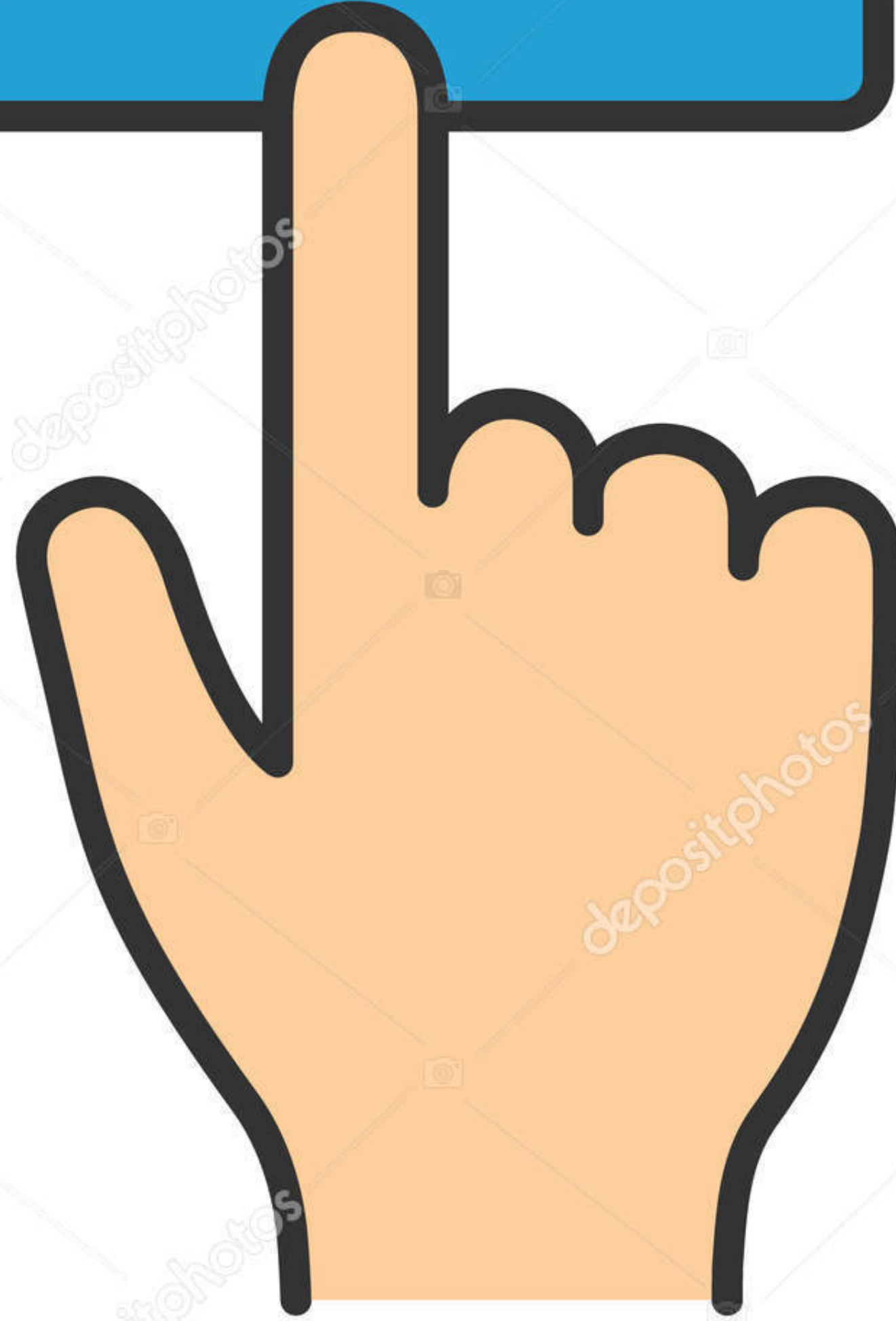


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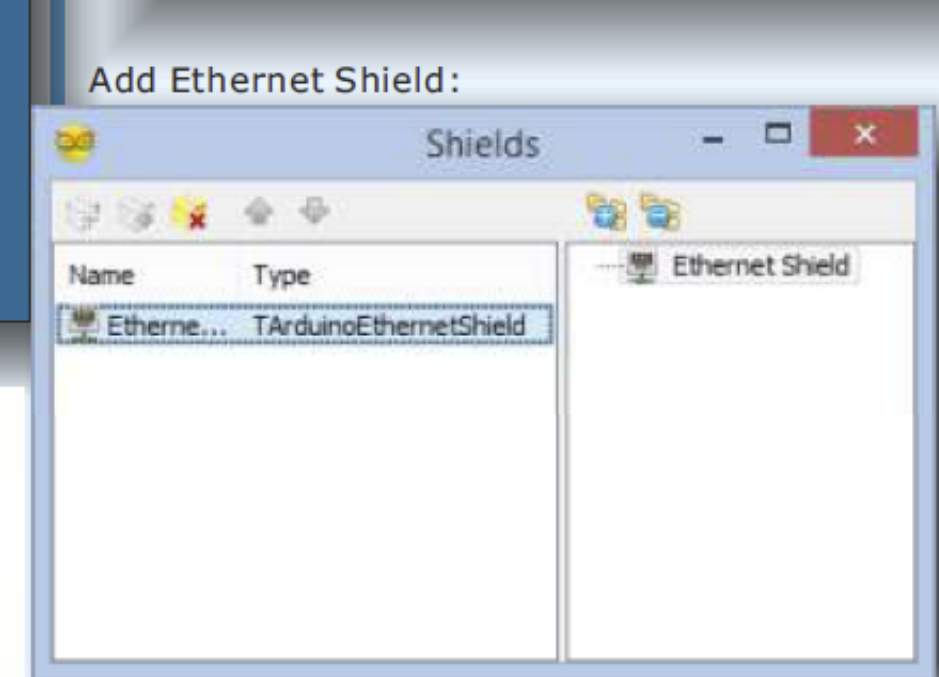
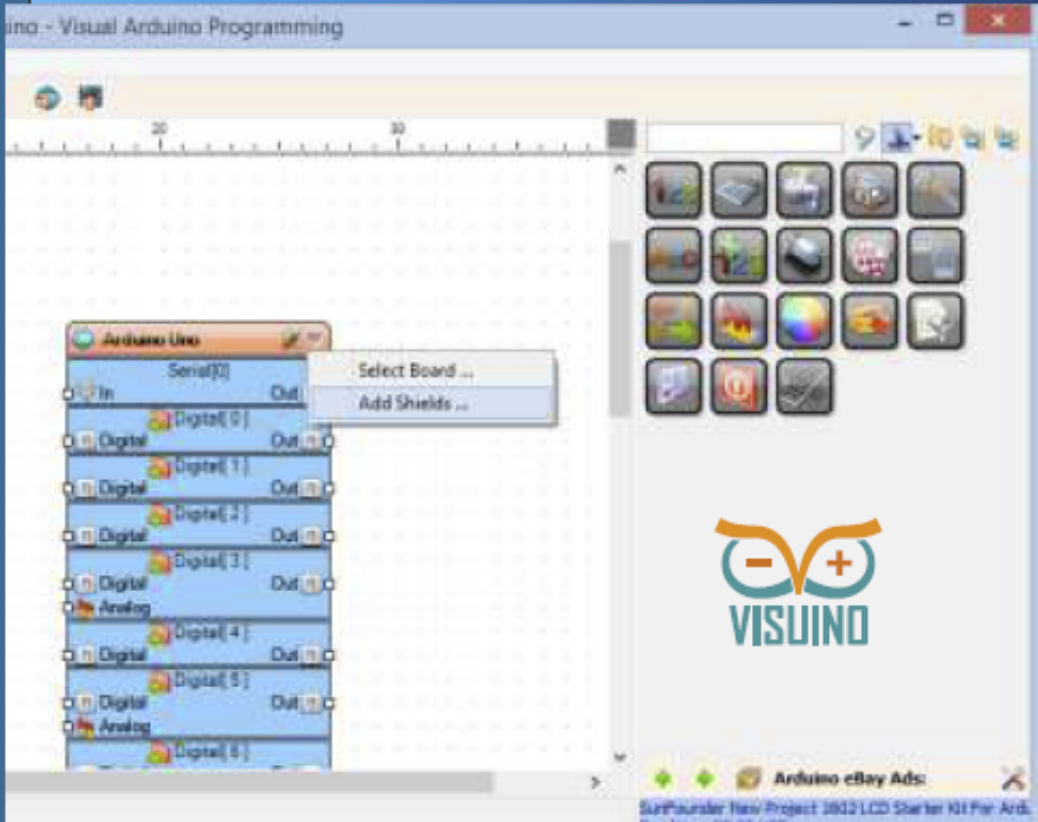


BY BOIAN MITOV

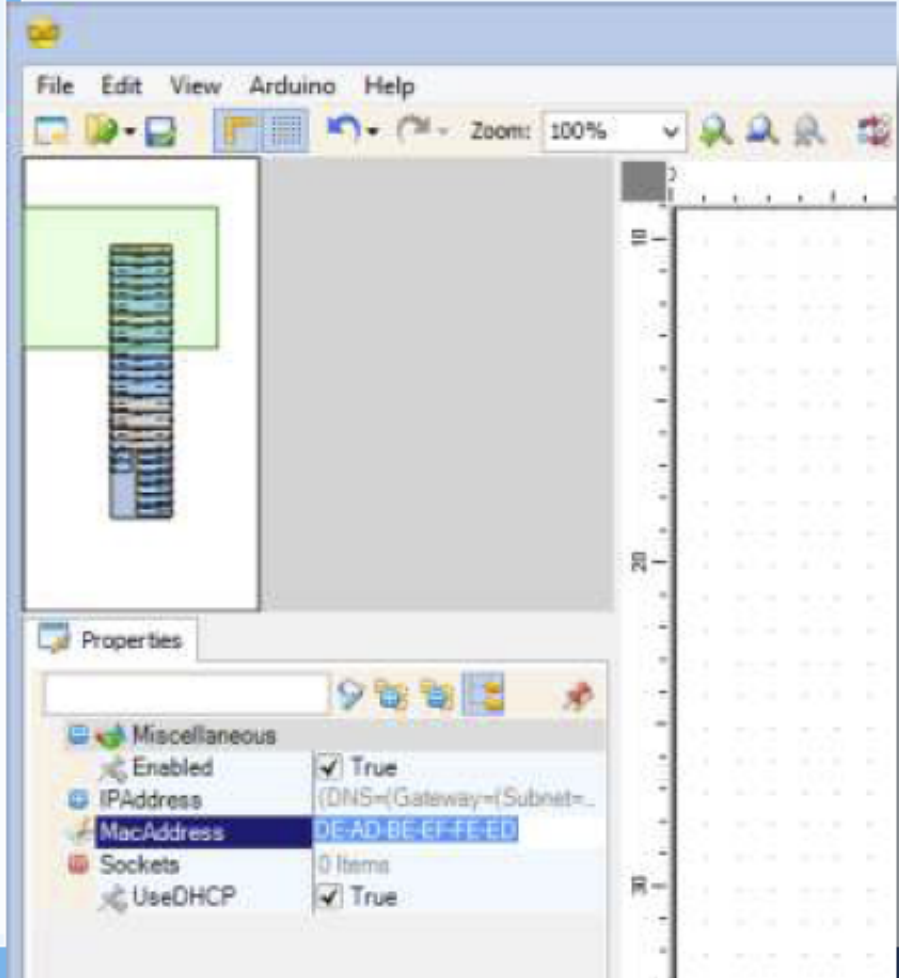
In the previous articles, you learned how to program Arduino using Visuino, and how to communicate with it using USB simulated serial port from your Delphi code. This opens a lot of interesting possibilities for collecting and processing live data, but the direct USB connection imposes some limitations. What if you want to collect data from many sensors spread over large area? Or what if you want to communicate with remote sensors over Internet? The basic Arduino UNO does not have built in network adapter, but there is Ethernet shield available for it. In addition many of the more advanced Arduino boards and their clones come with WiFi or wired Ethernet built in. There are also cheap and simple ESP8266 WiFi modules that can be connected to the Arduino, so networking Arduinos is routinely done. In this article you will learn how to setup Arduino to use Ethernet Shield, how to program it with Visuino, and how to connect to it from a Delphi application over the local network or Internet. Before you start, you will need to install Ethernet Shield on the Arduino. This is fairly easy. Just snap it on top of the board as shown in the picture.



You also will need to install CommunicationLab, PlotLab and InstrumentLab from Mitov Software. CommunicationLab is not officially released yet, but prerelease builds are available on request. You can also easily modify the examples in this article not to use PlotLab or InstrumentLab. First you will create a simple Arduino server. Start Visuino. Click on the Down arrow button in the top right corner of the Arduino component, and from the menu select "Add Shields..." :

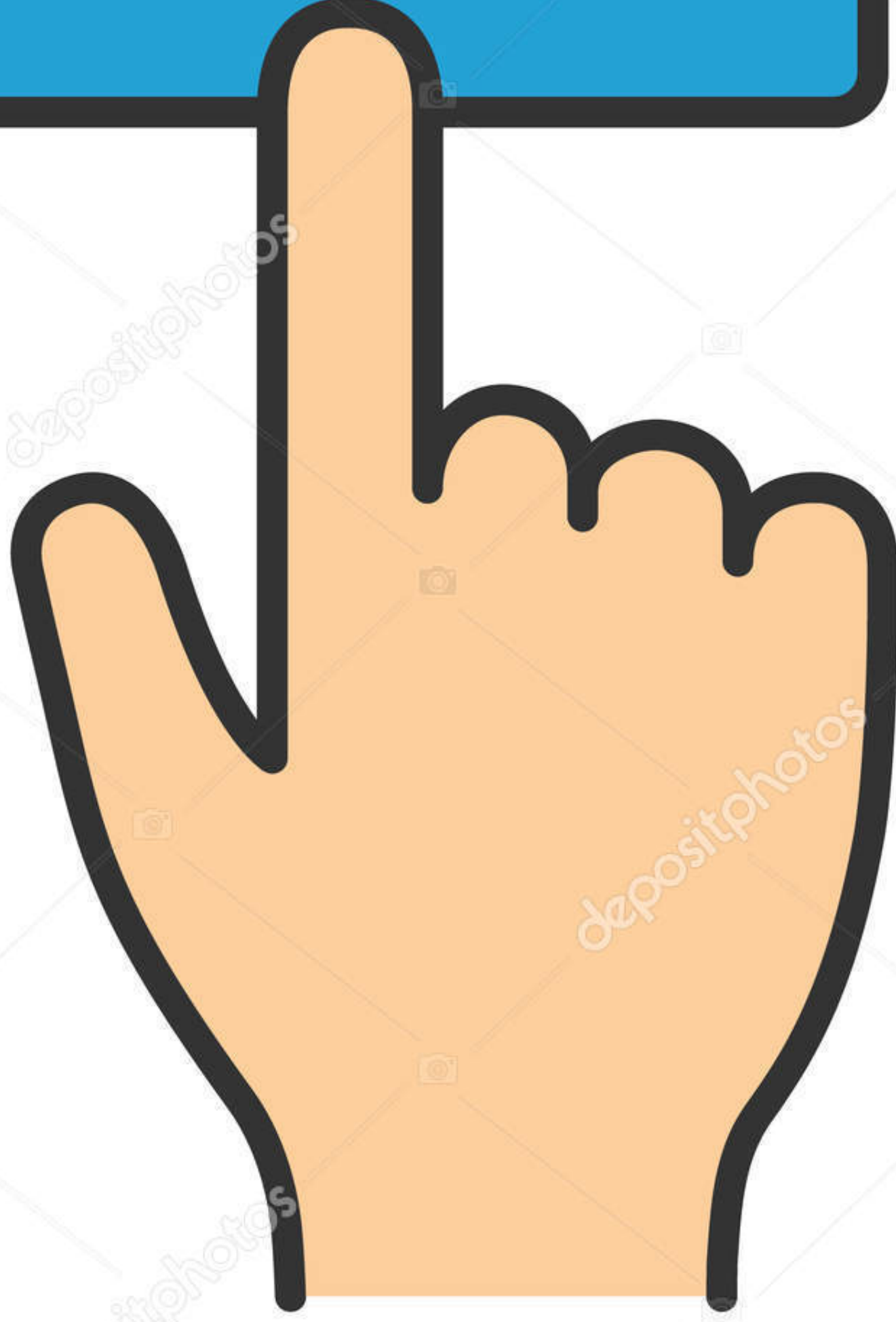


Next you need to specify the MAC address for the shield. You can use a MAC address generator, or one of the MAC addresses from the Arduino tutorials. Here I use DE-AD-BE-EF-FE-ED:





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