



Digital identity

IP Port Mirroring Workshop

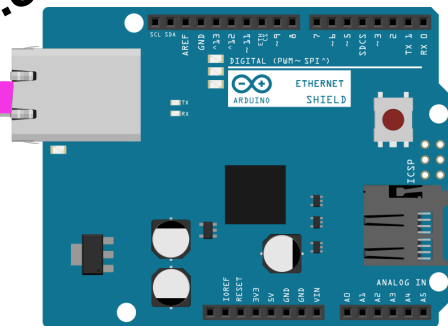
In 2018, Is there a Safe Way to Transmit by network your Confidential Data ?

You will use an Arduino card like an adapter to connect yourself to a computer.

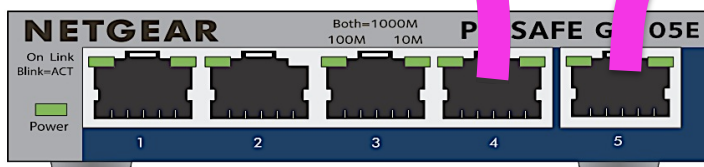
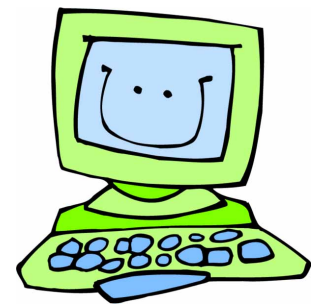
Two teams [A & B] will try to safely transmit to and receive data from each other.

Team A

IP 192.168.1.80

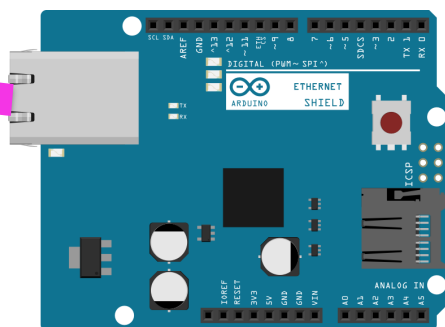


USB link

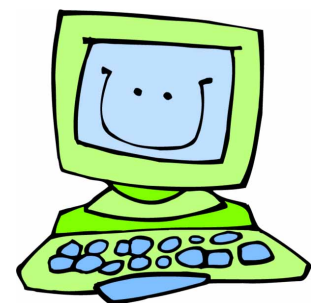


Team B

IP 192.168.1.90



USB link




Team A Step 1 :

Connect your Ethernet shield [previously connected to the Arduino card] to the port 4 of the switch Netgear GS105e V2.


Team A Step 2 :

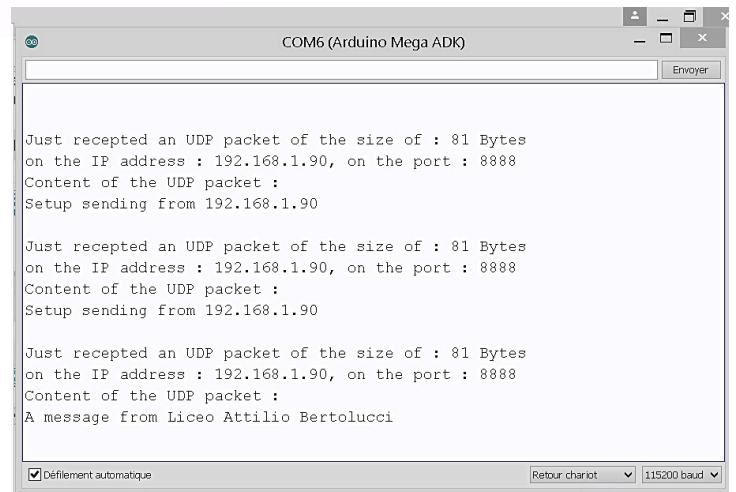
Open the Arduino IDE [integrated development environment].

- Select an UNO kind of Arduino card
- Select the right serial Port connected to the Arduino card [for instance COM6]
- Upload the sketch "UDPSendReceiveString80To90.ino".

 **Upload**
Compiles your code and uploads it to the configured board. See [uploading](#) below for details.

- Open an Monitoring window

 **Serial Monitor**
Opens the **serial monitor**.



```
COM6 (Arduino Mega ADK)
Envoyer

Just received an UDP packet of the size of : 81 Bytes
on the IP address : 192.168.1.90, on the port : 8888
Content of the UDP packet :
Setup sending from 192.168.1.90

Just received an UDP packet of the size of : 81 Bytes
on the IP address : 192.168.1.90, on the port : 8888
Content of the UDP packet :
Setup sending from 192.168.1.90

Just received an UDP packet of the size of : 81 Bytes
on the IP address : 192.168.1.90, on the port : 8888
Content of the UDP packet :
A message from Liceo Attilio Bertolucci

 Défilement automatique
Retour chariot 115200 baud
```

Select the speed rate of 115200 bits per second

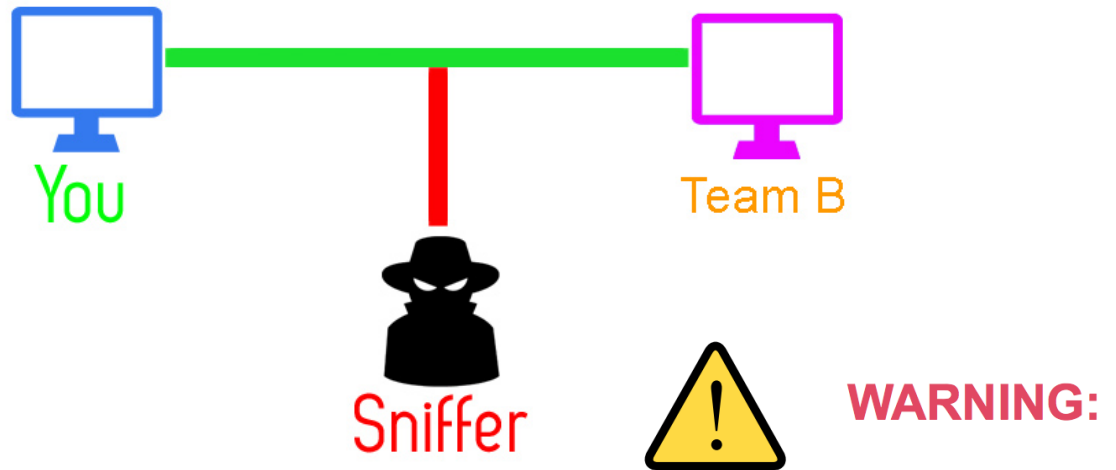
Select Carriage Return mode

Team A Step 3 :

Start a Chat between you and Team B



Question : Is there any sniffer on the network between you and Team B ?



Check if anyone are sniffing your chat from the switch of your network...

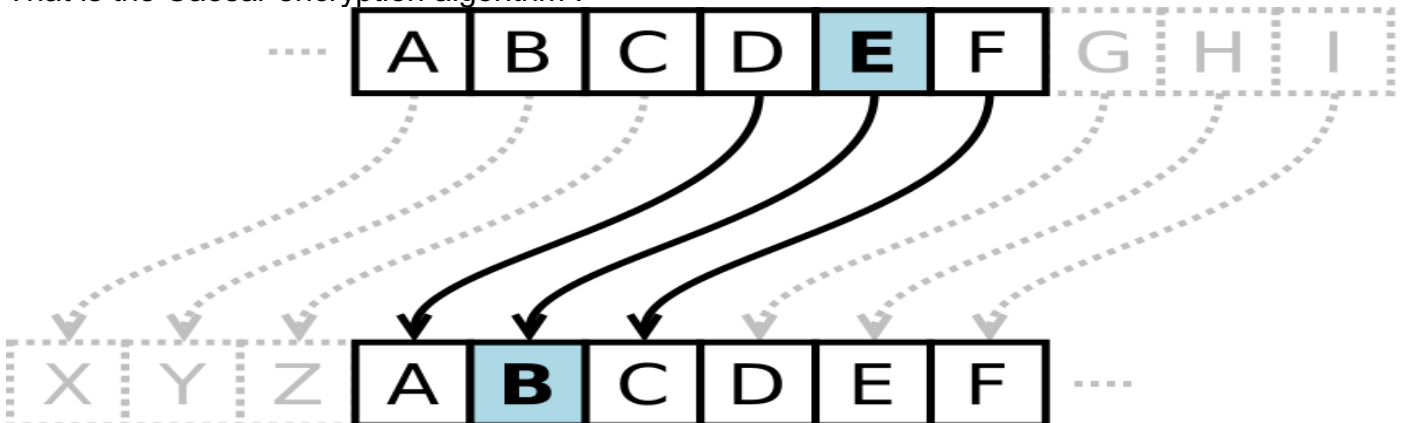
So may we share encrypted messages on our network ?



The goal is to convert a plain text to a cipher text like this :

Plain Text: ABCDEFGHIJKLMNOPQRSTUVWXYZ
Cipher Text: XYZABCDEFGHIJKLMNPOQRSTUVWXYZ

That is the Caesar encryption algorithm :



Team A Step 4 :

- Upload the sketch "CipherUDPSendReceiveString80To90.ino".

Team A Step 5 :

Start a new Chat between you and Team B

- Open an Monitoring window

Any sniffer guys will only be able to read a cipher message like this :

So be aware when you chat online !

