

## PROJECTDEVELOPMENTPHASE

### Delivery Of Sprint-4

Date	16 November 2022
TeamID	PNT2022TMID45922
ProjectName	GasLeakageMonitoringandAlertingSystems
Team Members	Vikashini A , Varsha A Udhayakumar S Ram G Akilan G

#### SPRINT4:

#### Functional Requirement:

Indication of alert and Establishment of the design.

#### User Story:

→As the user,I will receive the alert SMS when leakage arises and so the LED& Buzzer gets turn ON.

→As the designer,the design of the system with its connection and the required documents such as app for design application and the related codes are submitted.

#### The design of the system:

Design of the System includes flow of Node-red and the Mit app inventor.

node-red-yxgnr-2022-11-07.eu-de.mybluemix.net/red/#flow/eec96002b8d4a3ee

Node-RED

Deploy

filter nodes

custom builder

tone analyzer v3

dashboard

button

dropdown

switch

slider

numeric

text input

date picker

colour picker

form

Flow 1

IBM IoT

connected

f

Temp

f

Humidity

f

Gas

msg payload

Temperature

Humidity

Gas

Door OPEN

Door CLOSE

IBM IoT

connected

msg payload

dashboard

Layout

Site

Theme

tabs & links

Industry

Door Control

The image shows a Node-RED web interface in a browser. The address bar shows the URL: node-red-yxgnr-2022-11-07.eu-de.mybluemix.net/red/#flow/eec96002b8d4a3ee. The interface has a left sidebar with a 'filter nodes' search bar and a list of nodes categorized under 'dashboard'. The main workspace, titled 'Flow 1', contains a flow diagram. At the top left, an 'IBM IoT' node (blue with a gear icon) is connected to three function nodes: 'Temp', 'Humidity', and 'Gas' (all orange with an 'f' icon). These function nodes are connected to three output nodes: 'Temperature', 'Humidity', and 'Gas' (all teal with a line graph icon). A 'msg payload' node (green with a list icon) is also connected to the 'Temp' and 'Humidity' function nodes. At the bottom, there are two input nodes: 'Door OPEN' and 'Door CLOSE' (both teal with a hand icon). These are connected to an 'IBM IoT' node (blue with a gear icon) and a 'msg payload' node (green with a list icon). The right sidebar shows a 'dashboard' section with tabs for 'Layout', 'Site', and 'Theme'. Below these is a 'Tabs & Links' section with a tree view showing 'Industry' and 'Door Control'.

node-red-yxgnr-2022-11-07.eu-de.mybluemix.net/red/#flow/eec96002b8d4a3ee

Node-RED

Deploy

filter nodes

button

dropdown

switch

slider

numeric

text input

date picker

colour picker

form

text

gauge

chart

audio out

Flow 1

Door OPEN

Door CLOSE

mit

mit app

[get] /sensor

IBM IoT

connected

msg payload

http

MIT

http

dashboard

Layout

Site

Theme

Tabs & Links

Industry

Door Control

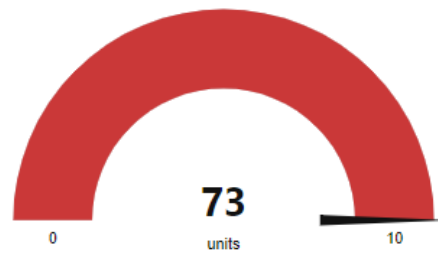
## Industry

### Door Control

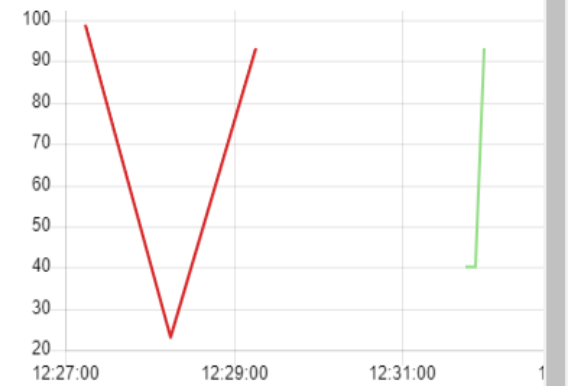
Temperature



gauge



Humidity



DOOR OPEN

DOOR CLOSE

Inbox (2) x W gas sens x MIT App x MIT App x IBM Clo x Node-R x Node-R x Node-R x Node-R x IBM Wal x +

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Palette

Search Components...

User Interface


- Button
- CheckBox
- DatePicker
- Image
- Label
- ListPicker
- ListView
- Notifier
- PasswordTextBox
- Slider
- Spinner
- Switch
- TextBox
- TimePicker
- WebView

Layout

Viewer

☐ Display hidden components in Viewer

Phone size (505,320)



Components

- Screen1
  - VerticalArrangement1
    - HorizontalArrangemen
    - Image1
    - HorizontalArrangemen
      - Label1
    - HorizontalArrangemen
    - HorizontalArrangemen
  - Clock1

Media

- MITbackground.jpg

Properties

Screen1

AboutScreen

AccentColor

Default

AlignHorizontal

Left : 1

AlignVertical

Top : 1

AppName

GASENSOR

BackgroundColor

Default

BackgroundImage

mit.jpg...

BigDefaultText

BlocksToolkit

All

CloseScreenAnimation

Default

DefaultFileScope

App


HighContrast

Type here to search

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Inbox (2 x)W gas sens xMIT App xMIT App xIBM Clo xNode-Ri xNode-Ri xNode-Ri xNode-Ri xIBM Wa x+

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GASSENSOR

Screen1 ▾Add Screen ...Remove ScreenPublish to Gallery

DesignerBlocks

Blocks

Built-in

- Control
- Logic
- Math
- Text
- Lists
- Dictionaries
- Colors
- Variables
- Procedures

Screen1

- VerticalArrangement1
  - HorizontalArrangement1
    - Image1
  - HorizontalArrangement2
    - Label1
    - HorizontalArrangement3

Viewer


when Clock1 ▾ .Timer

do open another screen screenName Screen2 ▾

⚠ 0

✖ 0


Show Warnings




🎯

+

-




Type here to search



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Viewer

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Phone size (505,320)

User Registration

User Name :

Password :

REGISTER

SIGN IN

Components

- Screen2
  - VerticalArrangement1
    - HorizontalArrangement
      - Image1
    - HorizontalArrangement
      - Label1
    - HorizontalArrangement
      - Label2
    - HorizontalArrangement
      - Label3
      - TextBox1
    - HorizontalArrangement
      - Label4
      - PasswordTextBc
    - HorizontalArrangement

Rename Delete

Media

- MITbackground.jpg

Properties

Screen2

AboutScreen

AlignHorizontal

Left : 1

AlignVertical

Top : 1

BackgroundColor

☐ Default

BackgroundImage

MITbackground.jpg...

BigDefaultText

☐

CloseScreenAnimation

Default

HighContrast

☐

OpenScreenAnimation

Default

ScreenOrientation

Unspecified

Scrollable

☒

ShowStatusBar

Type here to search

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**GASSENSOR** Screen2 Add Screen ... Remove Screen Publish to Gallery Designer Blocks

**Blocks**

- Built-in
  - Control
  - Logic
  - Math
  - Text
  - Lists
  - Dictionaries
  - Colors
  - Variables
  - Procedures
- Screen2
  - VerticalArrangement1
    - HorizontalArrangen
  - HorizontalArrangen
    - Image1
    - HorizontalArrangen
    - HorizontalArrangen

**Viewer**

when Button2 .Click

do

call FirebaseDB1 .GetValue tag TextBox1 . Text

valueIfTagNotThere "NA"

when Button1 .Click

do

call FirebaseDB1 .StoreValue tag TextBox1 . Text

valueToStore PasswordTextBox1 . Text

when FirebaseDB1 .GotValue

tag value

do

if get tag = TextBox1 . Text

then

if get value = PasswordTextBox1 . Text

then

open another screen screenName Screen4

set Label2 . Text to "Wrong User Name & Password"

Show Warnings

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Inbox (2) x gas sens x MIT App x MIT App x IBM Clo x Node-R x Node-R x Node-R x Node-R x IBM Wa x +

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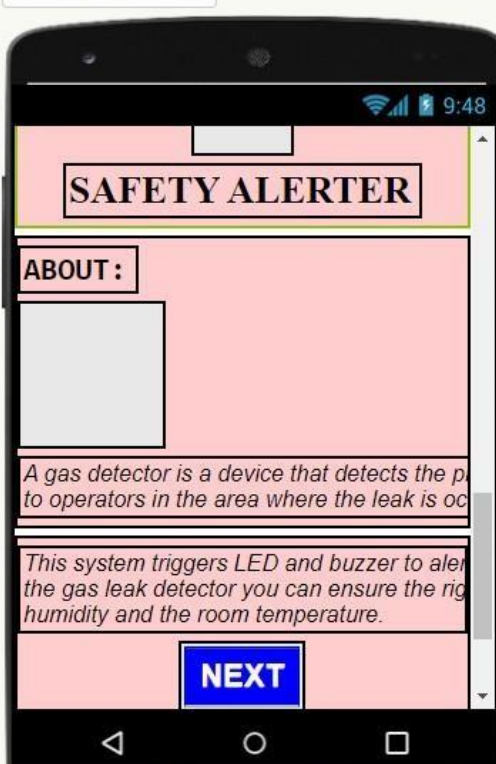
User Interface

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- TimePicker
- WebView

Viewer

☐ Display hidden components in Viewer

Phone size (505,320)



Components

- Screen4
  - VerticalArrangement1
    - HorizontalArrangen
    - HorizontalArrangen
    - HorizontalArrangen
      - Image1
    - HorizontalArrangen
      - Label1
  - VerticalArrangement2
    - HorizontalArrangen
      - Label2
    - HorizontalArrangen
      - Label3
  - VerticalArrangement3
    - HorizontalArrangen
      - Label4

Rename Delete

Media

- MITbackground.jpg

Properties

VerticalArrangement1

AlignHorizontal  
Center : 3

AlignVertical  
Top : 1

BackgroundColor  
Custom...

Height  
Fill parent...

Width  
Fill parent...

Image  
None...


Visible  
☒

Type here to search

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GASSENSOR

Screen4 ▾Add Screen ...Remove ScreenPublish to Gallery

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- Variables
- Procedures

Screen4

- VerticalArrangement1
  - HorizontalArrangen
  - HorizontalArrangen
- HorizontalArrangen
  - Image1
- HorizontalArrangen

Viewer


when Button1 ▾.Click

do open another screen screenName Screen3 ▾

⚠ 0

✖ 0

Show Warnings




🎯

+

-

🗑

🏠 Type here to search



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- TextBox
- TimePicker
- WebView

Viewer

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Phone size (505,320)



Components

- Screen3
  - VerticalArrangement1
    - HorizontalArrangement
      - Label1
    - HorizontalArrangement
      - Label10
    - HorizontalArrangement
      - Label2
      - Label3
    - HorizontalArrangement
      - Label4
      - Label5
    - HorizontalArrangement
      - Label6
      - Label7

Rename Delete

Media

Properties

Label8

BackgroundColor

☐ None

FontBold

☒

FontItalic

☐

FontSize

30

FontTypeface

default

HTMLFormat

☐

HasMargins

☒

Height

Automatic...

Width

Automatic...

Text

ALERT > 50

TextAlignment

left : 0

Type here to search

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GASSENSOR Screen3 Add Screen ... Remove Screen Publish to Gallery Designer Blocks

Blocks

- Built-in
  - Control
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  - Text
  - Lists
  - Dictionaries
  - Colors
  - Variables
  - Procedures
- Screen3
  - VerticalArrangement1
    - HorizontalArrangen
  - HorizontalArrangen
    - Label1
  - HorizontalArrangen
    - Label10

Viewer

when Web1 . GotText

url responseCode responseType responseContent

do

set Label5 . Text to look up in pairs key "temp" pairs call Web1 . JsonTextDecode jsonText get responseContent

notFound "not found"

set Label7 . Text to look up in pairs key "Humid" pairs call Web1 . JsonTextDecode jsonText get responseContent

notFound "not found"

set Label3 . Text to look up in pairs key "Gas" pairs call Web1 . JsonTextDecode jsonText get responseContent

notFound "not found"

when Button1 . TouchUp

Show Warnings 1 0

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### GASSENSOR

Screen3 Add Screen ... Remove Screen Publish to Gallery Designer Blocks

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  - Variables
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- Screen3
  - VerticalArrangement1
    - HorizontalArrangen
  - HorizontalArrangen
    - Label1
  - HorizontalArrangen
    - Label10

**Viewer**

Set Labels . Text to look up in pairs key Gas

pairs call Web1 .JsonTextDecode jsonText get responseContent

notFound "not found"

when Button1 .TouchUp

do set Web2 . Url to "https://node-red-yxgnr-2022-11-07.eu-de.mybluemi..."

call Web2 .Get

when Button2 .TouchUp

do set Web2 . Url to "https://node-red-yxgnr-2022-11-07.eu-de.mybluemi..."

call Web2 .Get

Show Warnings 1 0

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## Indication of Alert:

WOKWI

SAVE

SHARE

gas sensor

Docs

sketch.ino

diagram.json

libraries.txt

Library Manager

```
1 #include <WiFi.h>//library for wifi
2 #include <PubSubClient.h>//library for MQTT
3 #include <LiquidCrystal.h>
4 #include <ESP32Servo.h>
5 #include "DHT.h"// Library for dht11
6 #define DHTPIN 15 // what pin we're connected to
7 #define DHTTYPE DHT22 // define type of sensor DHT 11
8
9
10 LiquidCrystal lcd(2,4,19,21,12,14);
11 int GreenLED = 18;
12 int RedLED = 5;
13 int BUZZER_PIN = 13;
14 const int servoPin = 22;
15 String data3;
16 int g;
17 Servo door;
18 int pos;
19
20
21 DHT dht (DHTPIN, DHTTYPE);// creating the instance by passing pin and type of
22
23 void callback(char* subscribetopic, byte* payload, unsigned int payloadLength)
24
25
26 //-----credentials of IBM Accounts-----
27
28 #define ORG "u9pz01"//IBM ORGANITION ID
29 #define DEVICE TYPE "gassense"//Device type mentioned in ibm watson IOT Platform
```

Simulation

00:16.823 99%

Sending payload: {"temp":32.90,"Humid":62.50,"Gas":86}

Publish ok

Gas Level in Percentage :89

temp:32.90

Humid:62.50

Sending payload: {"temp":32.90,"Humid":62.50,"Gas":89}

Publish ok

WOKWI

SAVE

SHARE

gas sensor

Docs







