

Internet Of Things

Lab - 8

Aadhitya Swarnesh



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Aim :

To retrieve and store information from and to a local database with the help of Node-RED and design a form to receive entries to store into the database, and display it using the Node-red dashboard by using the concepts of IoT.

Software :

Node-Red Software.

Methodology :

This video instructions are followed : <https://www.youtube.com/watch?v=OP0yUqXFbcQ>

Simulation And Output :

1) To retrieve and display data from a database

(1.1) HTTP node

(1.2) ALASQL node

Edit alafile in node

Delete Cancel Done

Properties

Name of node

Name of file
(without extension)

</> Format

Columns

First row must contain column names ☒

(1.3) HTTP Response node

Edit http response node

Delete Cancel Done

Properties

Name

Status code

(1.4) Debug node

Edit debug node

Delete Cancel Done

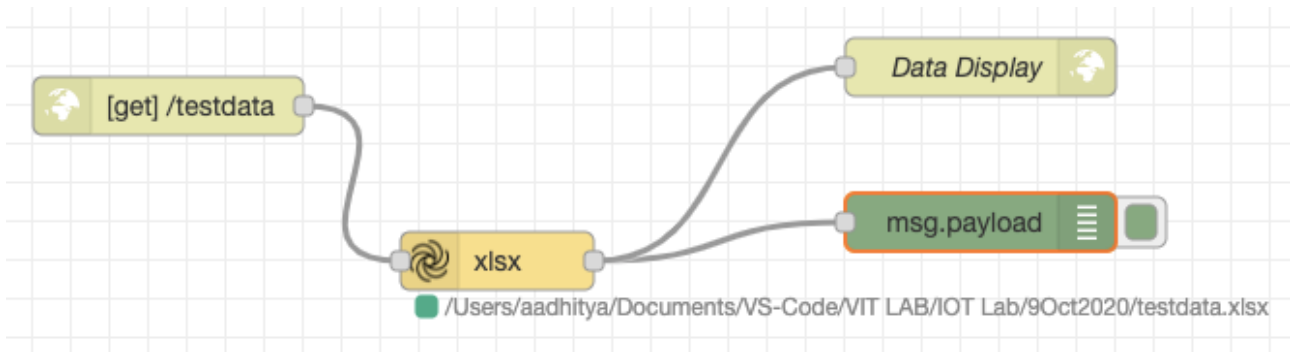
Properties

Output

To ☒ debug window
☐ system console
☐ node status (32 characters)

Name

(1.5) Complete Circuit Flow



(1.6) Output

```
localhost:1880/testdata

[{"Product Serial ":1,"Product ID":"18PID1023","Product Count":7,"Rate ":105}, {"Product Serial ":2,"Product ID":"18PID1029","Product Count":20,"Rate ":300}, {"Product Serial ":3,"Product ID":"18PID1032","Product Count":37,"Rate ":555}, {"Product Serial ":4,"Product ID":"18PID1033","Product Count":20,"Rate ":300}, {"Product Serial ":5,"Product ID":"18PID1034","Product Count":10,"Rate ":150}, {"Product Serial ":6,"Product ID":"18PID1035","Product Count":16,"Rate ":240}, {"Product Serial ":7,"Product ID":"18PID1038","Product Count":16,"Rate ":240}, {"Product Serial ":8,"Product ID":"18PID1039","Product Count":25,"Rate ":375}, {"Product Serial ":9,"Product ID":"18PID1040","Product Count":30,"Rate ":450}, {"Product Serial ":10,"Product ID":"18PID1056","Product Count":7,"Rate ":105}, {"Product Serial ":11,"Product ID":"18PID1058","Product Count":31,"Rate ":465}, {"Product Serial ":12,"Product ID":"18PID1059","Product Count":30,"Rate ":450}, {"Product Serial ":13,"Product ID":"18PID1060","Product Count":7,"Rate ":105}, {"Product Serial ":14,"Product ID":"18PID1063","Product Count":30,"Rate ":450}, {"Product Serial ":15,"Product ID":"18PID1066","Product Count":35,"Rate ":525}, {"Product Serial ":16,"Product ID":"18PID1067","Product Count":18,"Rate ":270}, {"Product Serial ":17,"Product ID":"18PID1068","Product Count":10,"Rate ":150}, {"Product Serial ":18,"Product ID":"18PID1069","Product Count":16,"Rate ":240}]

20/10/2020, 22:50:26 node: f93b47cf.19eef8
msg.payload : array[18]
  ▾ array[18]
    ▾ [0 ... 9]
      ▾ 0: object
        Product Serial : 1
        Product ID: "18PID1023"
        Product Count: 7
        Rate : 105
      ▸ 1: object
      ▸ 2: object
      ▸ 3: object
      ▸ 4: object
      ▸ 5: object
      ▸ 6: object
      ▸ 7: object
      ▸ 8: object
      ▸ 9: object
      ▸ [10 ... 17]
```

Edit form node

Delete Cancel Done

Properties

- Group: [College] Personal Details
- Size: auto
- Label: optional label

	Label	Name	Type	Required	Rows	Remove
≡	Registration Num	Regno	Text	<input checked="" type="checkbox"/>		
≡	Name	Name	Text	<input checked="" type="checkbox"/>		
≡	Mobile	Mobile	Number	<input type="checkbox"/>		
≡	Email	email	E-mail	<input type="checkbox"/>		

+ element

- Buttons: submit cancel
- Topic: optional msg.topic

(2.2) ALASQL node

Edit alafile in node

Delete Cancel Done

Properties

Name of node

Name of file
(without extension)

</> Format

Columns

First row must contain column names ☒

Tip: You should fully path the Filename.

(2.3) Debug node

Edit debug node

Delete Cancel Done

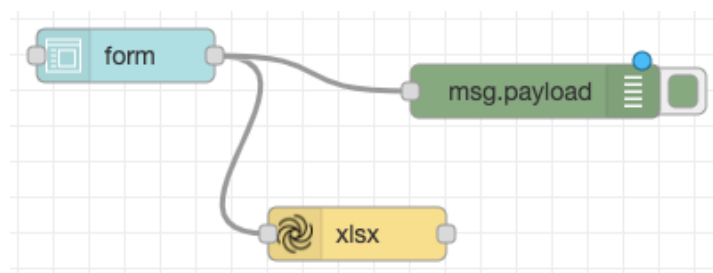
Properties

Output

To ☒ debug window
☐ system console
☐ node status (32 characters)

Name

(2.4) Complete Circuit Flow



(2.5) Node-Red UI Dashboard

College

Personal Details

Registration Number *

Name *

Mobile

Email

SUBMIT

CANCEL

(2.6) Output

Personal Details

Registration Number *
18BCE1087

Name *
Aadhitya

Mobile
90435

Email
jfcjsld@dsfnk.com

SUBMIT

CANCEL

20/10/2020, 23:09:09 node: f784a99b.507e08

msg.payload : Object

```
▶ { Regno: "18BCE1087", Name: "Aadhitya", Mobile: 90435, email: "jfcjsld@dsfnk.com" }
```

3) Complete Flow Code

```
[{"id":"84c45e74.bf407","type":"tab","label":"Retrieving data from Local database Lab 8","disabled":false,"info":"","{ "id":"75fd569c.a94d58","type":"http in","z":"84c45e74.bf407","name":"","url":"/testdata","method":"get","upload":false,"swaggerDoc":"","x":150,"y":100,"wires":[["993bbc17.05381"]]}, {"id":"6b4f8b34.87a484","type":"http response","z":"84c45e74.bf407","name":"Data Display","statusCode":"","headers":{},"x":570,"y":80,"wires":[]}, {"id":"f93b47cf.19eef8","type":"debug","z":"84c45e74.bf407","name":"","active":true,"tosidebar":true,"console":false,"tostatus":false,"complete":"payload","targetType":"msg","statusVal":"","statusType":"auto","x":570,"y":160,"wires":[]}, {"id":"993bbc17.05381","type":"alafile in","z":"84c45e74.bf407","name":"","filename":"/Users/aadhitya/Documents/Vs-Code/VIT LAB/IOT Lab/9Oct2020/testdata","format":"xlsx","columns":"","headers":true,"x":320,"y":180,"wires":[["f93b47cf.19eef8","6b4f8b34.87a484"]]}, {"id":"6af9cc07.854fc4","type":"alafile in","z":"84c45e74.bf407","name":"","filename":"/Users/aadhitya/Documents/Vs-Code/VIT LAB/IOT Lab/9Oct2020/testdata","format":"xlsx","columns":"","headers":true,"x":310,"y":480,"wires":[[]]}, {"id":"50d979c3.5f1bc8","type":"ui_form","z":"84c45e74.bf407","name":"","label":"","group":"11faacd5.8521a3","order":0,"width":0,"height":0,"options":[{"label":"Registration Number","value":"Regno","type":"text","required":true,"rows":null}, {"label":"Name","value":"Name","type":"text","required":true,"rows":null}, {"label":"Mobile","value":"Mobile","type":"number","required":false,"rows":null}, {"label":"Email","value":"email","type":"email","required":false,"rows":null}], "formValue":{"Regno":"","Name":"","Mobile":"","email":""},"payload":"","submit":"submit","cancel":"cancel","topic":"","x":180,"y":380,"wires":[["6af9cc07.854fc4","f784a99b.507e08"]]}, {"id":"f784a99b.507e08","type":"debug","z":"84c45e74.bf407","name":"","active":true,"tosidebar":true,"console":false,"tostatus":false,"complete":"payload","targetType":"msg","statusVal":"","statusType":"auto","x":410,"y":400,"wires":[]}, {"id":"11faacd5.8521a3","type":"ui_group","z":"","name":"Personal Details","tab":"de3976af.2e6cd8","order":1,"disp":true,"width":"6","collapse":false}, {"id":"de3976af.2e6cd8","type":"ui_tab","z":"","name":"College","icon":"dashboard","disabled":false,"hidden":false}]
```

Result :

Thus, with the help of Node-RED we have taken an input data from a form and processed and stored it into a local database using Node Red and have put it to practical use. We have also designed an API view to retrieve all the data stored inside the local database.