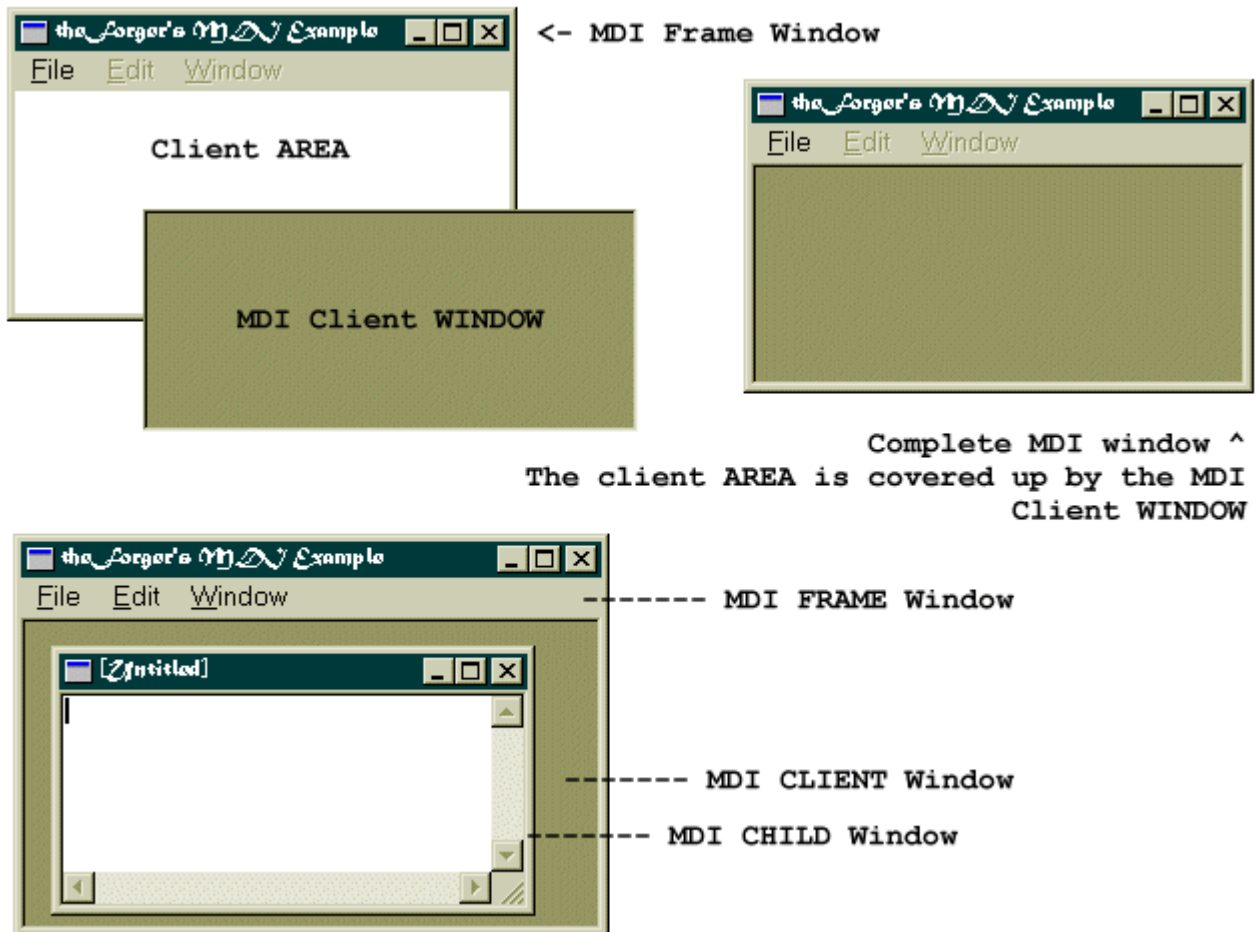


# Multiple Document Interface (MDI)

Fereastra principala se numeste Frame si este singura fereastra daca aplicatia Windows este o aplicatie SDI (Single Document Interface) Daca aplicatia Windows este o aplicatie MDI atunci va exista si o fereastra suplimentara ,MDI Client Window, care este un copil al fwhich is a child of your Frame window. Unlike the Client Area it is a comrestre Frame. Mesajele pentru aceasta fereastra vor fi prelucrate prin intermediul unei clase predefinite "MDICLIENT".

Cind aplicatia doreste sa afiseze informatie atunci va transmite un mesaj catre fereastra MDI Client pentru ca aceasta sa creeze o noua fereastra in care informatia va fi afisata. Aceasta fereastra va fi copil al ferestrei MDI Client.

Trebuie scrise mai multe proceduri Windows: una pentru Frame si cite una pentru fiecare fereastra MDI copil.



Inainte de a crea fereastra MDI proprie trebuie schimbata bucla de tratare a mesajelor (se va inlocui procedura DefWindowProc() cu procedura DefFrameProc()):

```
default:
    return DefFrameProc(hwnd, g_hMDIClient, msg, wParam, lParam);
```

Urmatorul pas este acela de a crea fereastra MDI Client:

```
CLIENTCREATESTRUCT ccs;

ccs.hWindowMenu = GetSubMenu(GetMenu(hwnd), 2);
ccs.idFirstChild = ID_MDI_FIRSTCHILD;

g_hMDIClient = CreateWindowEx(WS_EX_CLIENTEDGE, "mdiclient", NULL,
    WS_CHILD | WS_CLIPCHILDREN | WS_VSCROLL | WS_HSCROLL |
    WS_VISIBLE,
    CW_USEDEFAULT, CW_USEDEFAULT, CW_USEDEFAULT, CW_USEDEFAULT,
    hwnd, (HMENU)IDC_MAIN_MDI, GetModuleHandle(NULL), LPVOID)&ccs);
```

Procedua Windows va fi modificata astfel:

```
case WM_COMMAND:
    switch(LOWORD(wParam))
    {
        case ID_FILE_EXIT:
            PostMessage(hwnd, WM_CLOSE, 0, 0);
            break;

        // ... handle other regular IDs ...

        // Handle MDI Window commands
        default:
        {
            if(LOWORD(wParam) >= ID_MDI_FIRSTCHILD)
            {
                DefFrameProc(hwnd, g_hMDIClient, msg, wParam, lParam);
            }
            else
            {
                HWND hChild = (HWND)SendMessage(g_hMDIClient,
WM_MDIGETACTIVE, 0, 0);
                if(hChild)
                {
                    SendMessage(hChild, WM_COMMAND, wParam,
lParam);
                }
            }
        }
    }
    break;
```

De asemenea bucla de mesaje va fi modificata dupa cum urmeaza:

```

while(GetMessage(&Msg, NULL, 0, 0))
{
    if (!TranslateMDISysAccel(g_hMDIClient, &Msg))
    {
        TranslateMessage(&Msg);
        DispatchMessage(&Msg);
    }
}

```

Crearea ferestrelor MDI copil se poate realiza astfel:

```

BOOL SetupMDIChildWindowClass(HINSTANCE hInstance)
{
    WNDCLASSEX wc;

    wc.cbSize          = sizeof(WNDCLASSEX);
    wc.style           = CS_HREDRAW | CS_VREDRAW;
    wc.lpfnWndProc     = MDIChildWndProc;
    wc.cbClsExtra      = 0;
    wc.cbWndExtra      = 0;
    wc.hInstance       = hInstance;
    wc.hIcon           = LoadIcon(NULL, IDI_APPLICATION);
    wc.hCursor         = LoadCursor(NULL, IDC_ARROW);
    wc.hbrBackground   = (HBRUSH)(COLOR_3DFACE+1);
    wc.lpszMenuName    = NULL;
    wc.lpszClassName   = g_szChildClassName;
    wc.hIconSm         = LoadIcon(NULL, IDI_APPLICATION);

    if(!RegisterClassEx(&wc))
    {
        MessageBox(0, "Could Not Register Child Window", "Oh Oh...",
            MB_ICONEXCLAMATION | MB_OK);
        return FALSE;
    }
    else
        return TRUE;
}

```

Mesajele implicite pentru fereastra MDI copil sunt tratate de DefMDIChildProc() in loc de DefWindowProc().

Frestrele MDI copil nu sunt create in mod direct ci prin intermediul mesajului WM\_MDICREATE transmis catre fereastra client.

```

HWND CreateNewMDIChild(HWND hMDIClient)
{
    MDICREATESTRUCT mcs;
    HWND hChild;

    mcs.szTitle = "[Untitled]";
    mcs.szClass = g_szChildClassName;
    mcs.hOwner = GetModuleHandle(NULL);
    mcs.x = mcs.cx = CW_USEDEFAULT;
    mcs.y = mcs.cy = CW_USEDEFAULT;
    mcs.style = MDIS_ALLCHILDSTYLES;
}

```

```
    hChild = (HWND)SendMessage(hMDIClient, WM_MDICREATE, 0,
(LONG)&mcs);
    if(!hChild)
    {
        MessageBox(hMDIClient, "MDI Child creation failed.", "Oh
Oh...",
                MB_ICONEXCLAMATION | MB_OK);
    }
    return hChild;
}
```