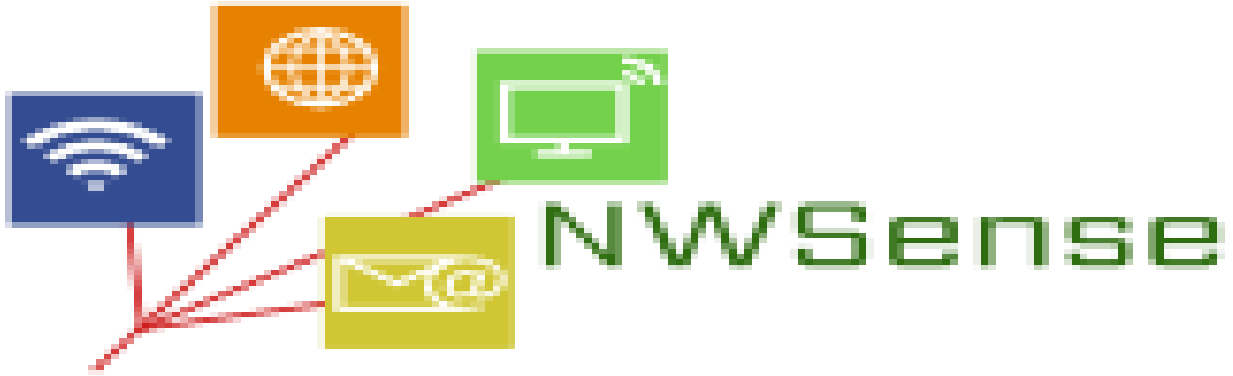
SJSU SAN JOSÉ STATE UNIVERSITY

TEAM 13

CMPE 272
Team Project

-Under the guidance of: Prof. Rakesh Ranjan



- Internet security and control system for home networks.
- Allows the user to monitor the network and block IP addresses or websites which are to be accessed on the network.
- Provide user to see a detailed analysis of what is happening inside the network, e.g., what websites are most visited, what users make the most use of network.

Our Solution

1. We developed a web application for a home owner to control and analyze his home network activities
2. We provided functionality to block websites, MAC address and look at the analytics chart
3. We will provide the user with real time notification for any activity performed

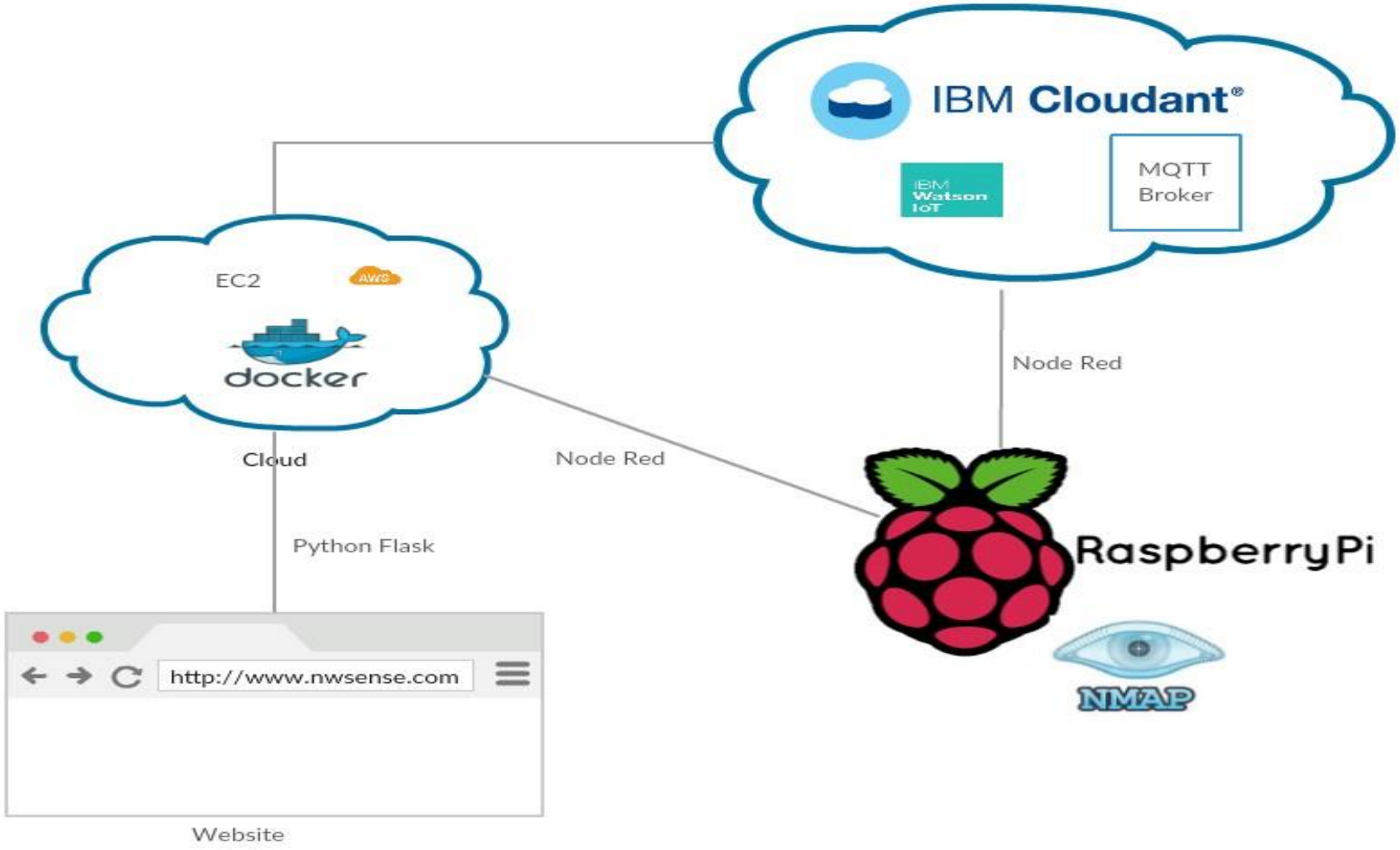
Technologies Used

1. Raspberry Pi - As a proxy server
2. NMAP - For network scanning
3. Node-Red – Communication with RPi
4. Cloudant – Store DB
5. Python, Flask, HTML, CSS, Bootstrap – Dynamic Website Development
6. Apache Spark – For Analysis
7. Twilio – For live notifications
8. Watson IoT Platform
9. Docker – Container
10. AWS – For website deployment

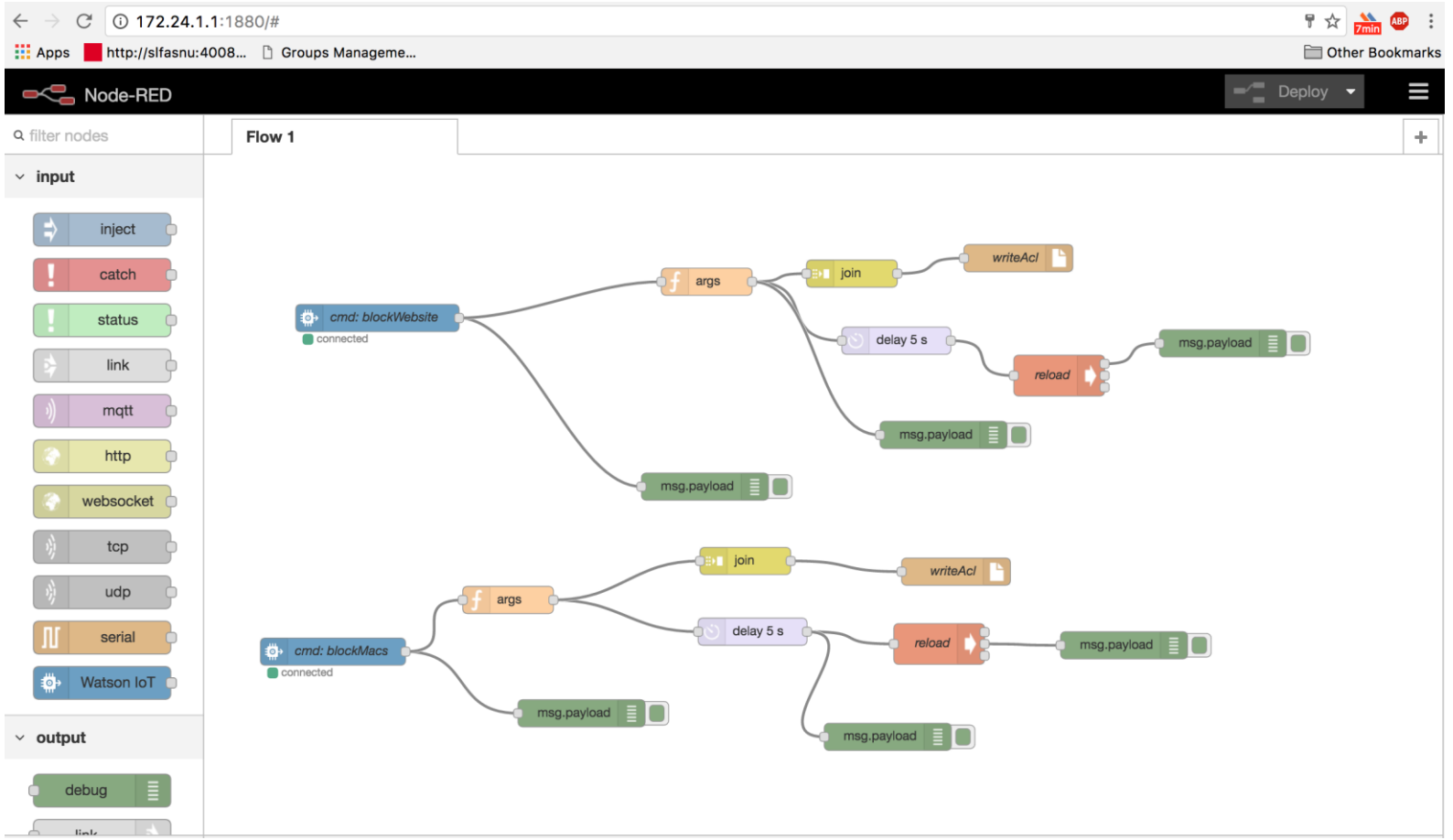
Why RPi3?

- We created a proxy server on a RPi3 so that we could do all the processing on an independent device
- We exposed our RPi3 to act as a Wi-Fi access point to which all home devices will be able to connect.
- We ran 'NMAP' on RPi3 to scan our home network and give all the IPs and their corresponding MAC address.
- We used SQUID- CACHE and Squid-guard to block websites on the network

Architecture Flow



Node-Red Architecture



Team Members:

- Seema Rohilla - 011438817
- Amay Dubey - 011427962
- Shruti Loya - 011427780
- Khoa Le - 009301968


Thank you!