**Application Programs using Windows API**

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In the previous session, we learned about one of the two ways to create the program that automatically types sentences in notepad. As mentioned, The SendInput() Function is used as an alternative to SendMessage() Function we used previously. The only issue with this alternate method is that it is mildly complicated and may not print some characters properly. Let us discuss this further. The Window Finding code and the message to print is kept as is.

The code for this program is given below:

SetForegroundWindow(editWnd);

INT len = lstrlen(message);

INPUT ip, relIp;

ZeroMemory(&ip, sizeof(ip));

ZeroMemory(&relIp, sizeof(relIp));

ip.type = relIp.type = INPUT\_KEYBOARD;

relIp.ki.dwFlags = KEYEVENTF\_KEYUP;

for (INT j = 0; j < (len + 1); j++) {

ip.ki.wVk = relIp.ki.wVk = VkKeyScan(message[j]);

SendInput(1, &ip, sizeof(INPUT));

Sleep(50);

SendInput(1, &relIp, sizeof(INPUT));

Sleep(150);

}

SetForegroundWindow() can be used in a single-call or inside the for loop (multi-call) depending on whether the user will change the focus of the window. Here, a single-call may suffice. Multi-calls will prevent the user from changing focus from the notepad window. One of the INPUT structures is set to always provide a key-down input and the other will always provide a key-up input (KEYEVENTF\_KEYUP). VkKeyScan() is just a accessory function provided in WinAPI to convert a character to a virtual-key code WORD value. However, VkKeyScan() is not very accurate as virtual-key codes do not support a straightforward translation. Some characters can’t be translated to that exact character, so most of the times the output will differ. Therefore, The Output Is: “hello1 how are you/ hope you are well.2” and the message is: “Hello! How Are You? Hope You Are Well.”. This inconsistency in the output and the message is very noticeable. Fixing this is not feasible. Not using punctuations or special characters is easy and feasible, but the other problems are harder to fix. Therefore, I just mentioned this method as a possibility. The former method (SendMessage() / PostMessage()) is far easier to work with, and the code does not have to block the user from changing focus by clicking outside the window because messages are sent to the window and processed directly; the latter sends the key input to the window that has the active keyboard focus. So, if the notepad window does not have active focus, this method will not print the characters.

In the next session, we will attempt to develop a simple program that creates a working GUI.