

Project Title: Intelligent Water Distribution & Monitoring System

Name : Dr.Maheswari.R

University : VIT Chennai .

Problem statement :

Skills Required:

IBM IoT Platform, IBM Node-RED, IBM Cloudant DB

Project Description:

Project Idea

The project Intelligent water distribution system, as the name says it is all about management of water supply throughout the scale, right from small societies, townships to entire urban infrastructure and also for irrigation water supply management. Main task of the water distribution system is to maintain the water in the tank and also generate the water bills to the individual households which involves human efforts. This system can be automated using the Internet of things.

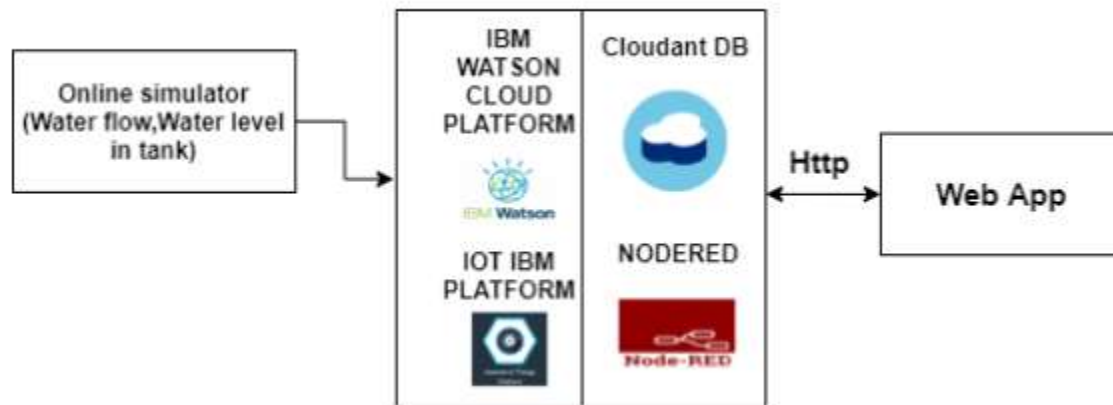
Solution Requirements:

The proposed system should continuously monitor the main tank water level and should automatically switch on/off the motors according to the tank water level and alert the admins. It should monitor the water flow of the individual houses and store the flow rate of each in the Cloudant DB to generate the water bills. Tank water level and the bills should be visualized in the dashboard so that the Admin can monitor them.

Project Flow:

- Main tank water level and Water flow to individual houses is continuously updated to IBM IoT platform (Use Online simulator sensor for water flow and water level)
- Create a Node-RED flow to get the data from IBM IoT platform and store it in Cloudant DB.
- Display the tank water level in the UI
- Retrieve the flow rate of individual houses and generate bills and display them in UI.

Proposed Technical Architecture:



Solution :Project Report

1. IBM IoT Platform and device setup

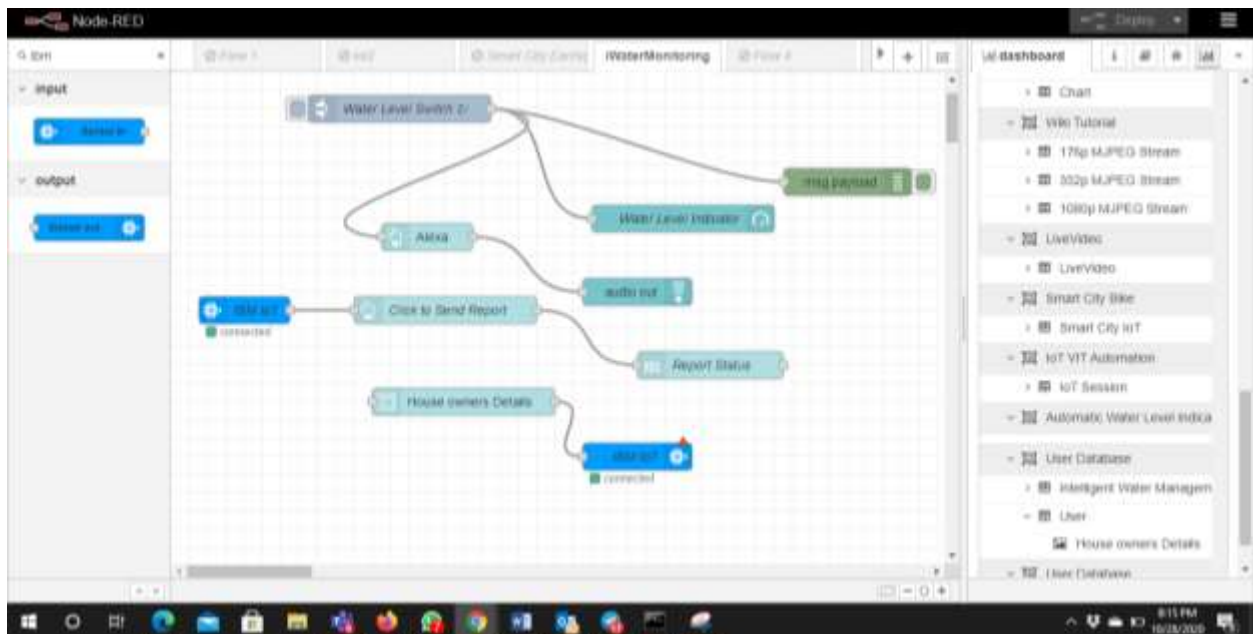
The screenshot shows the IBM Watson IoT Platform interface. At the top, it displays 'Internet of Things Platform-fw' with a green 'Active' status and a link to 'Add tags'. Below this is a sidebar with 'Manage' (Plan, Connections) and a main content area with a 'Let's get started with IBM Watson IoT Platform' message and 'Launch' and 'Docs' buttons. At the bottom, there is a table with device information.

Identity	Device Information	Recent Events	State	Logs
Device ID	1234			
Device Type	Device			
Date Added	Oct 19, 2020 1:57 PM			
Added By	maheswari.r@vit.ac.in			

2. Nodered set up configuration



3. Creation of Node red flow




4. Dashboard UI display

Intelligent Water Management IoT Automation Dashboard

Intelligent Water Management System

Water Level Indicator



ALEXA

CLICK TO SEND REPORT

Report Status
Water Meter Reading report is Sent

User

House owners Details

Name
MAHESWARI R

Mobile
9898989898

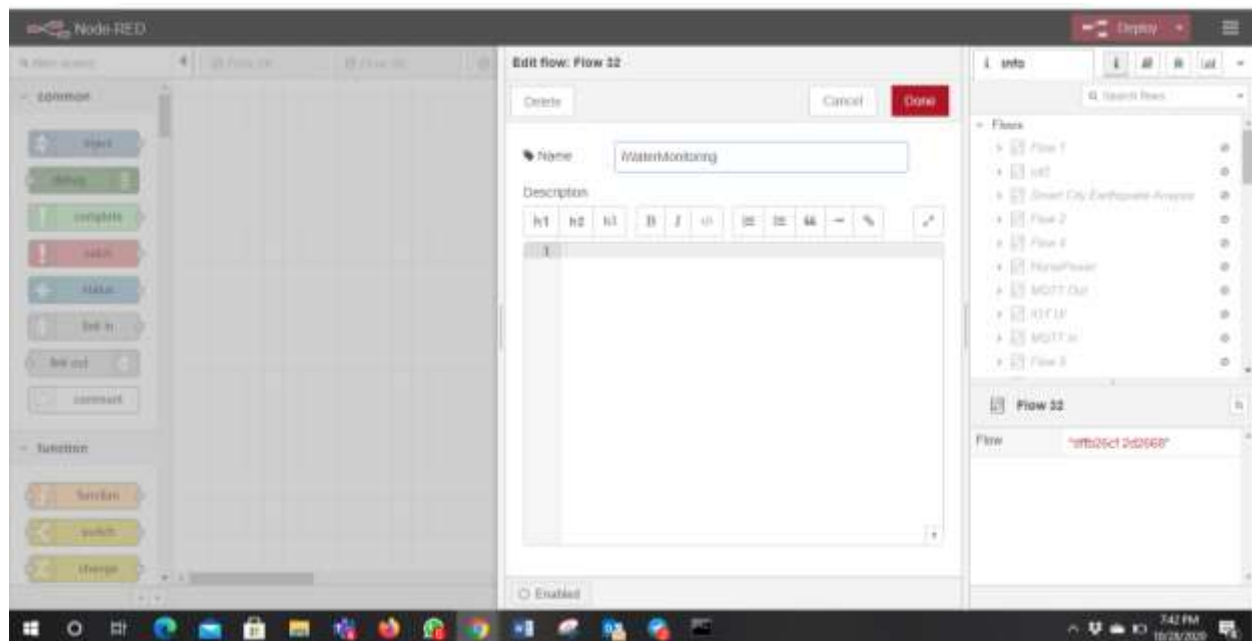
Flat No
20

Email ID
maheswariraja2020@gmail.com

SUBMIT

RESET

Node red flow : Node configuration



Edit flow: Flow 2

Delete

Cancel

Done

 Name

iWaterMonitoring

Description

h1

h2

h3

B

I

</>













1

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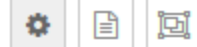
Edit inject node

Delete

Cancel

Done

⚙ Properties



📌 Name

Water Level Switch

≡ msg. payload = ▾ 0_g 100 ×

≡ msg. topic = ▾ a_z ×

+ add

☐ Inject once after 0.1 seconds, then

🔄 Repeat

interval ▾

every

4



seconds ▾

☐ Enabled


Edit audio out node > Add new dashboard group config node > **Add new dashboard tab config node**

Cancel

Add

Properties



 Name


Automatic Water Level Indicator

 Icon

dashboard

 State

☒ Enabled

 Nav. Menu

☒ Visible

The **Icon** field can be either a Material Design icon (e.g. 'check', 'close') or a Font Awesome icon (e.g. 'fa-fire'), or a Weather icon (e.g. 'wi-wu-sunny').

You can use the full set of google material icons if you add 'mi-' to the icon name. e.g. 'mi-videogame_asset'.

☐ Enabled

 0 nodes use this config

On all flows




Edit audio out node > **Add new dashboard group config node**

Cancel

Add

Properties




 Name

iWater

 Tab

Automatic Water Level Indicator



 Width

6

☒ Display group name

☐ Allow group to be collapsed

☐ Enabled

 0 nodes use this config

On all flows



Edit audio out node


Delete

Cancel

Done

Properties



 Group

[Automatic Water Level Indicator] iWater



 TTS Voice

0 : Microsoft David Desktop - English (United States) (en-US)



☐ Play audio when window not in focus.

 Name

Name

Edit gauge node

Delete

Cancel

Done


Properties




 Group

[Automatic Water Level Indicator] iWate




 Size

auto


 Type

Level



 Label

gauge

 Value format

{{value}}

 Units

units

Range

min

0

max

150

 Name

Water Level Indicator

☐ Enabled

Edit button node

Delete

Cancel

Done

Properties

Group

[Automatic Water Level Indicator] Inte

Size

auto

Icon

optional icon

Label

Alexa

Tooltip

optional tooltip

Colour

Red

Background

Yellow

☒ When clicked, send:

Payload

▼ a_z Water is overflow. Automatic switch is trige

Topic

☐ Enabled

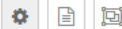
Edit form node

Delete

Cancel

Done

Properties



Form elements

	Label	Name	Type	Required	Rows	Remove
≡	Name	name	Text	<input checked="" type="checkbox"/>		
≡	Mobile	mobile	Number	<input checked="" type="checkbox"/>		
≡	Flat No	address	Text	<input checked="" type="checkbox"/>		
≡	Email ID	email	E-mail	<input checked="" type="checkbox"/>		

+ element

Buttons

Submit Reset

Topic

optional msg.topic