

# Bringing Innovation to Life



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## Our Goal

We will track the International Space Station and when the Space Station is in certain area of the Earth we will switch on or turn the candle red/green etc.



# Facts About the International Space Station aka ISS

Use Google to find some facts like

How old is then ISS when was it launched?

How many people are on board?

How fast is the ISS?

How many time does it go around the Earth ?

Is Canada part of the ISS program ?

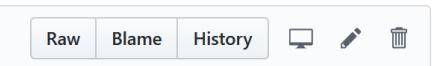
<https://www.youtube.com/watch?v=-UGjZahSG-w>

# IBM 3rd session on site Agenda:

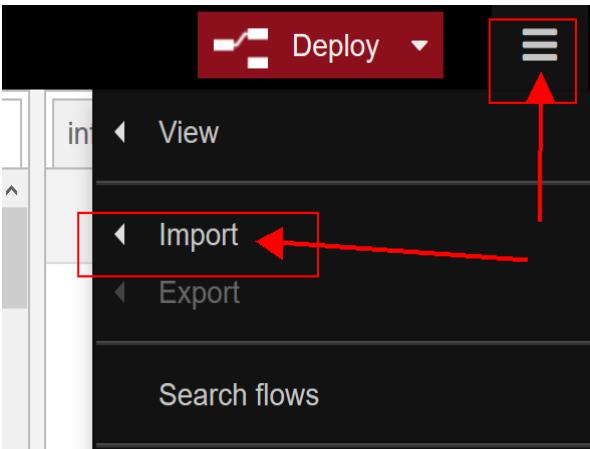
- 1. Import the code from GitHub – see instructions**
- 2. Adjust the candle number to YOUR # and Check Code**
  
3. Learn about Longitude and Latitude
4. Play and discover e.g: Switch the candle on and off based on the area of the ISSI
5. Back up your code
6. Setup email notification with YOUR Gmail credentials
  
7. Homework:  
Calculate the speed of the ISS and display it on the Dashboard  
Send ME ([mvk4ibm@gmail.com](mailto:mvk4ibm@gmail.com)) and yourself an e-mail when the ISS is within one of the Boxes

## 1A Import the code into your node-RED space

- go to <https://github.com/SixNationsPolytechnic>
- Click iotcandle to open it
- Click.snp00/iotcandle to open it
- To copy the code **04-01-IssArea.flow**:
  - Click on “Raw”
  - Press CTRL A to select
  - Press CTRL C



	SixNationsPolytechnic	Rename 0206weather.flow to 02-02a-Weather.flow
	snp00/iotcandle	Rename 0206weather.flow to 02-02a-Weather.flow
	README.md	Create README.md

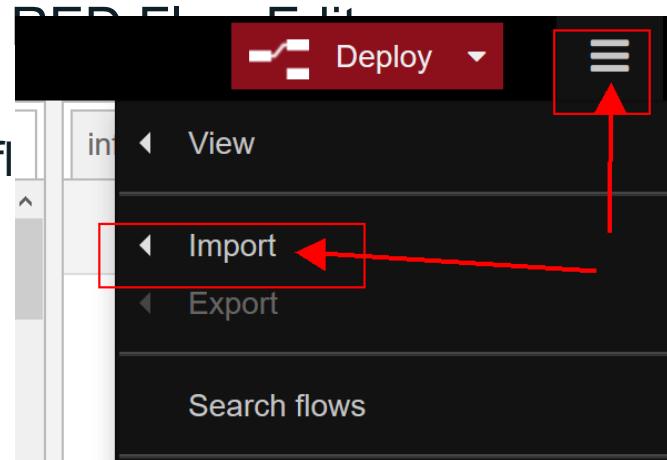


SixNationsPolytechnic Update 04-01-IssArea.flow		
		Latest commit dadff9e 5 hours ago
	01-01HelloWorld.flow	Rename 01HelloWorld.flow to 01-01HelloWorld.flow
	01-02-IoTCandleColors.flow	Rename 02IoTCandleColors.flow to 01-02-IoTCandleColors.flow
	01-03-IoTCandleModes.flow	Rename 03IoTCandleModes.flow to 01-03-IoTCandleModes.flow
	01-04-Dashboard.flow	Rename 04dashboard.flow to 01-04-Dashboard.flow
	02-01Variables01.flow	Update and rename 02-01Variables.flow to 02-01Variables01.flow
	02-01Variables02.flow	Create 02-01Variables02.flow
	02-01Variables03.flow	Create 02-01Variables03.flow
	02-02Weather01.flow	Update 02-02Weather01.flow
	02-02a-Weather.flow	Rename 0206weather.flow to 02-02a-Weather.flow
	02-03-ISS01.flow	Create 02-03-ISS01.flow
	04-01-IssArea.flow	Update 04-01-IssArea.flow
	SNP-Day1-mvk20170831.pdf	Add files via upload

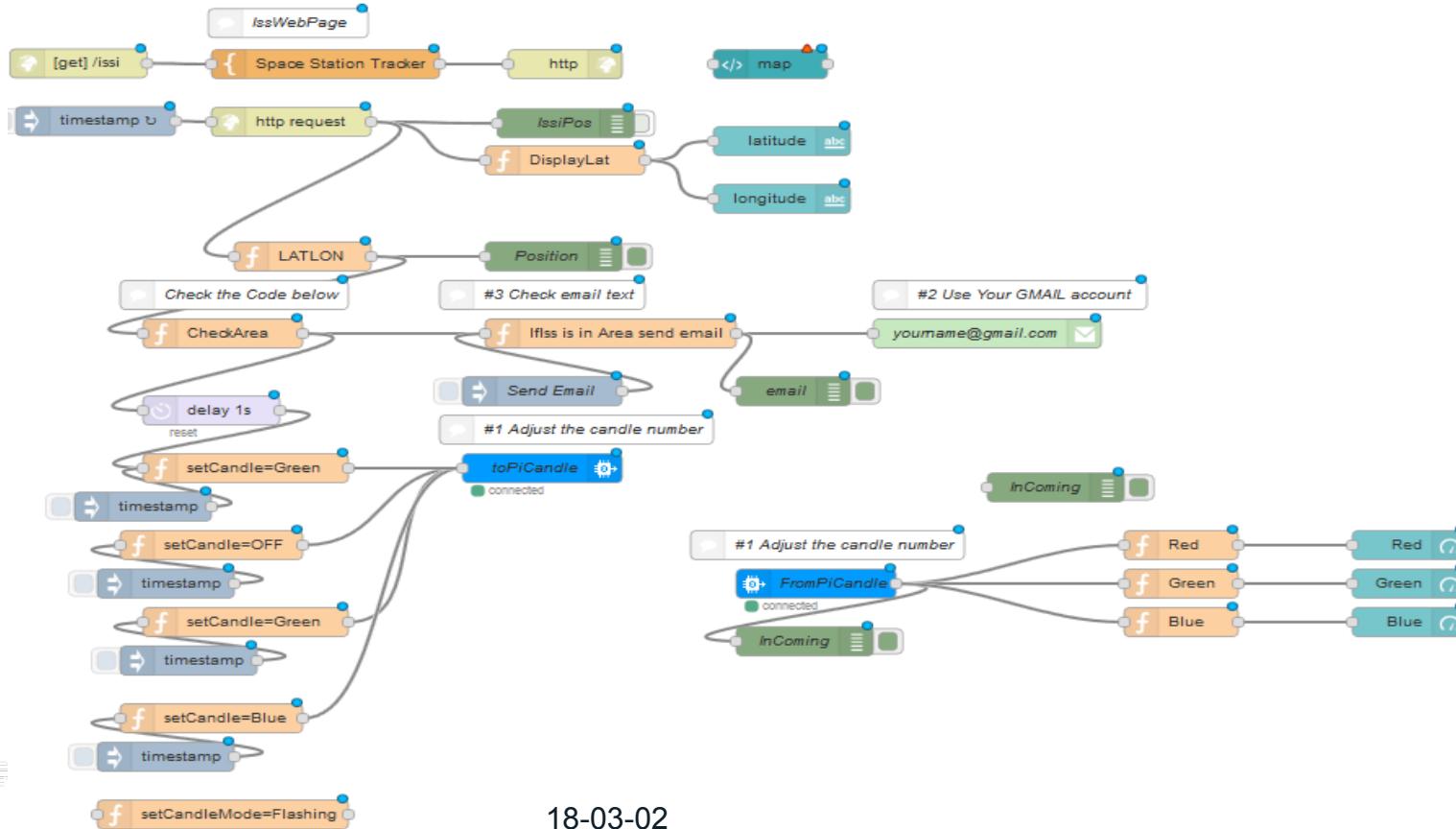
## 1B Import some code into your node-RED space

- Copy the code from GitHub into Your Node

- <http://snp##.mybluemix.net/>
- Click on the button “Go to your Node-RED fl
- Click on the menu (3 horizontal lines)
- Click on Import
- Click on clipboard
- Click on CTRL V to paste the code
- Click on Import button



# ISS over an area Change Candle Color and sned Mail



# Adjust Your Candle #

The screenshot shows a Node-RED flow titled "Weather2". On the left, the flow consists of several nodes: an "InBox" node, an "In Area" node, a "limit 1 msg/m" node, a function node labeled "setCandle=OFF", and a "Not in area" node. These nodes are interconnected with wires. Below them, there are two more function nodes labeled "Red" and "Green", which also have connections. A central node labeled "toPiCandle" is connected to all these nodes. A "connected" node is also present. At the bottom, there is a note "#1 Adj" and an "InC" node.

**Edit ibmiot out node**

**node properties**

- Authentication: Bluemix Service
- Output Type: Device Command
- Device Type: playbulb
- Device Id: playbulb??
- Command Type: setColor
- Format: json
- Data: msg.payload
- QoS: 0
- Name: toPiCandle

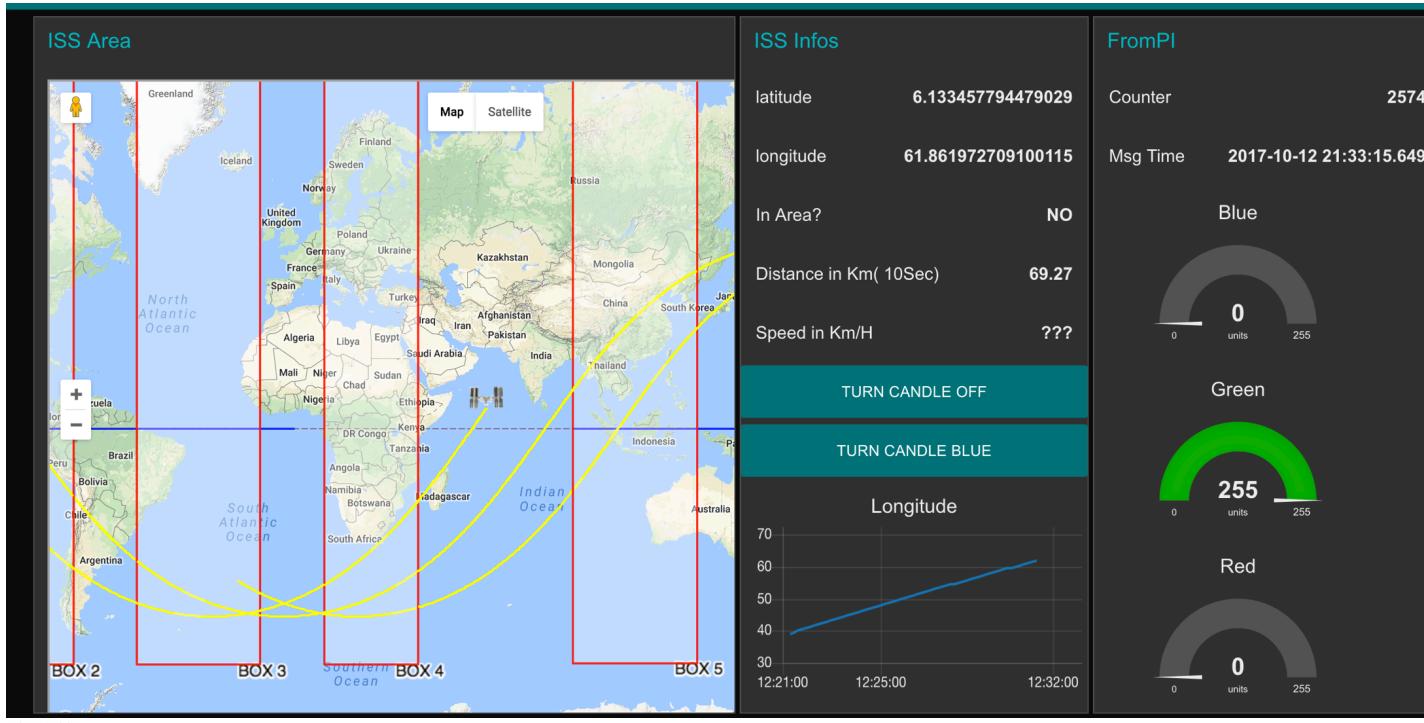
**Note:** If there is a property in the message that corresponds to any of the values entered above, then the property in the message takes precedence. See the Info tab for more details.

**Example JSON device event:** {"d":{"myName":"Arduino Uno", "temperature":989}}



Check the Code via the URL in a new browser window

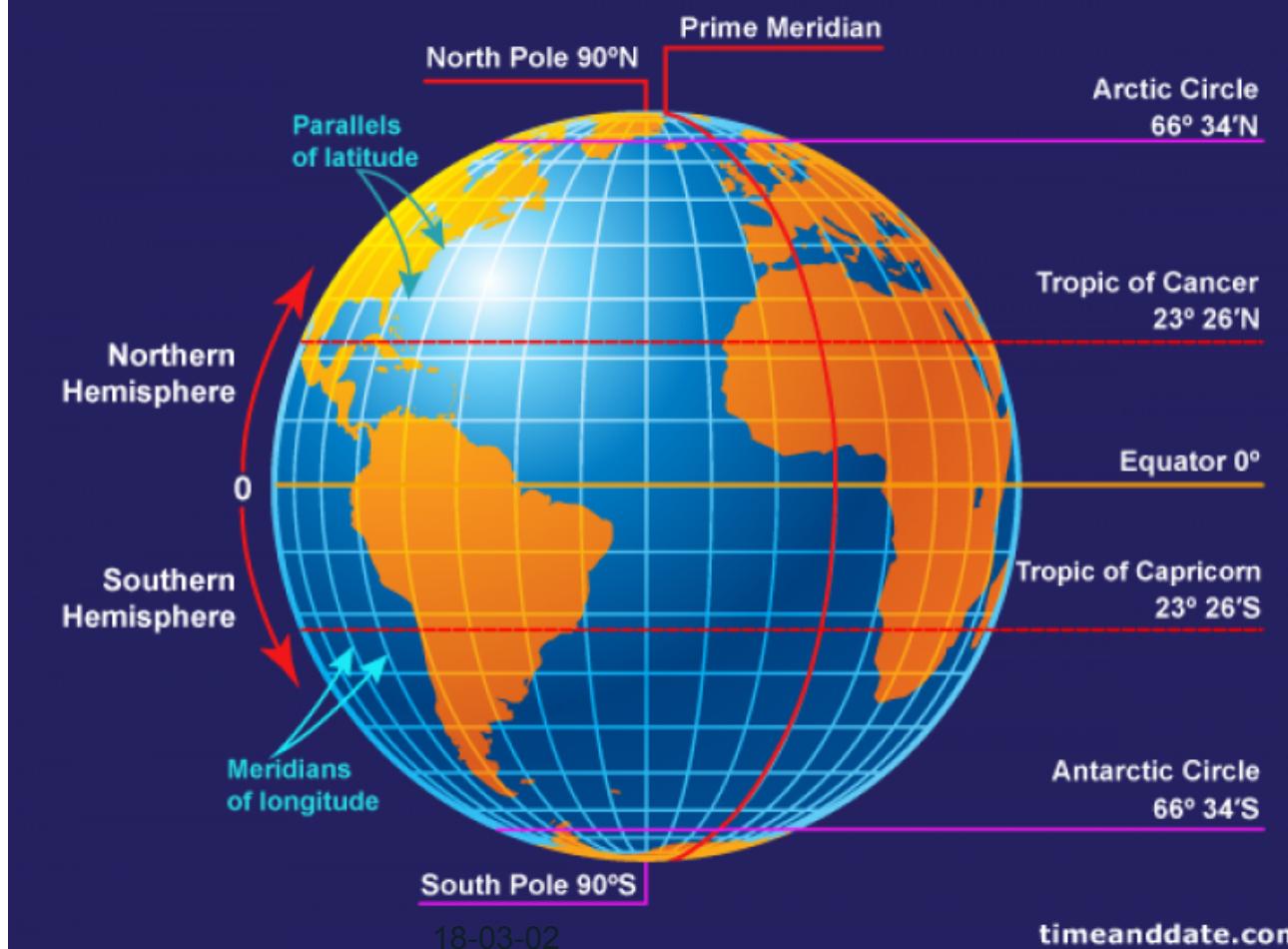
<https://snp##.mybluemix.net/ui> - addjust ## with your number



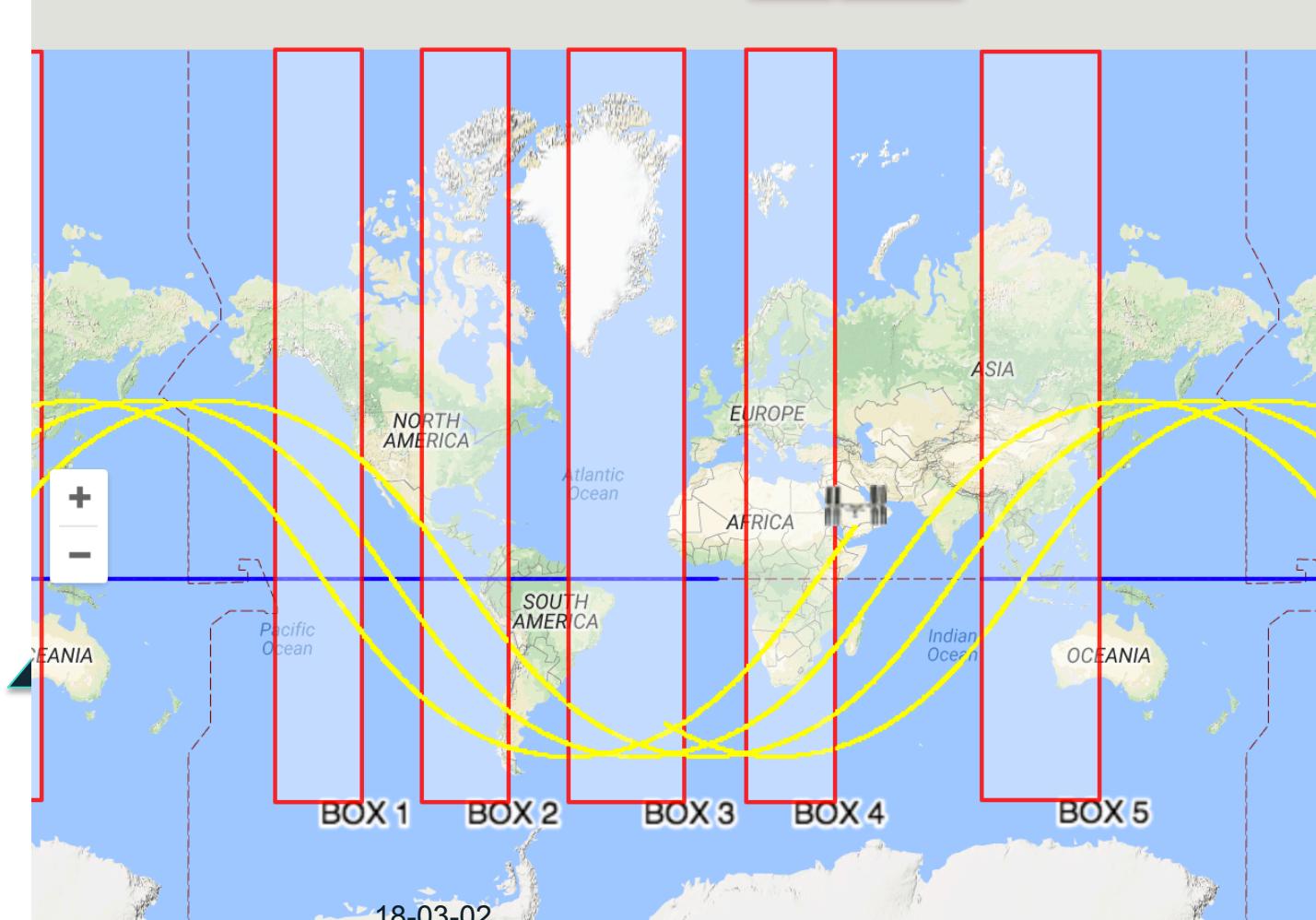
## IBM 3rd session on site Agenda:

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# Longitude and Latitude



# ISS path



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## Monitor ISS over the AREA / turn the candle green and/or change colors

- Go to Dashboard `snp##.mybluemix.net/ui` that displays the position of the Space Station within a Dashboard
  - FYI you and also look at `snp##.mybluemix.net/iss` display just the ISS position
- When the space station is over Boxed area the candle should go red/green
- Change the Color to something else than green like yellow
- If not over the area candle should be off or in a different color

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## Backup/save your code in github.com

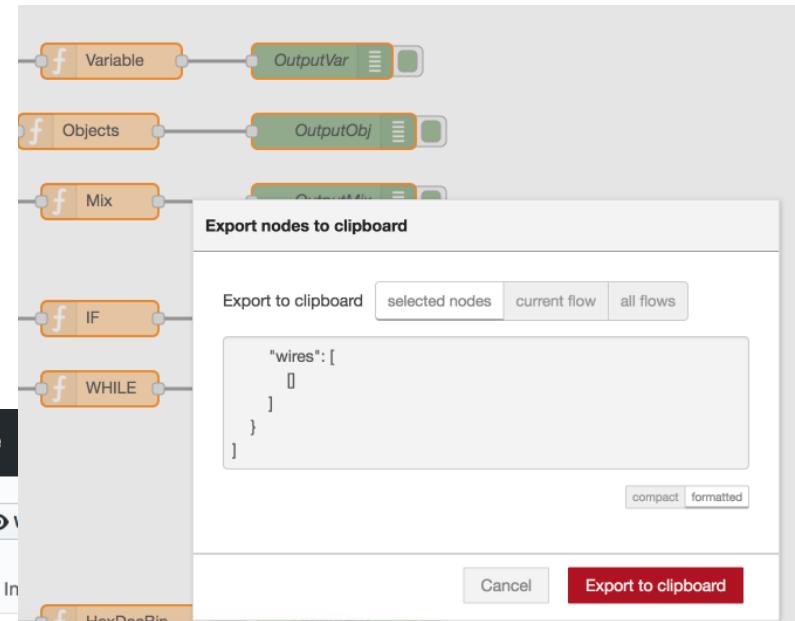
- go to github.com
- Sign in with [????@gmail.com](mailto:????@gmail.com) and password
  - Note: if you done this in the beginning already do not have to do this again
- Export your flow (copy to the clipboard)
- Create a file in github with your group ## number
  - Snp##/ 04-01-IssArea.flow
- Paste your code in (CTRL p)
- Click commit

# Demo

This screenshot shows a GitHub repository page for 'SixNationsPolytechnic / iotcandle'. The user is viewing the file '02-01Variables.flow'. The file content is a flowchart with the following nodes and connections:

- A 'Variable' node connects to an 'OutputVar' node.
- An 'Objects' node connects to an 'OutputObj' node.
- A 'Mix' node connects to an 'OutputMix' node.
- An 'IF' node connects to an 'OutputIF' node.
- A 'WHILE' node connects to an 'OutputWHILE' node.

The GitHub interface includes a navigation bar with 'This repository', 'Search', 'Pull requests', 'Issues', 'Marketplace', and 'Explore' buttons. Below the navigation bar, there are links for 'Code', 'Issues 0', 'Pull requests 0', 'Projects 0', 'Wiki', 'Settings', and 'In'.



# Picture you group number/name to upload your code



**Six Nations  
Polytechnic**  
SixNationsPolytechnic

[https://en.wikipedia.org/wiki/Six\\_Nations\\_Polytechnic](https://en.wikipedia.org/wiki/Six_Nations_Polytechnic)

📍 Brantford, On Canada

🔗 [https://en.wikipedia.org/wiki/...](https://en.wikipedia.org/wiki/)

Overview

Repositories 38

Stars 0

Followers 1

Following 0

Popular repositories

iotcandle

Customize your pinned repositories

snp00

snp-00 - Markus Van Kempen

snp01

snp-01 - Adon

snp02

snp-02 Alanda

snp03

snp-03 Angelina

snp04

snp-04 Braden

115 contributions in the last year

Contribution settings ▾

Nov

Dec

18-03-02

Feb

Mar

Apr

May

Jun

Jul

Aug

Sep

Oct



Create a file and paste your code into that file  
like session3/04-IssArea.flow

The screenshot shows a GitHub repository interface. At the top, there's a navigation bar with links for 'Pull requests', 'Issues', 'Marketplace', and 'Explore'. Below the navigation bar, the repository name 'SixNationsPolytechnic /.snp04' is displayed, along with options to 'Watch' (0), 'Star' (0), and a '+' button. The main navigation menu includes 'Code', 'Issues (0)', 'Pull requests (0)', 'Projects (0)', 'Wiki', 'Insights', and 'Settings'. A search bar at the bottom of the menu bar contains the path 'snp04 / session3 / 04-ISSArea.flow' with a blue outline, and options to 'cancel' or 'or cancel'. Below the menu, there are two tabs: 'Edit new file' and 'Preview'. The preview tab shows a single character '1' in a monospaced font. On the right side of the preview area, there are settings for 'Spaces' (dropdown set to 2), '2' (dropdown set to 2), and 'No wrap'.

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## Setup your gmail account in Node-red

Open a new browser window

Logon to your gmail account

Go to my account then security option

And allow less secure apps see picture next slide

# Personal G-mail account settings

The screenshot shows the 'Sign-in & security' section of the Google Account settings. On the left, there's a sidebar with links like 'Welcome', 'Sign-in & security' (which is selected and highlighted in blue), 'Personal info & privacy', 'Account preferences', 'About Google', and 'Privacy Policy'. The main content area has a blue header 'Apps with account access'. Below it, there's a section titled 'Apps with access to your account' with a 'MANAGE APPS' button. Another section titled 'Saved passwords' says 'You have no synced passwords.' with a 'LEARN MORE' link. At the bottom, there's a toggle switch for 'Allow less secure apps' which is set to 'ON' (indicated by a blue circle). A descriptive text explains that some apps and devices use less secure sign-in technology, which could leave your account vulnerable.

**My Account**

**Sign-in & security**

## Apps with account access

Keep track of which apps or services you gave permission to access your account, and remove the ones you no longer use or trust.

**Apps with access to your account**

Make sure you still use these apps and trust them with your information.

[MANAGE APPS](#)

**Saved passwords**

You have no synced passwords.

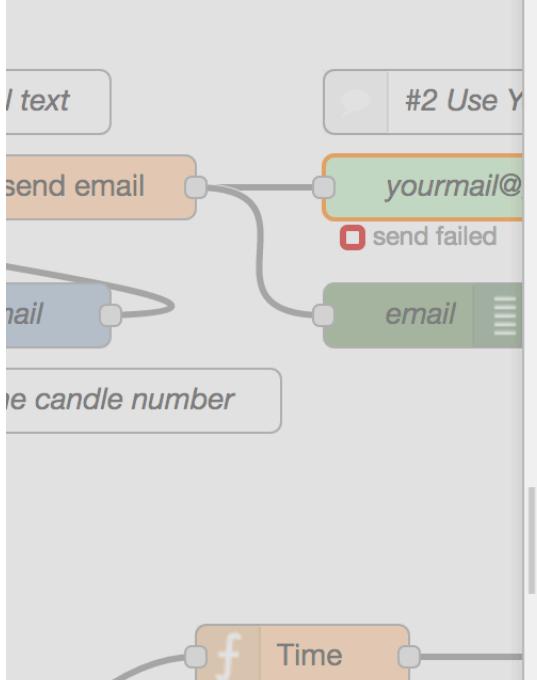
[LEARN MORE](#)

**Allow less secure apps: ON**

Some apps and devices use less secure sign-in technology, which could leave your account vulnerable. You can turn off access for these apps (which we recommend) or choose to use them despite the risks.



Add gmail credentials to your node RED  
Add you gmail email address and password  
Send test email and adjust mail text



Type	
ID	
Inform	
Sends	1
subject	
The def	
configu	
be set i	
incomir	
specify	
Value	

To: yourmail@gmail.com , mvk4ibm@gmail.com

Server: smtp.gmail.com

Port: 465       Use secure connection.

Userid: yourmail@gmail.com

Password:

Name: Name

## Zoom Session – November 28th

Play and discover e.g: Switch the candle color and change the e-mail text  
(play with the logic)

Review the homework

## Homework:

Calculate the speed of the ISS and display it on the Dashboard

Send ME ([mvk4ibm@gmail.com](mailto:mvk4ibm@gmail.com)) and yourself an e-mail when the ISS is within one of the Boxes and the speed and distance of the ISS

December 13<sup>th</sup>

Creating a chat bot with Watson conversation to control the candle





## Markus van Kempen

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