

# Bringing Innovation to Life



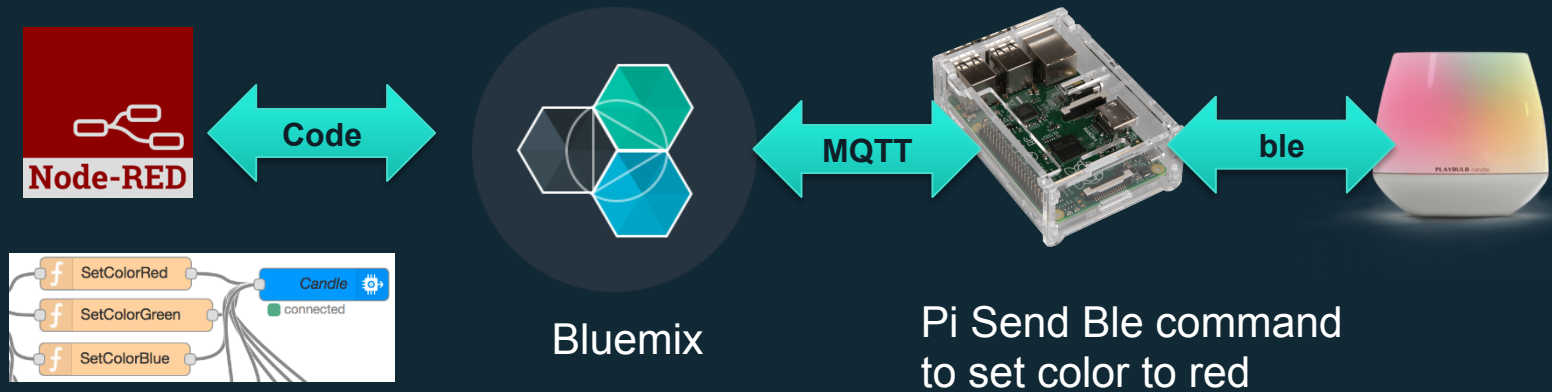
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# Objective – Controlling a Light wireless via a PI



# Node-red tool – Drag/Drop - Javascript coding tool

The screenshot shows the Node-RED web interface in a browser. The address bar displays `https://snp???.mybluemix.net/red/#flow/e7ba362f.5a9f18`. The interface includes a left sidebar with a 'filter nodes' search bar and a list of input nodes: inject, catch, status, link, mqtt, http, websocket, tcp, mqlight, and ibmiot. The main workspace contains a flow with nodes: 'GetDataFromPiCandle', 'From the PiCandle' (highlighted with a blue box), a function node 'f', and a 'msg.payload' output node. A red arrow labeled '3. drag' points to the 'http' node in the sidebar. Another red arrow labeled '4. connecting' points to the connection line between 'From the PiCandle' and 'msg.payload'. A third red arrow labeled '5. On/off' points to the 'msg.payload' node. A fourth red arrow labeled '6. Double clicks For more infos' points to the 'From the PiCandle' node. A fifth red arrow labeled '7. Debug/Message' points to the debug console on the right, which shows a log of messages with JSON payloads. A sixth red arrow labeled '1. URL ??= group' points to the address bar. A seventh red arrow labeled '2. Deploy to Server Click after every change' points to the 'Deploy' button in the top right. A large red arrow labeled '3. drag' also points from the 'http' node towards the workspace.

1. URL ??= group

2. Deploy to Server  
Click after every change

3. drag

4. connecting

5. On/off

6. Double clicks  
For more infos

7. Debug/Message

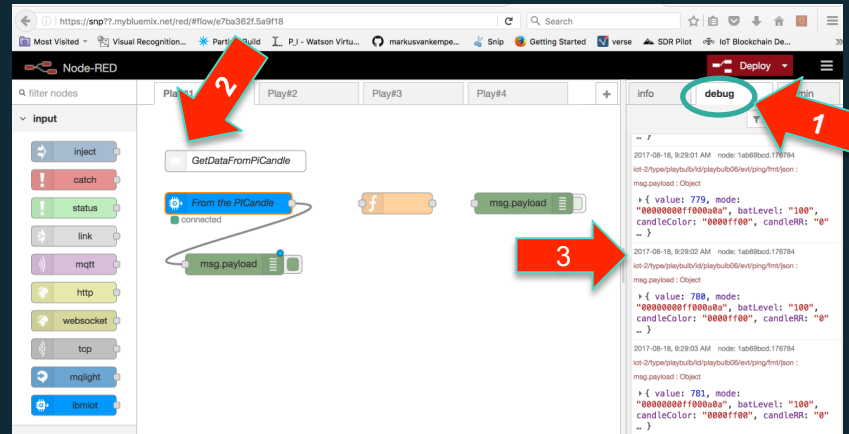
# Let's go!

- Power up PI & Light
  - *Note: Light should turn green and stay green once connected*
- Open a browser and type in your group url
  - Like: `http://snp##.mybluemix.net`
    - Where ## is your group number like 06
  - E.g. `http://snp06.mybluemix.net/red`

**We will demo each step of the exercise**

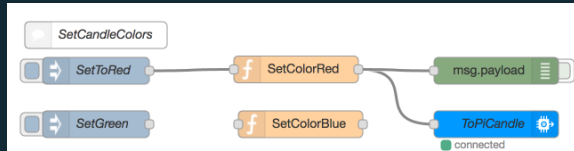
# Exercise #1

- 1. Activate the **Debug Tab** on the right
- 2. Enable the debugging – by clicking on the button on the node
- 3. You should see message from the Candle in the Debug Tab
- Explore the messages



## Exercise #2

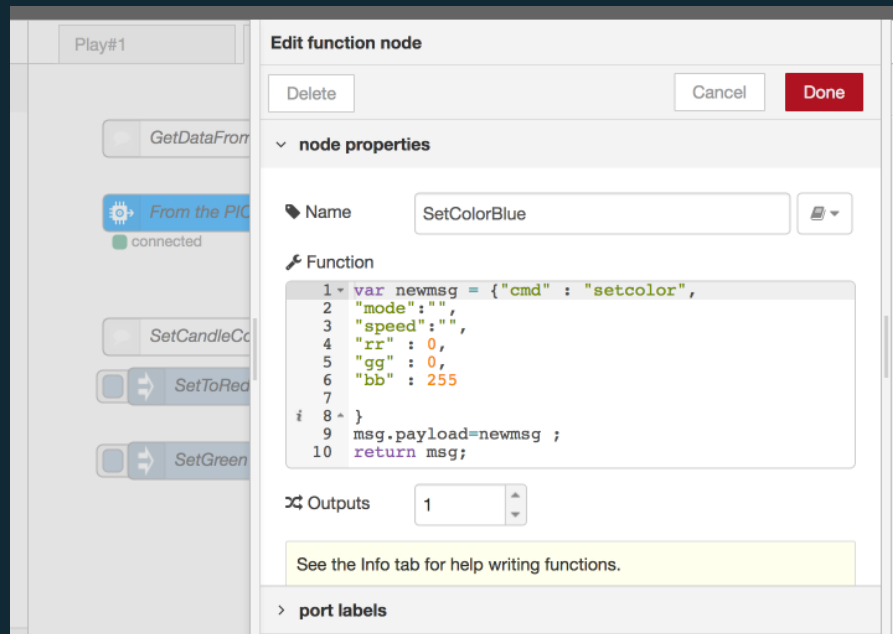
- Let's send commands to the Candle to change the light color



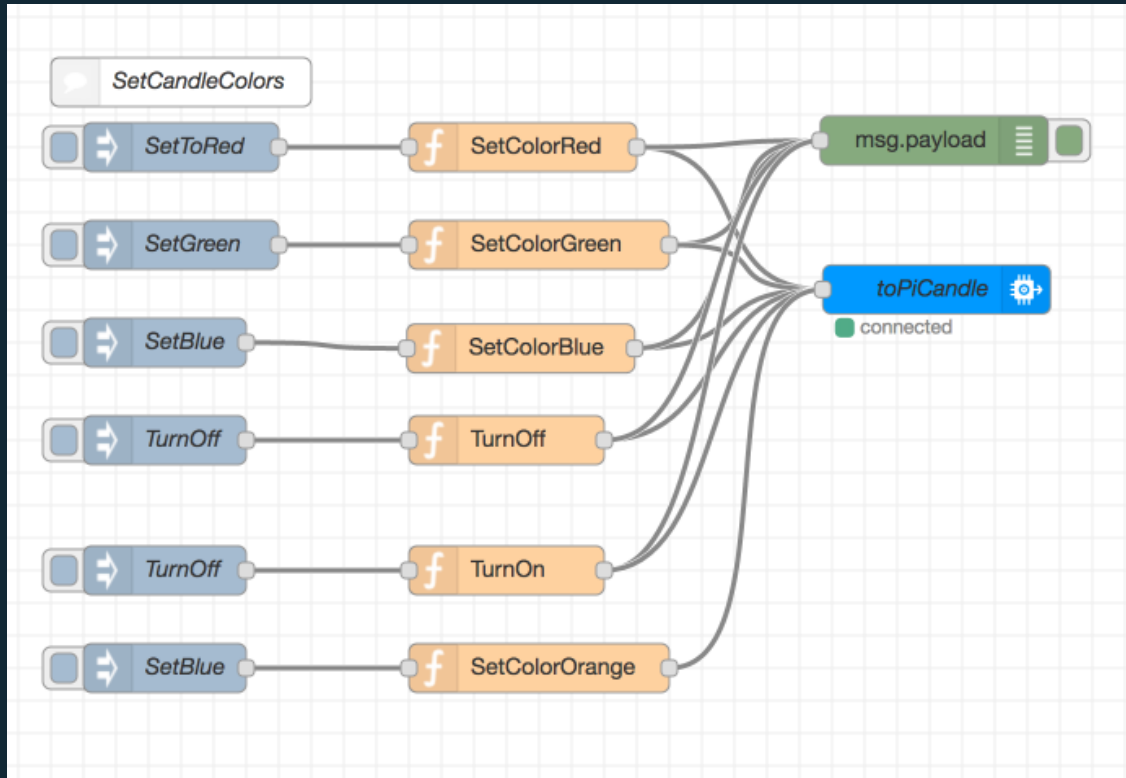
- Add functionality to change the color to **blue**, **green** and off
- You will need to add nodes and connect them as well as code

## Code

```
var newmsg = {"cmd" : "setcolor",  
"mode": "",  
"speed": "",  
"rr" : 0,  
"gg" : 0,  
"bb" : 255  
}  
msg.payload=newmsg ;  
return msg;
```



Result should look like:





## Exercise #3

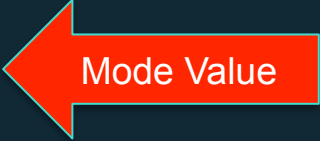
- Send mode commands to the Candle
  - Set Candle to
    - candlelight more
    - Flash
    - Jump
    - Fade

Add and connect the node and input/copy the code

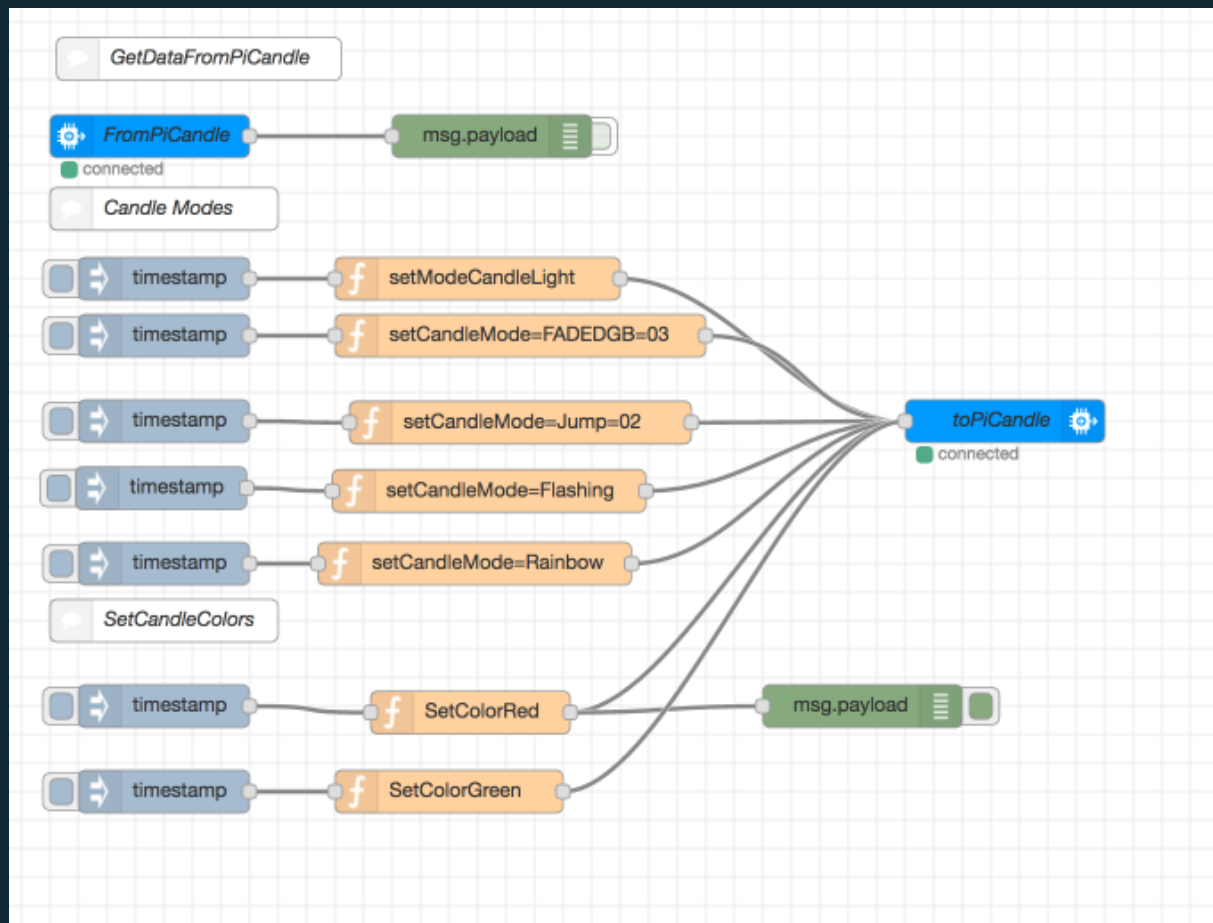
Note: move the color setting command node over from the previous Tab

## Code

```
var newmsg = {"cmd" : "setcolor",  
//00 7e ff 00 00 19 00"  
// modes: 01 = Fade, 02 = Jump RGB (rainbow), 03 = Fade RGB (rainbow), 04 = Candle Effect  
  
"mode":0,  
"speed1":19,  
"speed2":0,  
"rr" : 0,  
"gg" : 0,  
"bb" : 255  
  
}  
msg.eventOrCommandType = "setCandleMode";  
msg.payload=newmsg ;  
return msg;
```



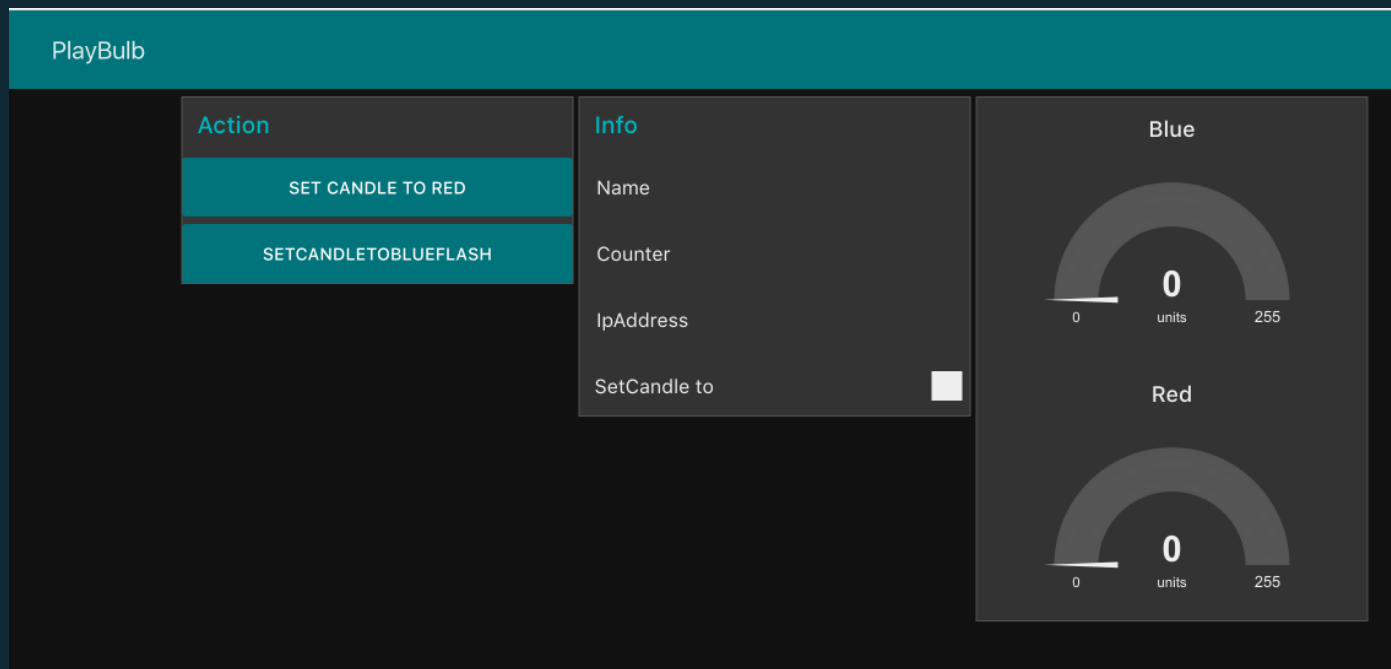
## Result:



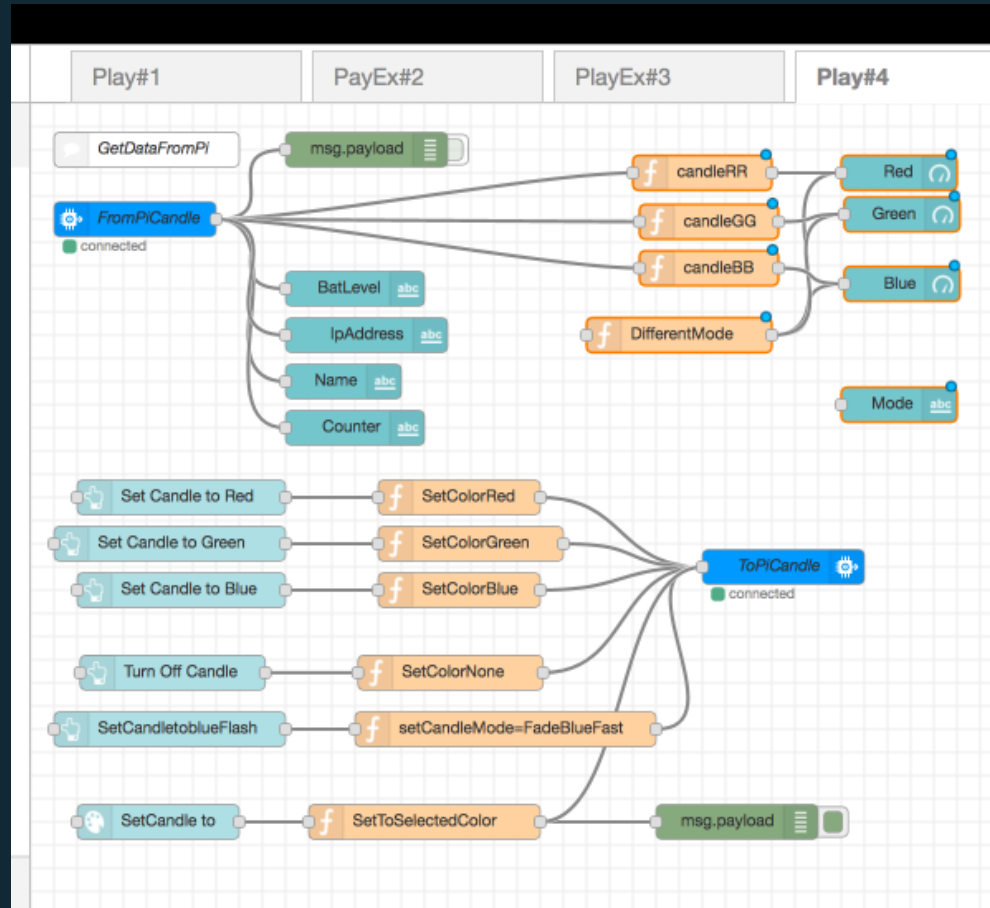
## Exercise #4

- Create a dashboard to web/mobile-enable the candle function
- Open a new browser tab with the URL
- `https://snp<##>.mybluemix.net/ui` (Where # is your group number)
- Remove the brackets “< >”
- E.g. [http://snp06.mybluemix.net](https://snp06.mybluemix.net)

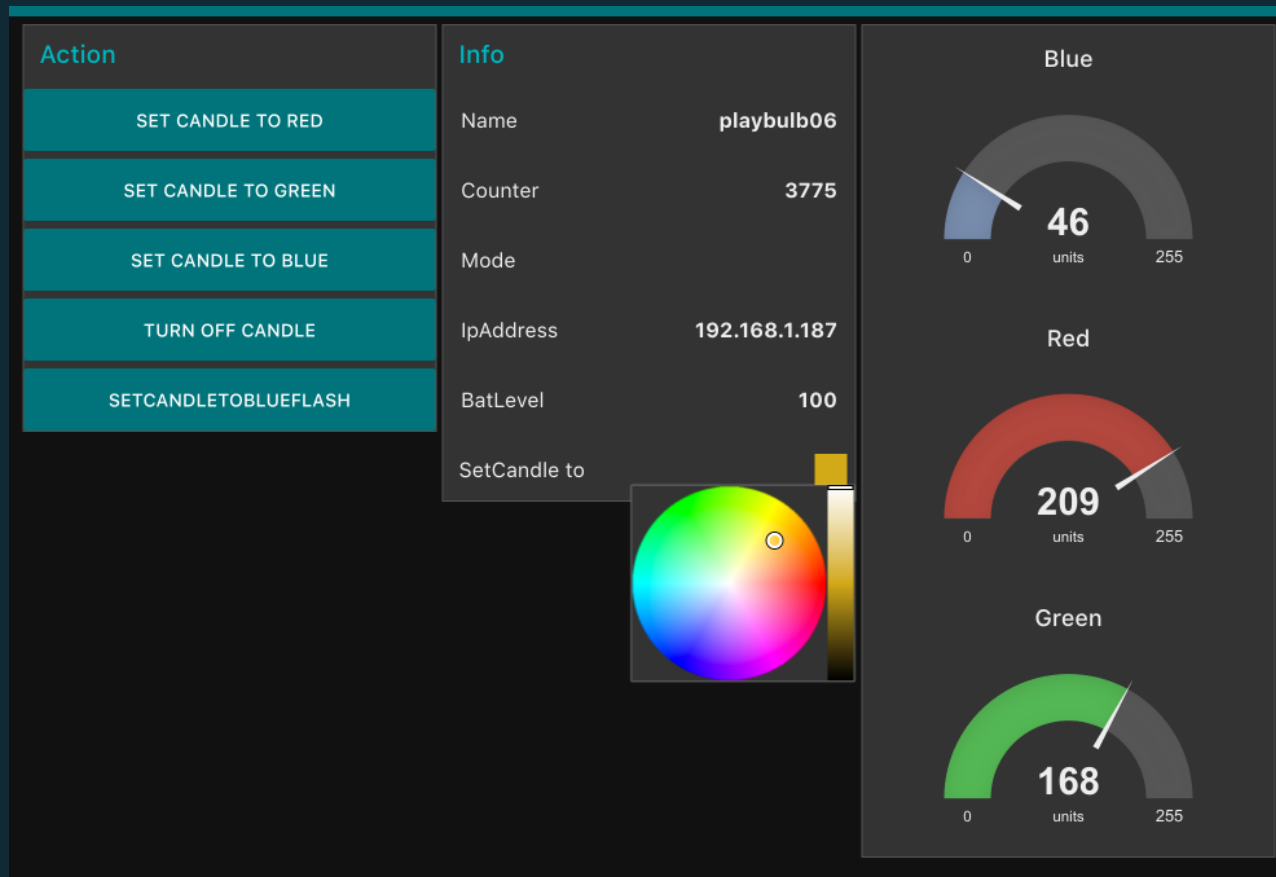
# Your starting dashboard



# Add all functions/candle commands and data to the dashboard



# Result:



## Extra:

- Use you phone or tablet with the ui url <https://snp<##>.mybluemix.net/ui>
- Try to add functionality to detect the Candle mode

