

# **Production Supporting Systems in Factories**

**ระบบสนับสนุนการผลิตในโรงงานอุตสาหกรรม**

# Cloud database

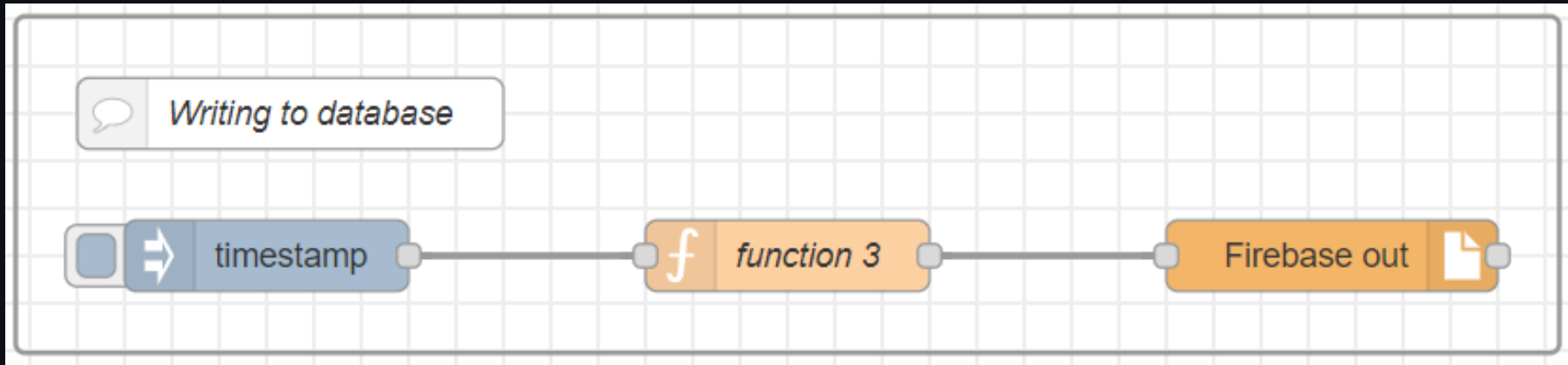
## Setup `node-red`

- Install `node-red-contrib-cloud-firestore`

# Setup database

- Go to [Google Firebase](#).
- Create new project.
- Create `firestore database`.
- Obtain a service-account `json`.

# **M6-1: Writing to database**



## function node

```
const timestamp = new Date().getTime();  
const value = Math.random();  
msg.payload = {  
  value: value,  
  timestamp: timestamp,  
};  
return msg;
```

**firebase out node**



- Input service account data.

Edit Firestore out node > **Edit firebase admin node**

Delete Cancel Update

**Properties**

Provide contents of the service account file

Name Prodsup

Service Account Json


```
{
  "type": "service_account",
  "project_id": "prodsup-lecture",
  "private_key_id":
    "4c1169aabd63227e44efff14348bcff63a9227aa",
  "private_key": "-----BEGIN PRIVATE KEY-----
\nMIIEvwIBADANBgkqhkiG9w0BAQEFAASCBBKk
wggSIAgEAAoIBAQDm1BHg7r3kBVf9\nQ4QViZh
285EtVYB0tnLpQMy+67RHmgI//wF4tQ2W8vcrW
HWT9Vku5SXNdFsGJQOS\nR0oW72SwjHx+5Z9
PBNFQXe/qvAZycmhjxx57kRNmPiP+5MKtCps5
OuEHjQxZhGA9\nTrsyET6kG/J45x5VsQJD+qe2x
4lirwSI7wboAuWCSFptLpr5gMS6i6TAQkpP4Lso\
nSyPul+tXK9vYSNPpGA55JU65M26ZxckVoyJv+
xibGkMsnLalODiYKLI\nbiAna1d4\n4zt1n6feGOs
```

- Operation: Add
- Collection: data


### Edit Firestore out node

Delete Cancel Done

#### ⚙ Properties

⚙ Admin Prodsup 

📁 Node Name Firebase out

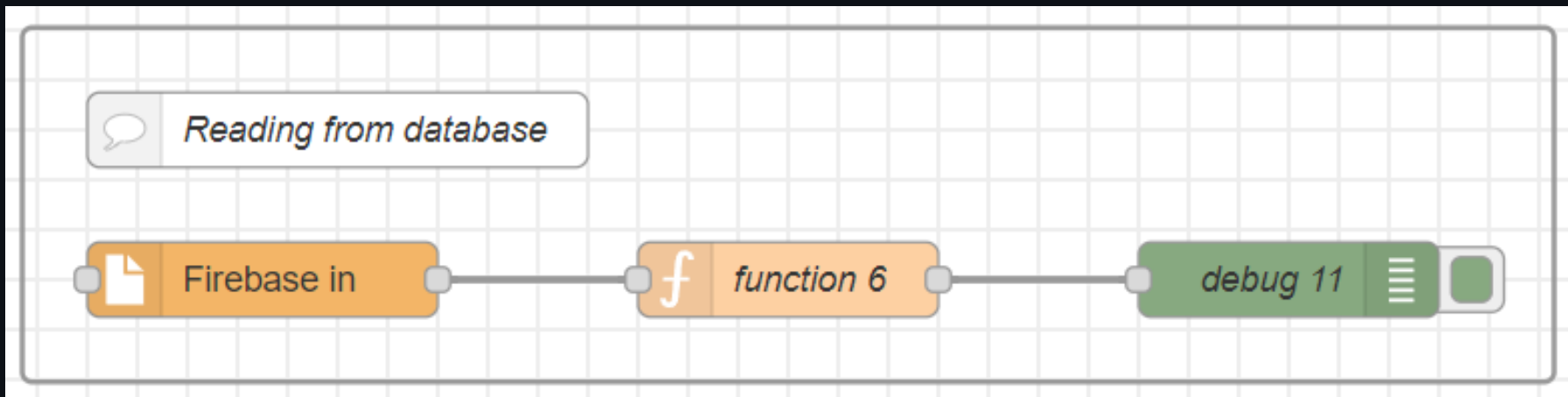
🔑 Operation Add 

📁 Collection data

📄 Document document ref

▶ ! Expert zone

## **M6-2: Reading from database**



**firestore out node**

- Collection: data
- Realtime: enabled
- Query
  - OrderBy: timestamp
    - Direction: descending
  - Limit: 5

Edit Firestore in node

Delete Cancel Done

⚙ Properties

⚙ Admin Prodsup

📁 Node Name Firebase in

📁 Collection data

📄 Document doc name

⚡ Realtime ☒

⚡ Group ☐

🔍 Query

Method	Arguments
orderBy	timestamp
direction	Descending
limit	5

## function node

```
let payload = msg.payload;
let textOut = "";

for (const [key, value] of Object.entries(payload)) {
  const _date = value?.timestamp ? new Date(value.timestamp) : new Date();
  let reading = value.value;
  if (parseFloat(value.value)) {
    reading = parseFloat(value.value).toFixed(2);
  }
  const datestring = _date.toLocaleDateString();
  const timestring = _date.toLocaleTimeString();
  textOut += `${datestring} ${timestring}: ${reading} \n`;
}

msg.payload = textOut;
return msg;
```