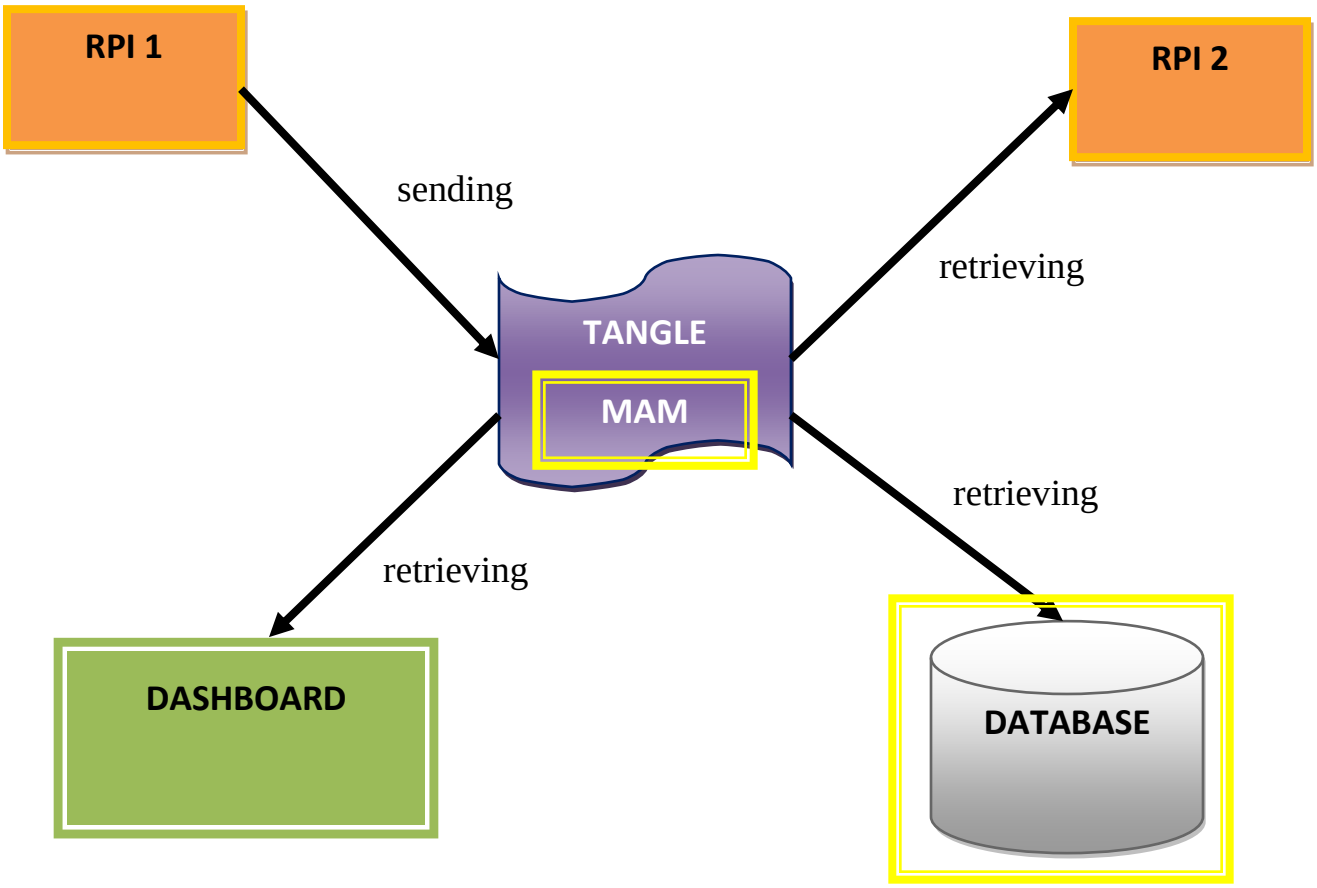
IOTA

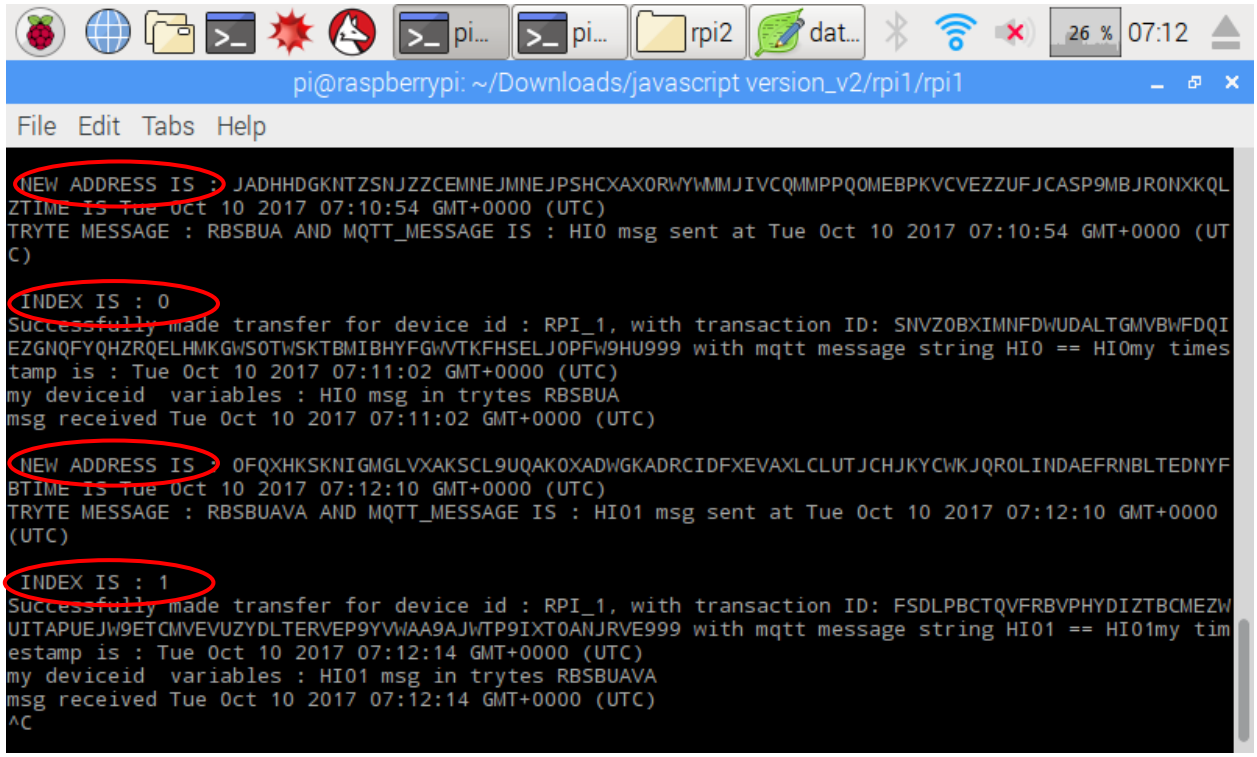
PROJECT CONTINUITY

WORKFLOW



*the ones in yellow boxes are to be followed. Rest are fully functional.

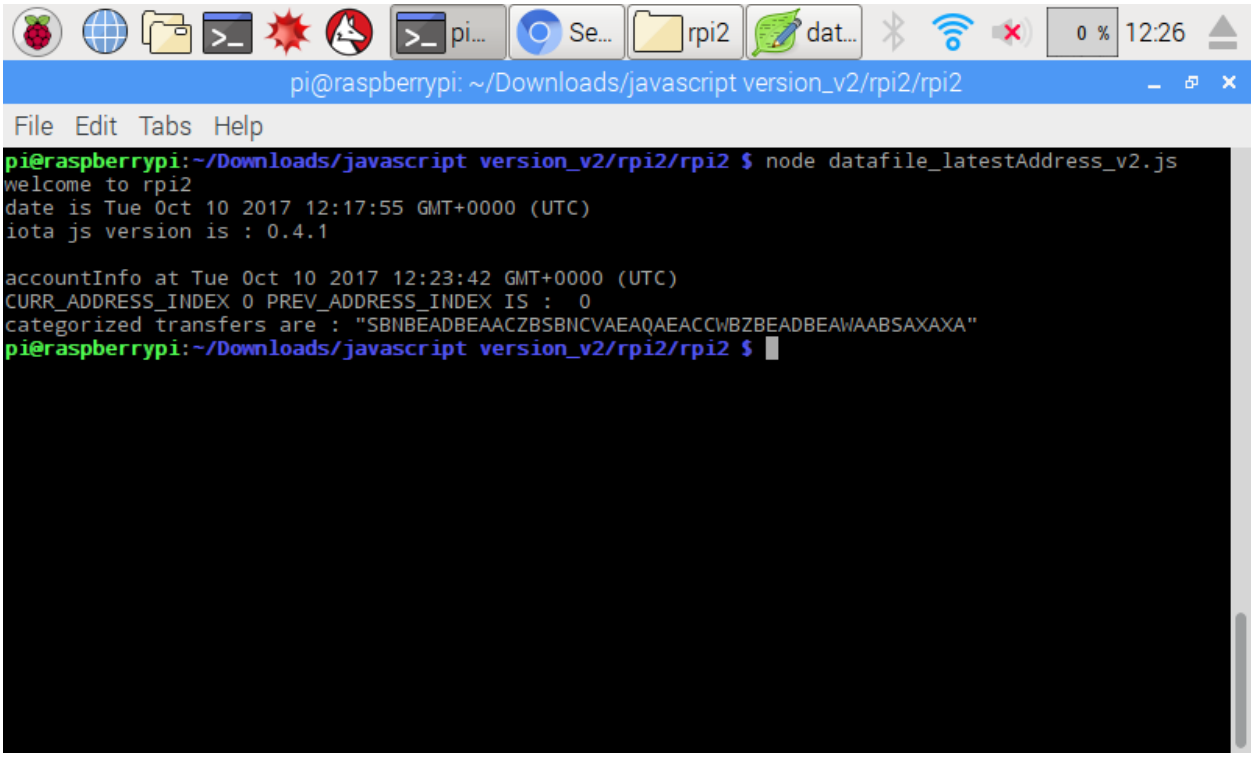
RASPBERRY PI 1



Flow:

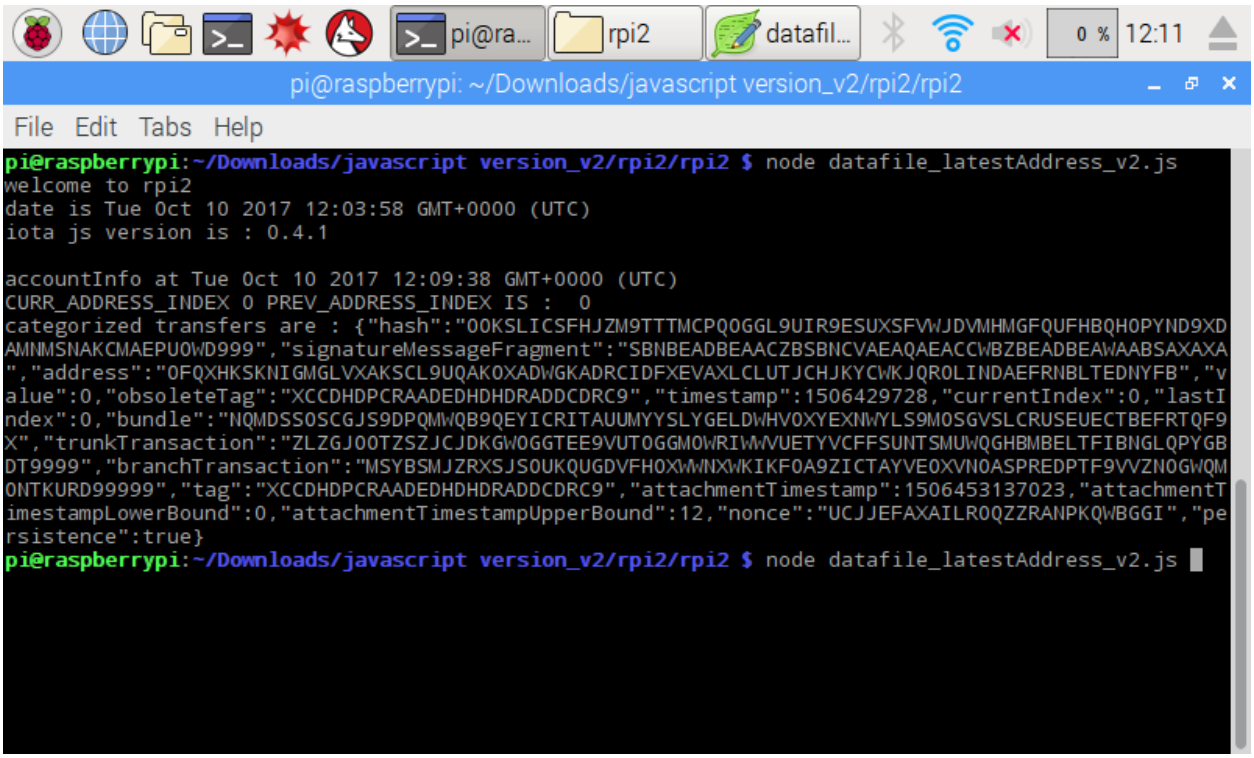
1. We are sending sensor data at a frequency of 1 minute from Raspberry Pi 1 to the IOTA Tangle.
2. After every minute we increment the index to generate a new address for our given seed (Seed 1 belong to RPI 1). This maintains the security of our messages in the tangle.

RASPBERRY PI 2



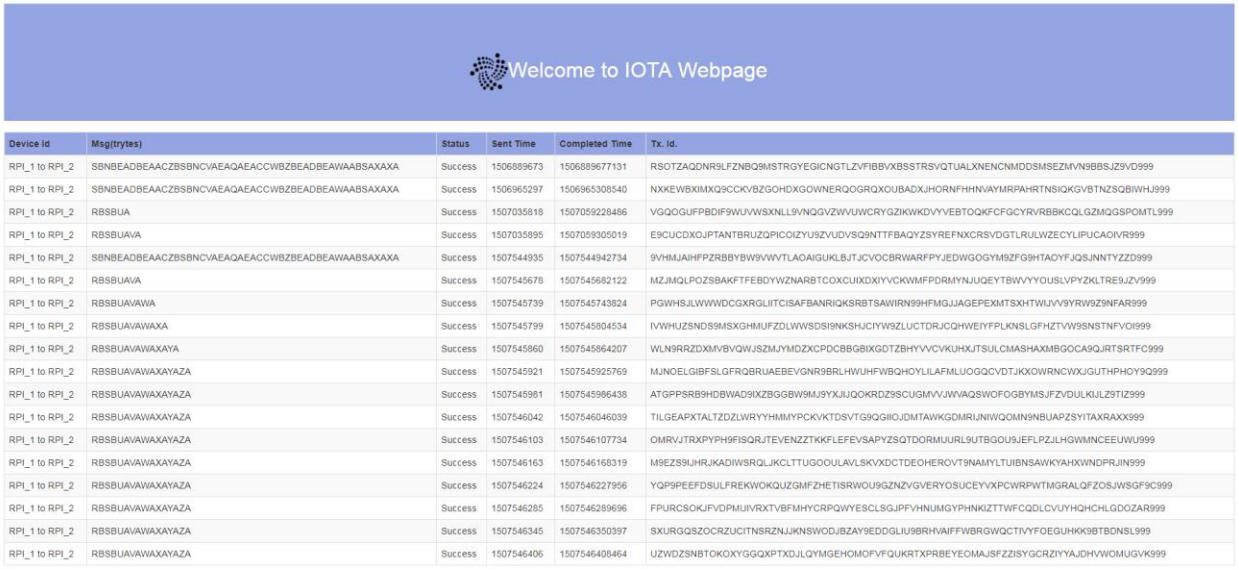
Flow:

1. We retrieve data from the tangle every minute.
2. Here I am retrieving the messages(in trytes) only if the current and previous addresses are different . That is , I am only capturing messages if addresses are different.



**Also attached is the screenshot of all the information that we obtain from the tangle for every index

DASHBOARD



Device Id	Msg(trytes)	Status	Sent Time	Completed Time	Tx. Id.
RPI_1 to RPI_2	SBNBEADBEAACZBSBNCVAEAQAEACCWBZBEADBEAWAABSAXAXA	Success	1506889673	1506889677131	RSOTZAQDNR9LFZNBQ9MSTRGYEGICNGTLZVFIBBVXBSSTRSVQTUALXNENCNMDDSMSEZMVN9BBSJZ9VD999
RPI_1 to RPI_2	SBNBEADBEAACZBSBNCVAEAQAEACCWBZBEADBEAWAABSAXAXA	Success	1506965297	1506965308540	NXKEWBXIMXQ9CCKVBZGOHDXGOWNERQOGRQXOUBADXJHORNFHHNVAYMRPAHRTNSIQKGVBTNZSQBIWHJ999
RPI_1 to RPI_2	RBSBUA	Success	1507035818	1507059228486	VGQOGUFPBDIF9WUVWSXNLL9VNQGVZWVUWCRYGZIKWKDVYVEBTOQKFCFGCYRVRBBKCQLGZMQGSPOMTL999
RPI_1 to RPI_2	RBSBUAVA	Success	1507035895	1507059305019	E9CUCDXOJPTANTBRUZQPICOIZYU9ZVUDVSQ9NTTFBAQYZSYREFNXCRSVDGTLRULWZECYLIPUCAOIVR999
RPI_1 to RPI_2	SBNBEADBEAACZBSBNCVAEAQAEACCWBZBEADBEAWAABSAXAXA	Success	1507544935	1507544942734	9VHMJAIHFPZRBBYBW9VWVTLAOAIGUKLBJTJCVOCBRWARFPYJEDWGOGYM9ZFG9HTAOYFJQSJNNTYZZD999
RPI_1 to RPI_2	RBSBUAVA	Success	1507545678	1507545682122	MZJMQLPOZSBAKFTFEBDYWZNARBTCOXCUIXDXIYVCKWMFPDRMYNJUQEYTBWVYYOUSLVPYZKLTRE9JZV999
RPI_1 to RPI_2	RBSBUAVAWA	Success	1507545739	1507545743824	PGWHSJLWWWDCGXRGLIITCISAFBANRIQKSRBTSAWIRN99HFMGJJAGEPEXMTSXHTWIJVV9YRW9Z9NFAR999
RPI_1 to RPI_2	RBSBUAVAWAXA	Success	1507545799	1507545804534	IVWHUZSNDS9MSXGHMUFZDLWWSDSI9NKSHJCIYW9ZLUCTDRJCQHWEIYFPLKNSLGFHZTVW9SNSTNFVOI999
RPI_1 to RPI_2	RBSBUAVAWAXAYA	Success	1507545860	1507545864207	WLN9RRZDXMVBVQWJSZMJYMDZXCPDCBBGBIXGDTZBHYVVCVKUHXJTSULCMASHAXMBGOCA9QJRTSRTFC999
RPI_1 to RPI_2	RBSBUAVAWAXAYAZA	Success	1507545921	1507545925769	MJNOELGIBFSLGFRQBRUAEBEVGNR9BRLHWUHFWBQHOYLILAFMLUOGQCVDTJKXOWRNCWXJGUTHPHOY9Q999
RPI_1 to RPI_2	RBSBUAVAWAXAYAZA	Success	1507545981	1507545986438	ATGPPSRB9HDBWAD9IXZBGGBW9MJ9YXJIJQOKRDZ9SCUGMVVJWVAQSWOFOGBYMSJFZVDULKIJLZ9TIZ999
RPI_1 to RPI_2	RBSBUAVAWAXAYAZA	Success	1507546042	1507546046039	TILGEAPXTALTZDZLWRYYHMMYPCKVKTDSVTG9QGIIOJDMTAWKGDMRIJNIWQOMN9NBUAPZSYITAXRAXX999
RPI_1 to RPI_2	RBSBUAVAWAXAYAZA	Success	1507546103	1507546107734	OMRVJTRXPYPH9FISQRJTEVENZZTKKFLEFEVSAPYZSQTDORMUURL9UTBGOU9JEFLPZJLHGWMNCEEUWU999
RPI_1 to RPI_2	RBSBUAVAWAXAYAZA	Success	1507546163	1507546168319	M9EZS9IJHRJKADIWSRQLJKCLTTUGOOULAVLSKVXDCTDEOHEROVT9NAMYLTUIBNSAWKYAHXWNDPRJIN999
RPI_1 to RPI_2	RBSBUAVAWAXAYAZA	Success	1507546224	1507546227956	YQP9PEEFDSULFREKWOKQUZGMFZHETISRWOU9GZNZVGVERYOSUCEYVXPCWRPWTMGRALQFZOSJWSGF9C999
RPI_1 to RPI_2	RBSBUAVAWAXAYAZA	Success	1507546285	1507546289696	FPURCSOKJFVDPMUIVRXTVBFMHYCRPQWYESCLSGJPFVHNUMGYPHNKIZTTWFCQDLCVUYHQHCHLGDOZAR999
RPI_1 to RPI_2	RBSBUAVAWAXAYAZA	Success	1507546345	1507546350397	SXURGQSZOCRZUCITNSRZNJJKNSWODJBZAY9EDDGLIU9BRHVAIFFWBRGWQCTIVYFOEGUHKK9BTBDNSL999
RPI_1 to RPI_2	RBSBUAVAWAXAYAZA	Success	1507546406	1507546408464	UZWDZSNBTOKOXYGGQXPTXDJLQYMGEHOMOFVFQUKRTXPRBEYEOMAJSFZZISYGCRZIYYAJDHVWOMUGVK999

Currently, the dashboard is a web service running at localhost. It can later be hosted on Heroku or Azure VM.

Flow:

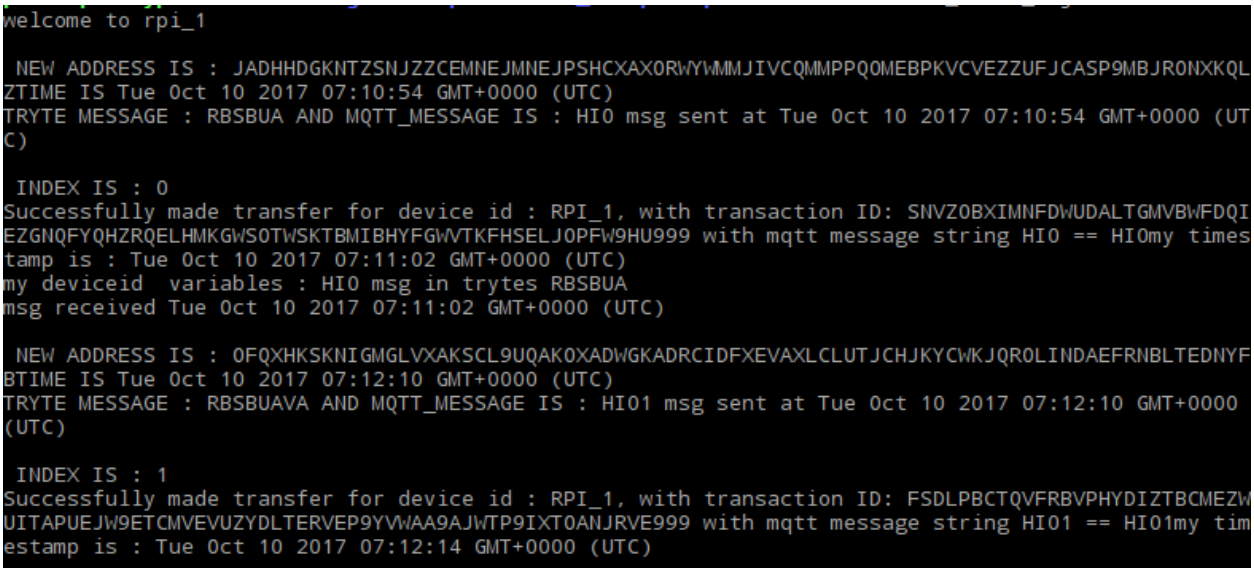
1. We retrieve data from the tangle every minute.
2. Here I am retrieving data only if the current and previous addresses are different. That is, I am only capturing messages if addresses are different.
3. I am retrieving the following :
    a. Device id , i.e., “RPI 1 to RPI 2”
    b. Message in trytes (retrieved from Tangle)
    c. Status of our transaction: “success” or “failure” . It’s a success if a tx. Hash is present in the transfer that is being retrieved
    d. Timestamp at which the bundle was sent to the tangle
    e. Timestamp at which the bundle was attached to the tangle
    f. Tx hash/ Tx. Id

SET UP DETAILS:

RPI 1:

1. Install node js on your raspberry pi
2. Cd to rpi1
3. Iota.lib.js is already present , so no extra installations are required
4. Perform a “node datafile_rpi1.js” to start the js application for pushing the temperature and id information from rpi1 to the tangle.
5. We can see the tx and indexes generated on the console window.

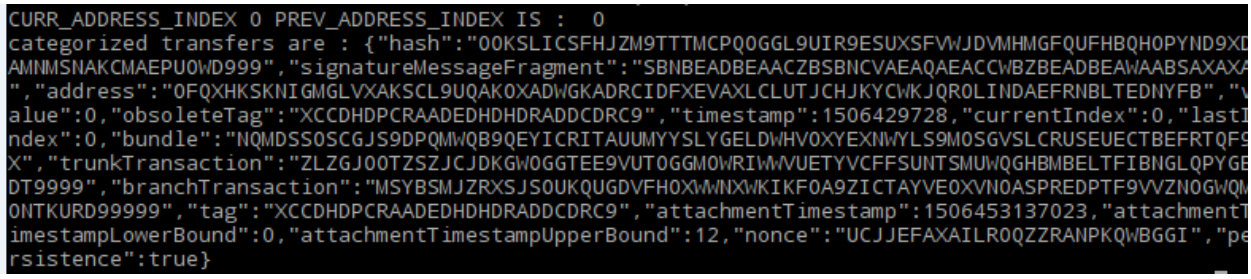
Something like this :



RPI 2:

1. Install node js on your raspberry pi
2. Cd to rpi2
3. Iota.lib.js is already present , so no extra installations are required
4. Perform a “node datafile_rpi2.js ” to start the js application for retrieving the temperature and id message from the tangle.
5. We can see the current address index along with the message(in trytes) from the tangle

Something like this :



DASHBOARD :

1. Install nodejs on your system.
2. Cd to dashboard_new_gui
3. Perform a “npm install” to install all dependencies in package.json
4. Perform “npm start” on this directory. (runs datafile.js)
5. The service has started on “http://localhost:8882” (set in app.js)

We get something like this :

Device id	Msg(trytes)	Status	Sent Time	Completed Time	Tx. Id.
RPI_1 to RPI_2	SBNBEADBEAACZBSBNCVAEAQAEACCWBZBEADBEAWAABSAXAXA	Success	1506889673	1506889677131	RSOTZAQDNR9LFZNBQ9MSTRGYEGICNGTLZVFIBBVXBSSTRSVQTUALXNENCNMDDSMSEZMVN9BBSJZ9VD999
RPI_1 to RPI_2	SBNBEADBEAACZBSBNCVAEAQAEACCWBZBEADBEAWAABSAXAXA	Success	1506965297	1506965308540	NXKEWBXIMXQ9CCKVBZGOHDXGOWNERQOGRQXOUBADXJHORNFHHNVAYMRPAHRTNSIQKGVBTNZSQBIWHJ999
RPI_1 to RPI_2	RBSBUA	Success	1507035818	1507059228486	VGQOGUFPBDIF9WUVWSXNLL9VNQGVZWVUWCRYGZIKWKDVYVEBTOQKFCFGCYRVRBBKCQLGZMQGSPOMTL999
RPI_1 to RPI_2	RBSBUAVA	Success	1507035895	1507059305019	E9CUCDXOJPTANTBRUZQPICOIZYU9ZVUDVSQ9NTTFBAQYZSYREFNXCRSVDGTLRULWZECYLIPUCAOIVR999
RPI_1 to RPI_2	SBNBEADBEAACZBSBNCVAEAQAEACCWBZBEADBEAWAABSAXAXA	Success	1507544935	1507544942734	9VHMJAIHFPZRBBYBW9VWVTLAOAIGUKLBJTJCVOCBRWARFPYJEDWGOGYM9ZFG9HTAOYFJQSJNNTYZZD999
RPI_1 to RPI_2	RBSBUAVA	Success	1507545678	1507545682122	MZJMQLPOZSBAKFTFEBDYWZNARBTCOXCUIXDXIYVCKWMFPDRMYNJUQEYTBWVYYOUSLVPYZKLTRE9JZV999
RPI_1 to RPI_2	RBSBUAVAWA	Success	1507545739	1507545743824	PGWHSJLWWWDCGXRGLIITCISAFBANRIQKSRBTSAWIRN99HFMGJJAGEPEXMTSXHTWIJVV9YRW9Z9NFAR999
RPI_1 to RPI_2	RBSBUAVAWAXA	Success	1507545799	1507545804534	IVWHUZSNDS9MSXGHMUFZDLWWSDSI9NKSHJCIYW9ZLUCTDRJCQHWEIYFPLKNSLGFHZTVW9SNSTNFVOI999
RPI_1 to RPI_2	RBSBUAVAWAXAYA	Success	1507545860	1507545864207	WLN9RRZDXMVBVQWJSZMJYMDZXCPDCBBGBIXGDTZBHYVVCVKUHXJTSULCMASHAXMBGOCA9QJRTSRTFC999
RPI_1 to RPI_2	RBSBUAVAWAXAYAZA	Success	1507545921	1507545925769	MJNOELGIBFSLGFRQBRUAEBEVGNR9BRLHWUHFWBQHOYLILAFMLUOGQCVDTJKXOWRNCWXJGUTHPHOY9Q999
RPI_1 to RPI_2	RBSBUAVAWAXAYAZA	Success	1507545981	1507545986438	ATGPPSRB9HDBWAD9IXZBGGBW9MJ9YXJIJQOKRDZ9SCUGMVVJWVAQSWOFOGBYMSJFZVDULKIJLZ9TIZ999
RPI_1 to RPI_2	RBSBUAVAWAXAYAZA	Success	1507546042	1507546046039	TILGEAPXTALTZDZLWRYYHMMYPCKVKTDSVTG9QGIIOJDMTAWKGDMRIJNIWQOMN9NBUAPZSYITAXRAXX999
RPI_1 to RPI_2	RBSBUAVAWAXAYAZA	Success	1507546103	1507546107734	OMRVJTRXPYPH9FISQRJTEVENZZTKKFLEFEVSAPYZSQTDORMUURL9UTBGOU9JEFLPZJLHGWMNCEEUWU999
RPI_1 to RPI_2	RBSBUAVAWAXAYAZA	Success	1507546163	1507546168319	M9EZS9IJHRJKADIWSRQLJKCLTTUGOOULAVLSKVXDCTDEOHEROVT9NAMYLTUIBNSAWKYAHXWNDPRJIN999
RPI_1 to RPI_2	RBSBUAVAWAXAYAZA	Success	1507546224	1507546227956	YQP9PEEFDSULFREKWOKQUZGMFZHETISRWOU9GZNZVGVERYOSUCEYVXPCWRPWTMGRALQFZOSJWSGF9C999
RPI_1 to RPI_2	RBSBUAVAWAXAYAZA	Success	1507546285	1507546289696	FPURCSOKJFVDPMUIVRXTVBFMHYCRPQWYESCLSGJPFVHNUMGYPHNKIZTTWFCQDLCVUYHQHCHLGDOZAR999
RPI_1 to RPI_2	RBSBUAVAWAXAYAZA	Success	1507546345	1507546350397	SXURGQSZOCRZUCITNSRZNJJKNSWODJBZAY9EDDGLIU9BRHVAIFFWBRGWQCTIVYFOEGUHKK9BTBDNSL999
RPI_1 to RPI_2	RBSBUAVAWAXAYAZA	Success	1507546406	1507546408464	UZWDZSNBTOKOXYGGQXPTXDJLQYMGEHOMOFVFQUKRTXPRBEYEOMAJSFZZISYGCRZIYYAJDHVWOMUGVK999