ntuong196 / **AED-Tracking** Private

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ntuong196 Minor fix instruction `8dd9f4c` a minute ago

1 contributor

173 lines (109 sloc) 4.69 KB

QUT AED Tracking

Discription:

Domain: QUT Heath, Safety and Environment (HES)

Project name: AED Tracking

Goal: Implementing the tracking device and monitoring web app for AED kit of QUT HES.

Project components:

Component	Specification	Cost
Sensor	Raspberry Pi 3 Model B + NEO 6M GPS Module	$100
API	NodeJS + MongoDB	Free
Web Application	Node + Express + EJS	Free

Prerequisite: (For Windows Machine)

This prerequisite similar with MacOS and Linux machine.

1. Install Git bash here

For version control and SSH to control the Sensor (Raspberry Pi)

2. Install Node and NPM here

For Web development environment.

Raspberry Pi:

Installation:

Initial configurtion is based on the guide for unit IFB102 of Prof.Paul Roe.

The document can be found in Guide Folder

1. Connect to Raspberry Pi by Internal IP Address.

Open Git Bash installed

```
ssh pi@<RASP_PI_IP_ADDRESS>
```

,eg. `ssh pi@192.168.0.18`

This Internal IP Address can be found by terminal command.

```
ifconfig
```

Find IP Address of the `wlan0` interface.

2. Connect to Raspberry Pi using Putty.

Read the instruction in Guide Folder

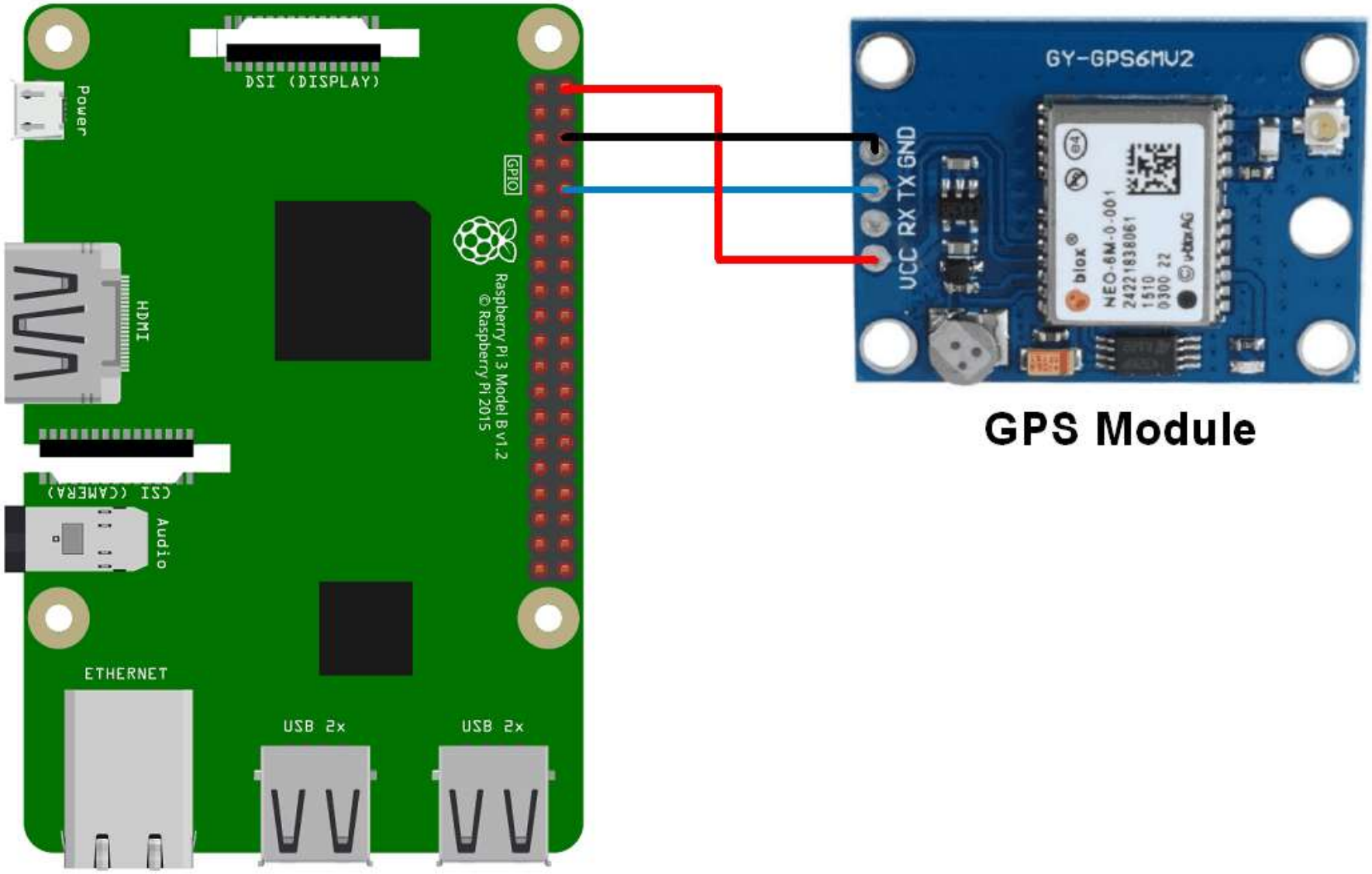
3. Connect to Pi Desktop using HDMI or Ethernet cable.

Read the instruction in here

Open terminal from the Pi

```
sudo apt-get distro-upgrade && sudo apt-get update && sudo apt-get upgrade -y
```

Wiring Raspberry Pi with the GPS Module:



Wiring table:

NEO-6M GPS	Raspberry Pi	Note
VCC	Pin 1	3.3V
TX	Pin 10	RX(GPIO15)
RX	Pin 8	TX(GPIO14)
GND	Pin 6	GND

UART config:

This configration will allows Raspberry Pi reading the data from GPS module.

Open Terminal from the Raspberry Pi

```
sudo raspi-config
```

Go to Advance option -> turn on serial hardware, turn off serial console

Install GPS client software:

Open Terminal from the Raspberry Pi

```
sudo apt-get install gpsd-clients gpsd -y
sudo killall gpsd
sudo nano /etc/default/gpsd
```

then add '/dev/serial0' to DEVICE in gpsd file

```
sudo systemctl enable gpsd.socket
sudo systemctl start gpsd.socket
```

Test gps module with command

```
cgps
```

or `gpsmon`

Remember to terminate those processes to continue the set-up with `CTRL + C`

Clone and Run tracking software:

Clone the software

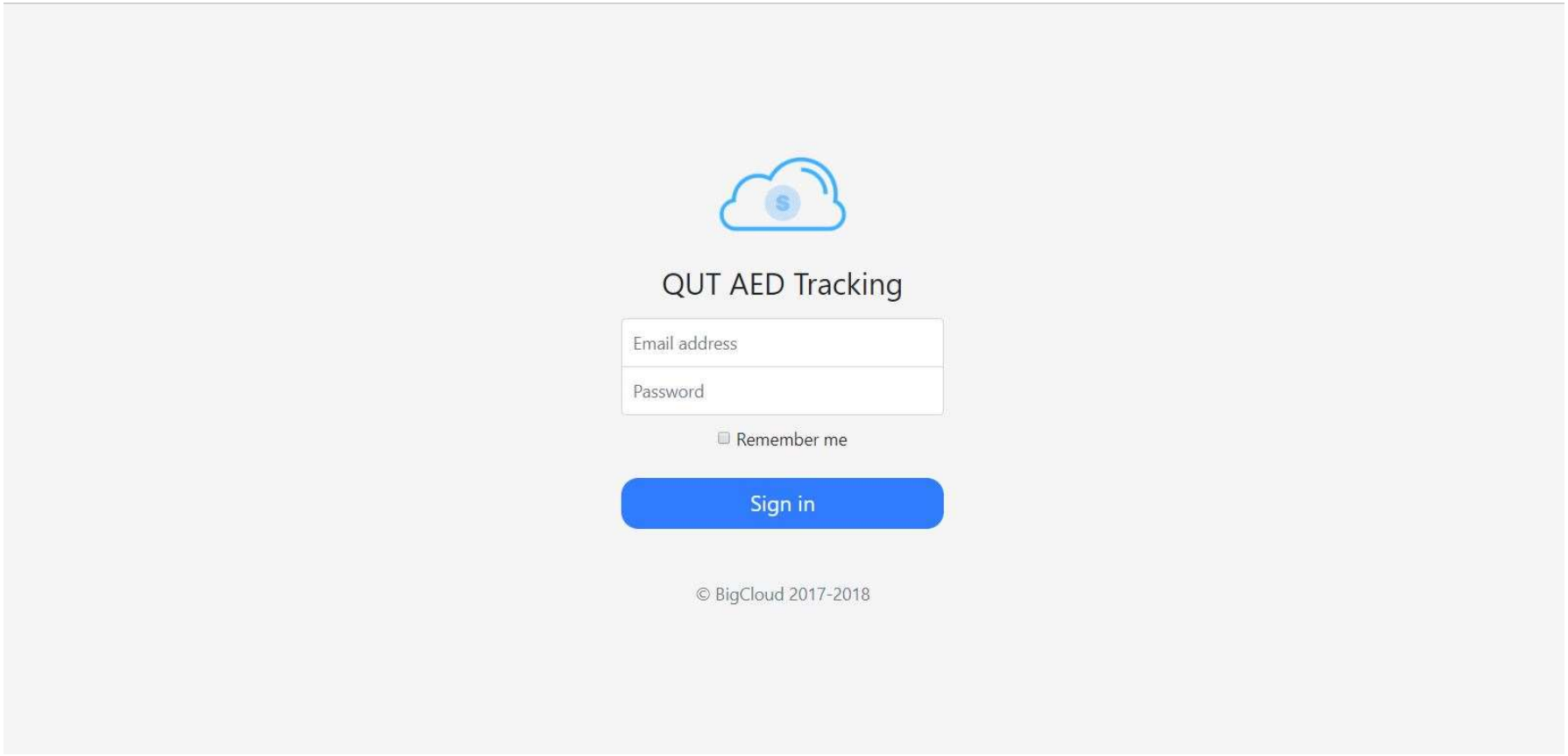
```
git clone https://github.com/ntuong196/aed-tracking`
cd /aed-tracking/RaspberryPi/py_server`
python3 gpsdserver.py
```

NodeJS Server:

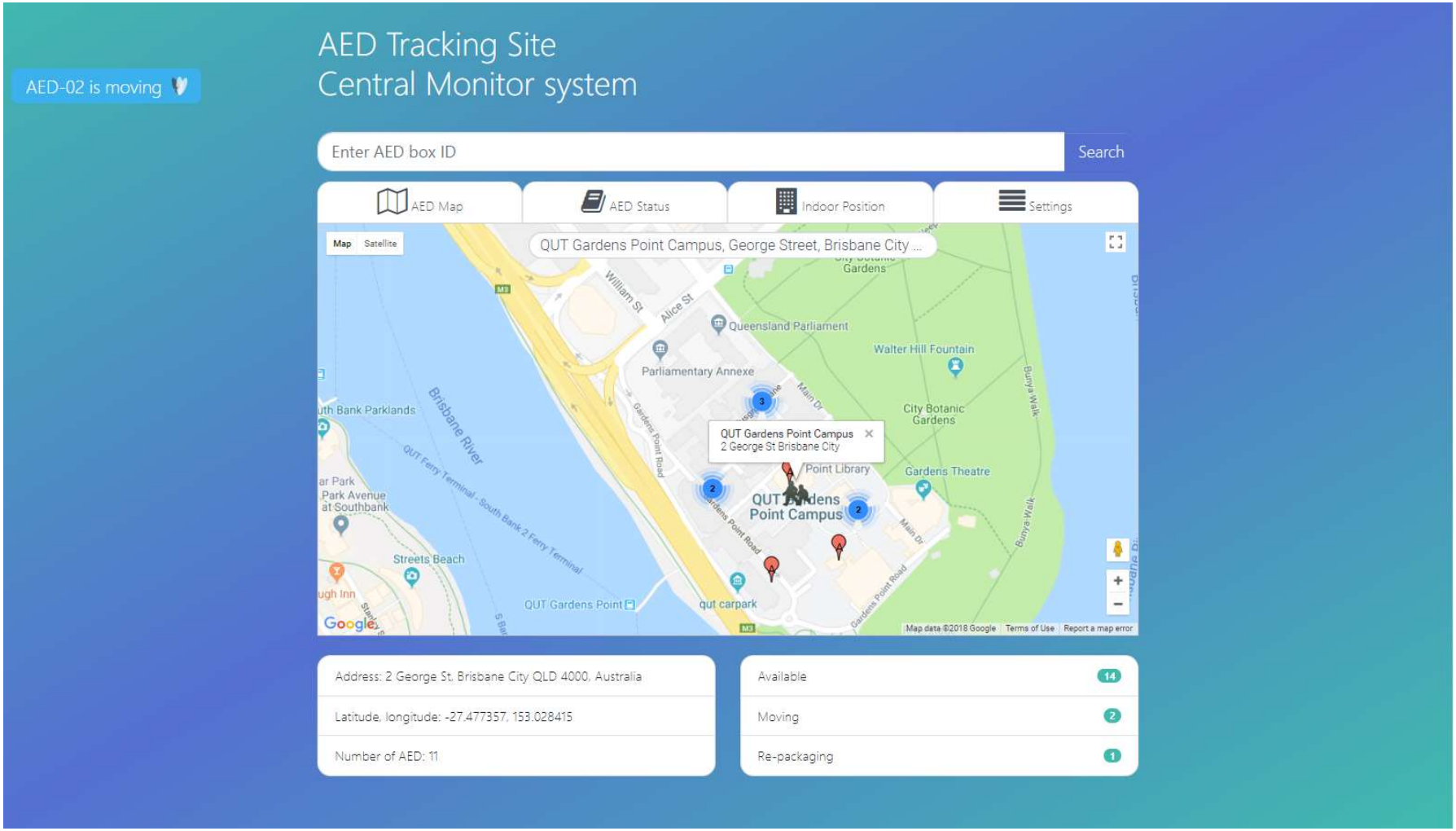
On windows (macOs, linux) machine, open terminal (command line)

```
git clone https://github.com/ntuong196/aed-tracking
cd /aed-tracking/NodeServer
npm install
npm start
```

Open Web browser in address `localhost:3000/` to view the web page.



Login with default username: `n9776001@qut.edu.au` and password: `toor@101`



Additional Control the Sensor:

VNC Server Remote desktop:

```
sudo apt-get remove xrdp vnc4server tightvncserver
sudo apt-get install xrdp -y
```

then enable VNC interface in raspi-config

Download VNC Server

Connect to the Raspberry Pi through External IP Address,eg. `192.168.0.18`