

PROGRAMAÇÃO VISUAL

Professor Leandro Vasconcelos dos Reis

Sobre o professor Leandro...



Engenheiro Especialista em Computação
Mestre em Engenharia Biomédica

Atuo atualmente:

Universidade POSITIVO – Infraestrutura, Projetos, Robótica, Automação, Sistemas Embarcados e IoT.

Consultor - Projetos envolvendo Sistemas Embarcados e IoT.

Linguagem de Programação

A linguagem de programação é um **sistema de comunicação estruturado, composto por conjuntos de símbolos, regras semânticas e sintáticas** que permitem o entendimento entre um programador e uma máquina.



Modelo de programação (texto)

```
#include <stdio.h>

int main(int argc, char *argv[]) {
    int i;
    for(i = 0; i < argc; i++)
        printf("%s\n", argv[i]);
    return 0;
}
```

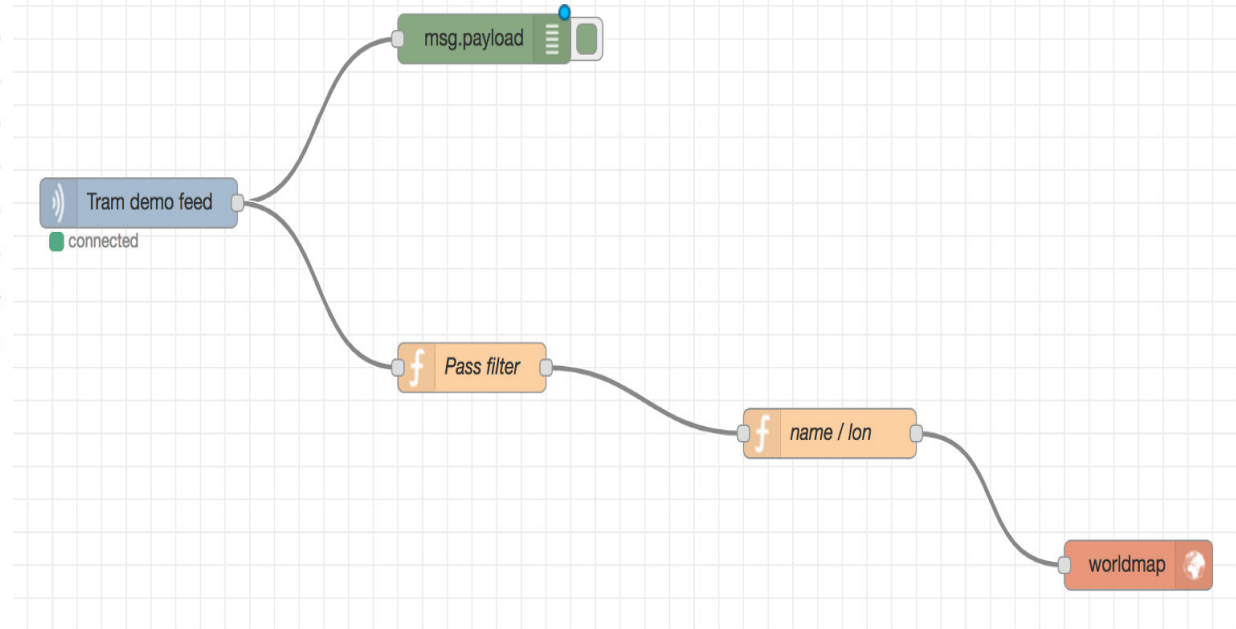
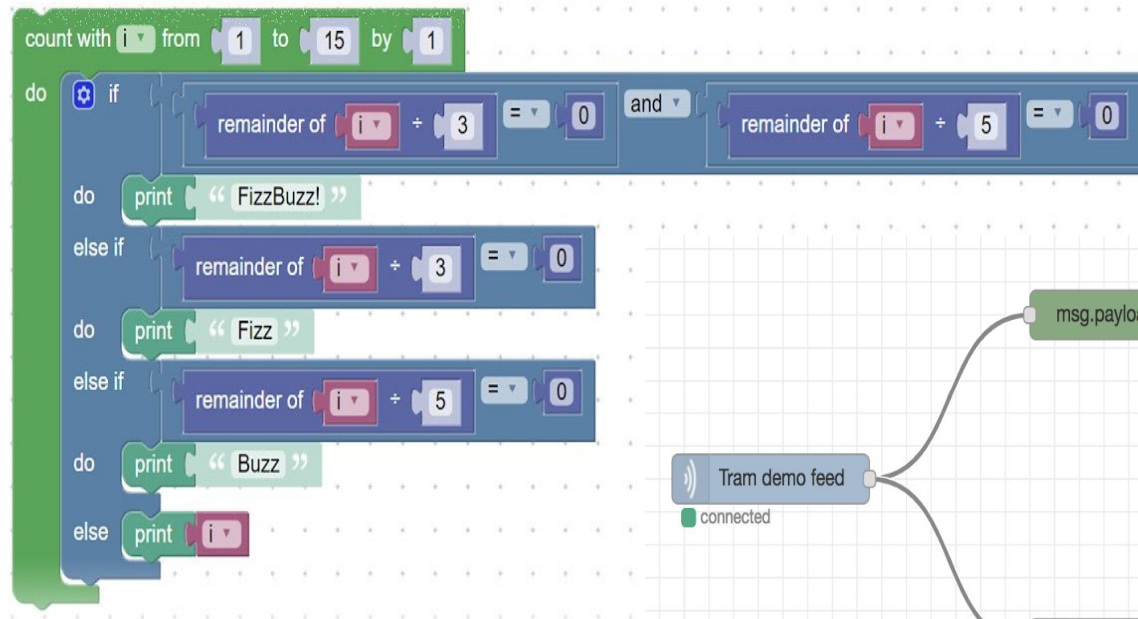
```
import sys
```

```
for arg in sys.argv:
    print arg
```

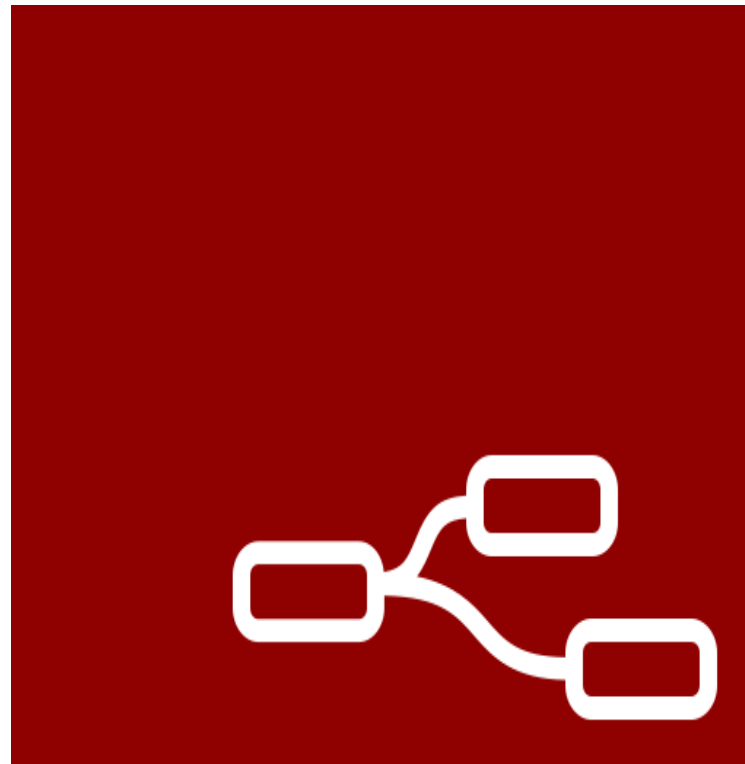
```
def edd5(x):
    return x+5

def catwrite(ast):
    nodename = getNodeName()
    label=symbol.sym_name.get(int(ast[0]), ast[0])
    print '    %s [label=%s]' % (nodename, label)
    if isinstance(ast[1], str):
        if ast[1].strip():
            print '    %s' % ast[1]
        else:
            print ''
    else:
        print ''
        children = []
        for i in range(len(ast[1])):
            childer.append(catwrite(child))
        print '    %s -> %s' % (nodename, children)
        for i in range(len(children)):
            print '    %s' % children[i].name
```

Modelo de programação (visual)



Ferramenta



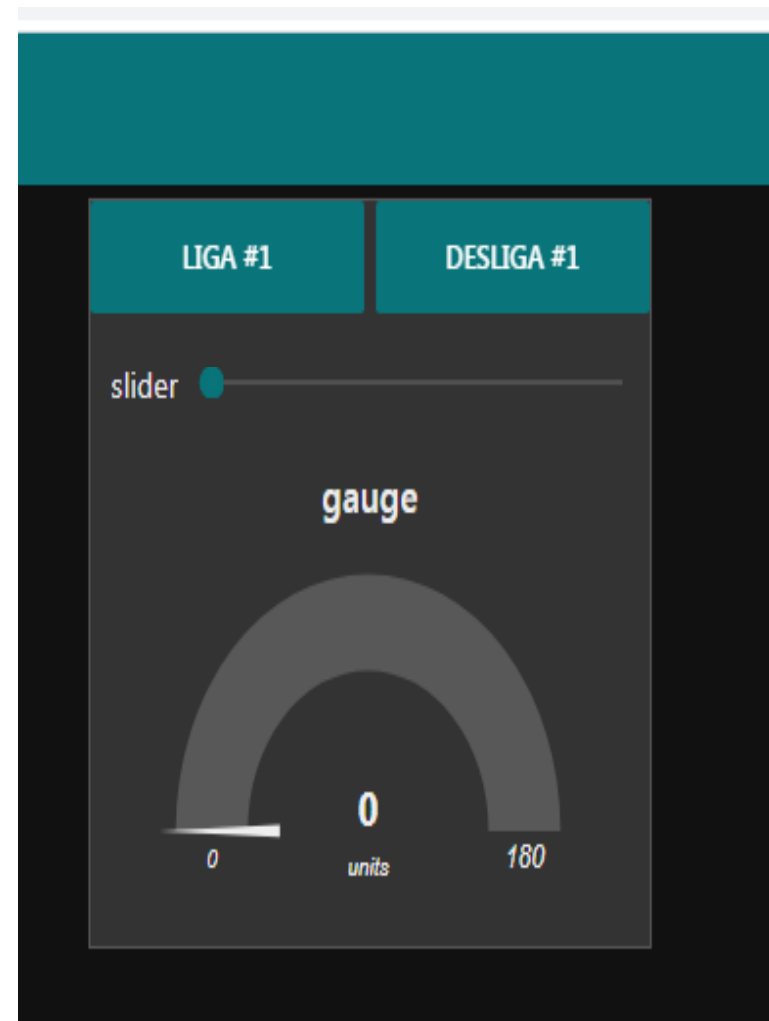
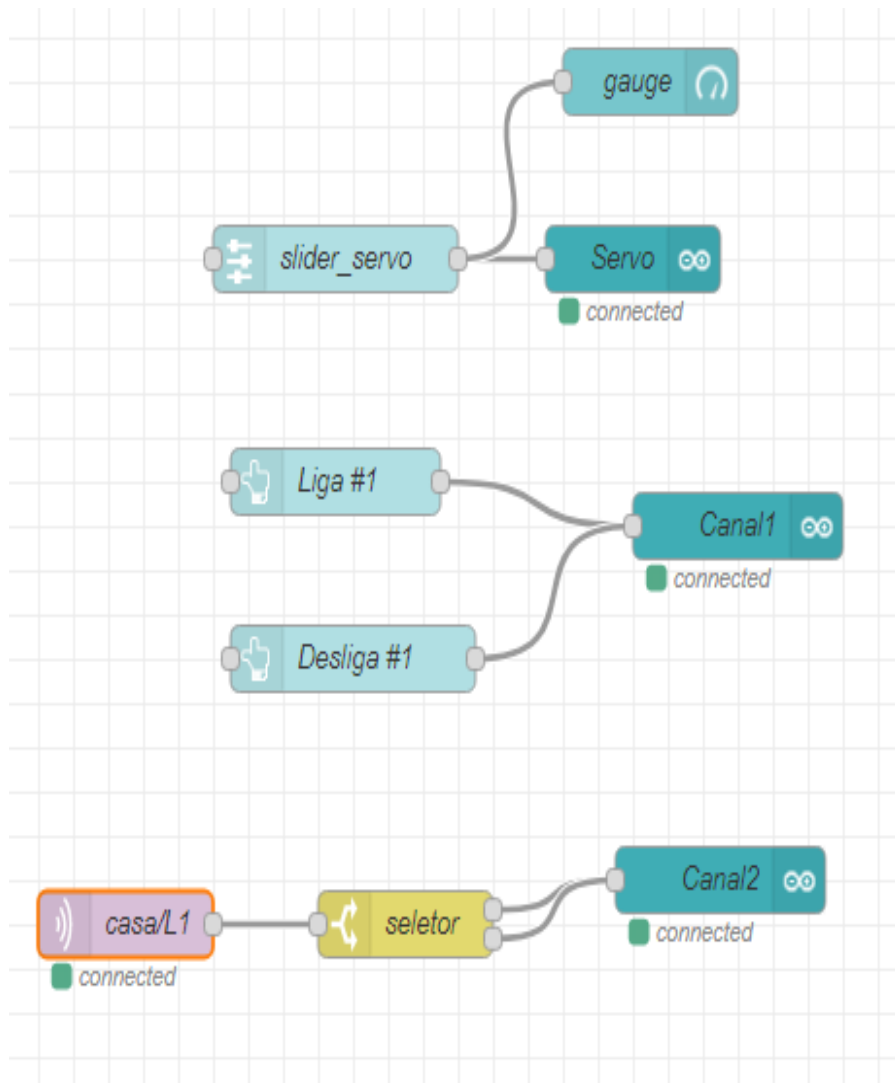
Node-RED



Raspberry Pi



Tela / Dashboard





Vamos preparar para começar...

1º Passo...



1. Instalar o node.js

1. <https://nodejs.org/dist/latest-v10.x/node-v10.20.1-x64.msi>
2. <https://nodejs.org/dist/latest-v10.x/node-v10.20.1-x86.msi>

Outras plataformas:

<https://nodejs.org/dist/latest-v10.x/>

2º Passo...

Agora dentro do prompt de comando do nodejs.

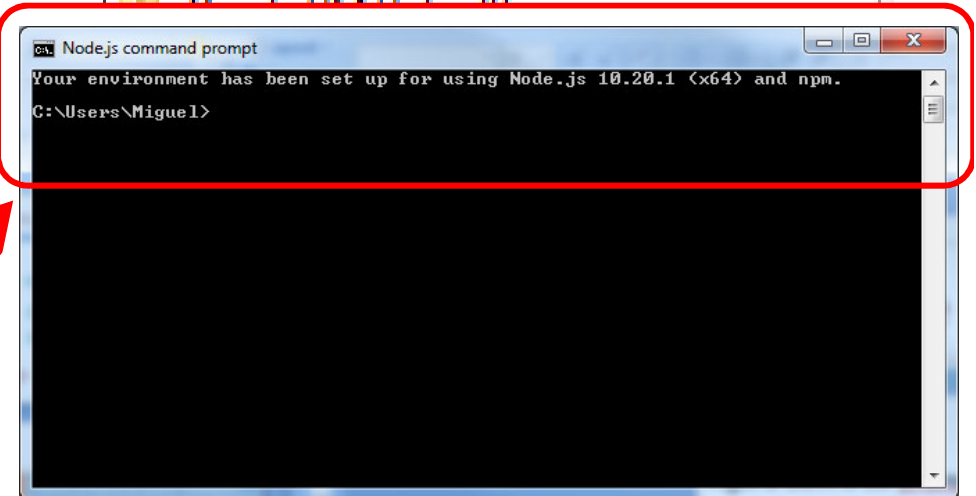
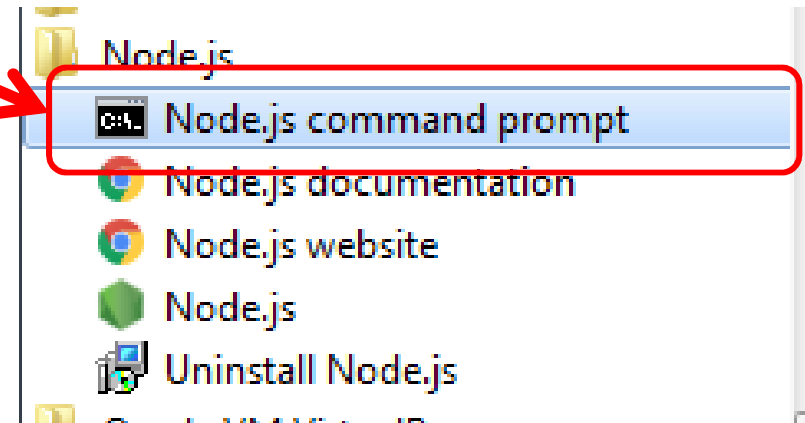
Instalar o node-red:

- Linux:

```
sudo npm install -g --unsafe-perm node-red
```

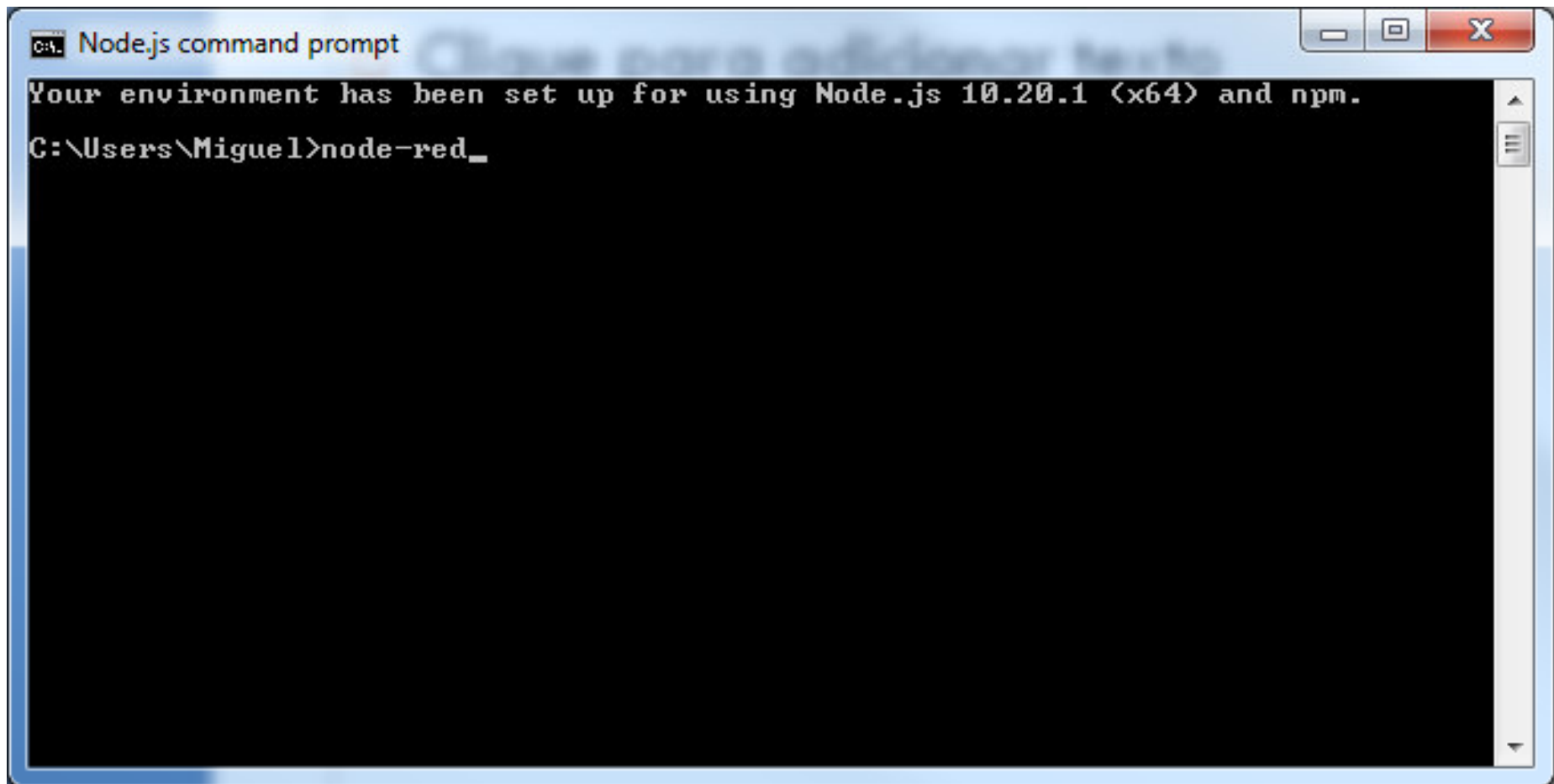
- Windows:

```
npm install -g --unsafe-perm node-red
```



3º Passo...

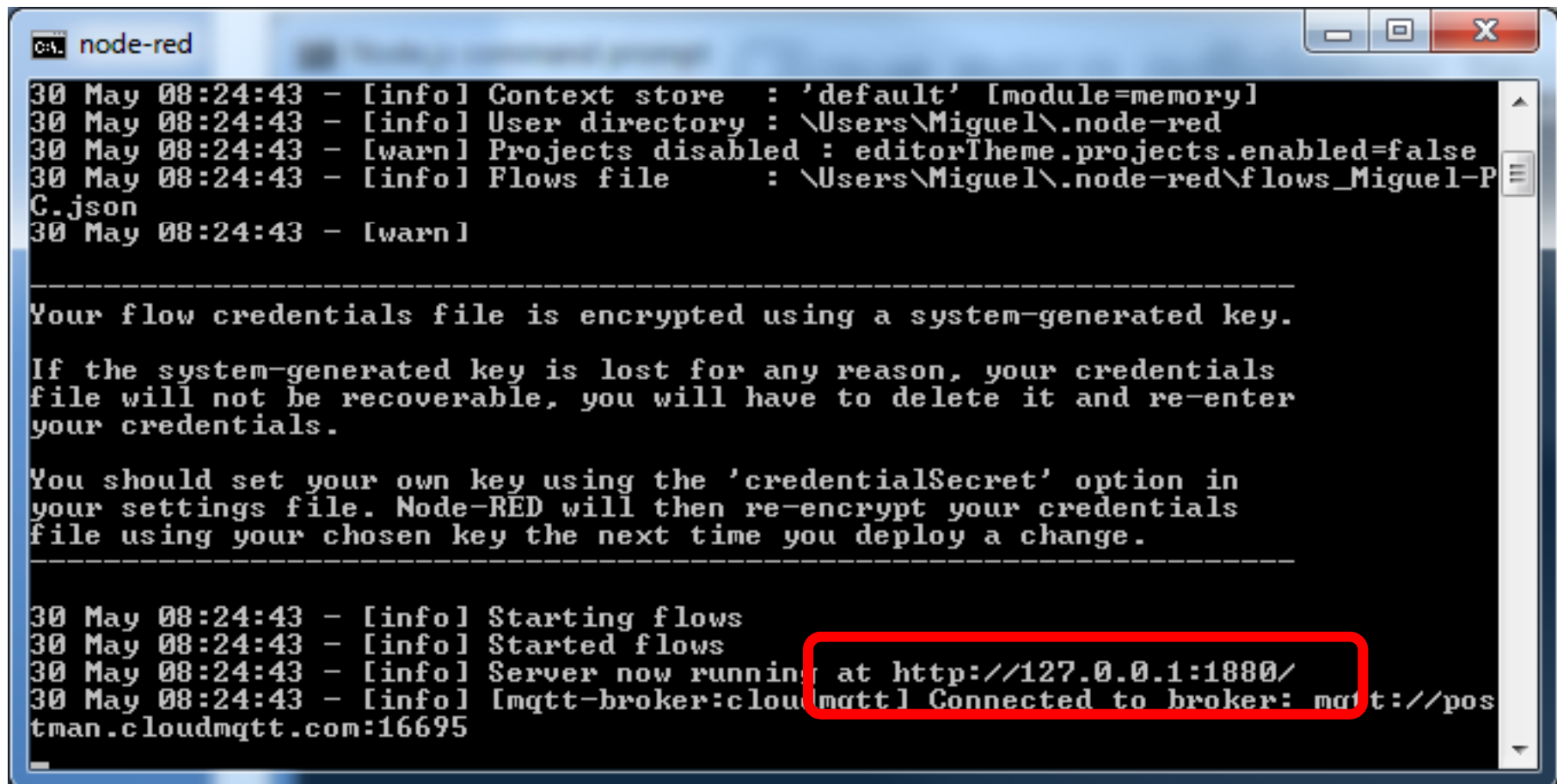
Digite dentro do prompt de comando do nodejs: node-red <enter>



```
Node.js command prompt
Your environment has been set up for using Node.js 10.20.1 (x64) and npm.
C:\Users\Miguel>node-red_
```

4º Passo...

Abra um browser e digite: 127.0.0.1:1880



```
node-red
30 May 08:24:43 - [info] Context store : 'default' [module=memory]
30 May 08:24:43 - [info] User directory : \Users\Miguel\.node-red
30 May 08:24:43 - [warn] Projects disabled : editorTheme.projects.enabled=false
30 May 08:24:43 - [info] Flows file : \Users\Miguel\.node-red\flows_Miguel-P
C.json
30 May 08:24:43 - [warn]

-----
Your flow credentials file is encrypted using a system-generated key.

If the system-generated key is lost for any reason, your credentials
file will not be recoverable, you will have to delete it and re-enter
your credentials.

You should set your own key using the 'credentialSecret' option in
your settings file. Node-RED will then re-encrypt your credentials
file using your chosen key the next time you deploy a change.
-----

30 May 08:24:43 - [info] Starting flows
30 May 08:24:43 - [info] Started flows
30 May 08:24:43 - [info] Server now running at http://127.0.0.1:1880/
30 May 08:24:43 - [info] [mqtt-broker:cloudmqtt] Connected to broker: mqtt://pos
tman.cloudmqtt.com:16695
```

5º Passo...

