MIC protocol. It is a higher level library than WinSock layer that most of network programs are using. It is based on the current programming architecture of COM (Component Object Model). Because ChatSock needs Win32 multithreading capability, it does not support 16 bit OS like Windows 3.1. We have made some C++ interface classes to handle these ChatSock implementation objects.

UniChat Client Program
C++ classes for socket and channel interfaces
MS ChatSock SDK (chatsock.dll)
WinSock
TCP/IP

Game Interface

We call it the Game Engine that supports the animation graphics and sound effects in a programming library format. Every game development company has their own game engine that supports 2D or 3D graphics. Our own game engine is very compact because it doesn't need any other components like MS DirectX be installed. It supports modern Quarter-View graphics with tiled bitmap background and animation scripting language.

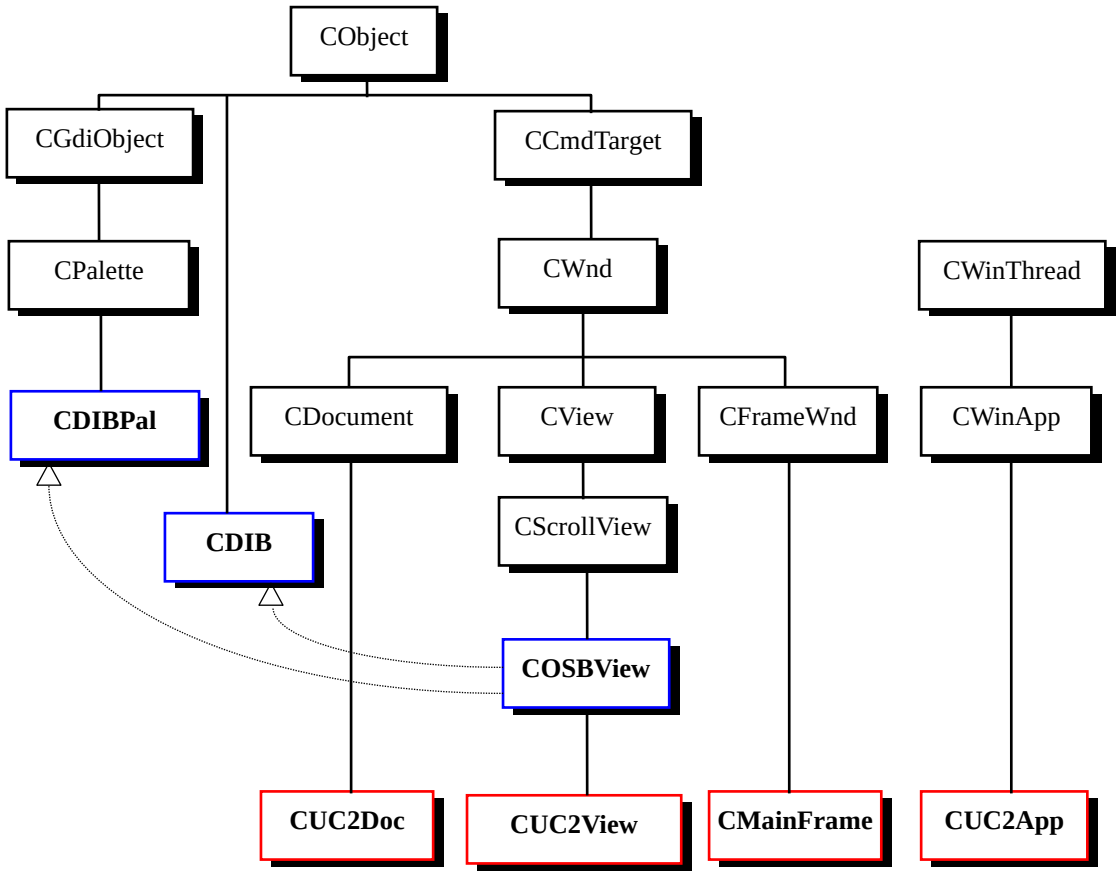
UniChat Client Program (UC2.exe) Map Editor (MapEd.exe)
MFC Extension classes (UC2Ani.dll)
Resource Scripting
Quarter-View coordinate system with tiled bitmap images
Sprite Animation
Bitmap and palette processing using Double Buffering
Win32 GDI (Graphics Device Interface)

Components	Related Technologies
Windows Program	❍ Visual C++ / MFC 5.0 wrapping Win32 API ❍ Windows 95 Common Controls (COMCTL32.DLL: List View, ...) ❍ Window Frames (CDialogBar, CSplitterWnd, ...) ❍ Methodology: Object-Oriented Modeling (Rumbaugh's OMT, Booch's OOD)
Multi-player	❍ Client/Server Model

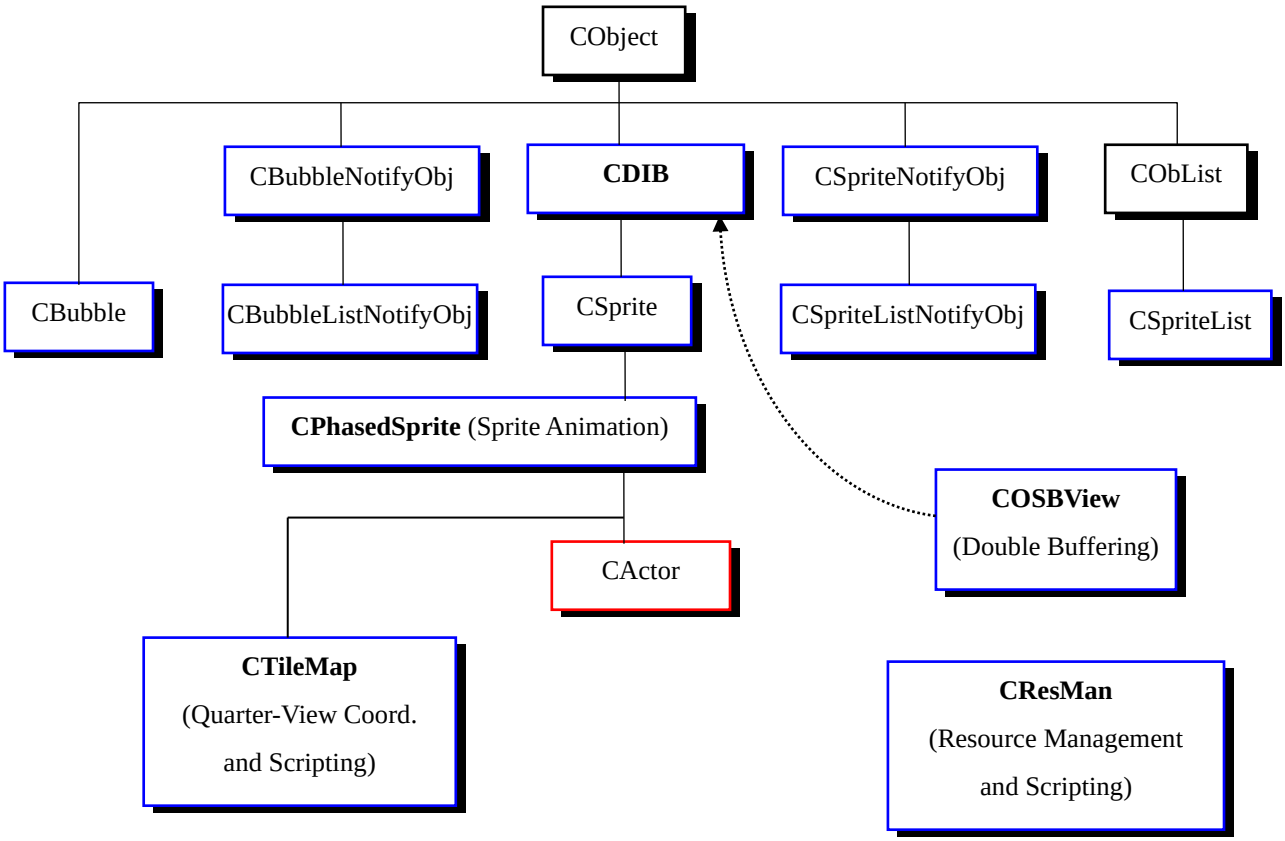
supporting network	❍ MS Chat Server, ChatSock SDK (MIC protocol) ❍ File download using IbindStatusCallback interface ❍ Enumerated Command Set Definitions ❍ Command Parser
Windows GDI extension	❍ 256-color Bitmap, Palette Manager (Identity Palette) ❍ Double Buffering by Off-Screen Buffered View (CreateDIBSection) ❍ Phased Sprite Animation
Background Graphics	❍ Quarter-View Map Model (Birds' Eye View) ❍ Tile Map for optimized size ❍ Script Encoder/Decoder ❍ Bitmap Image File Merger utility
Character Animation	❍ Object-Oriented Model (Attributes and Behavior Definition) ❍ Mode Animation on the Event-Driven Architecture (considering latency problems) ❍ Mutual Interactions using messages

Object Hierarchies

Client Windows Classes Hierarchy based on the MFC Doc/View Architecture



Windows Animation Classes Hierarchy



The Specifications

UniChat

- ☐ Internet Chatting capability with animated characters and dynamic balloons.
- ☐ 3D-like Quarter-View Graphics, 56 background scenes and 18 characters
- ☐ Wave sound effects and MIDI background music
- ■ Compact Size for the distribution (only 1.2 MB for the setup file)
- ☐ Quarter-View Map Editor
- ☐ Microsoft MIC protocol

The New Product to be developed

- ☐ Most of the specs what UniChat has. *All the programming codes will be redesigned and reimplemented*
- ☐ New graphic and sound resources with different scenario
- ☐ Quarter-View Map Editor with enhanced user interfaces and file management capabilities
- ■ QVML, a new kind of Standardized language for the document like HTML or VRML
- ■ Internet Browser component (stand-alone and ActiveX control) for QVML and real-time chatting
- ☐ First-time Installation File will be under 500 KB
- ☐ Additional graphics and sound data are delivered from the server to the client on demand
- ■ Permanent membership data management facility – implemented by Server Database
- ■ Message service between members (restrained version of internet E-mail)
- ☐ Bulletin board service for each chat room
- ☐ News ticker and advertising supported

Goal of the Development

① A new kind internet browser to supplement the already existing web browsers like Internet Explorer

② Tool for the real-time virtual space and community on the internet

③ Compact size for installation and automatic download by the browser

④ Integrity with the existing web browsers – Stand-alone and ActiveX control

⑤ High quality of graphics in an optimized Quarter-View format