

# How can I detect whether a keyboard is attached to the computer?

[devblogs.microsoft.com/oldnewthing/20150720-00](http://devblogs.microsoft.com/oldnewthing/20150720-00)

July 20, 2015



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Today's Little Program tells you whether a keyboard is attached to the computer. The short answer is “Enumerate the raw input devices and see if any of them is a keyboard.”

Remember: Little Programs don't worry about silly things like race conditions.

```
#include <windows.h>
#include <iostream>
#include <vector>
#include <algorithm>

bool IsKeyboardPresent()
{
    UINT numDevices = 0;
    if (GetRawInputDeviceList(nullptr, &numDevices,
                             sizeof(RAWINPUTDEVICELIST)) != 0) {
        throw GetLastError();
    }

    std::vector<RAWINPUTDEVICELIST> devices(numDevices);

    if (GetRawInputDeviceList(&devices[0], &numDevices,
                             sizeof(RAWINPUTDEVICELIST)) == (UINT)-1) {
        throw GetLastError();
    }

    return std::find_if(devices.begin(), devices.end(),
                       [](RAWINPUTDEVICELIST& device)
                       { return device.dwType == RIM_TYPEKEYBOARD; }) != devices.end();
}

int __cdecl main(int, char**)
{
    std::cout << IsKeyboardPresent() << std::endl;
    return 0;
}
```

There is a race condition in this code if the number of devices changes between the two calls to `GetRawInputDeviceList`. I will leave you to fix it before incorporating this code into your program.

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