

|              |              |                         |   | Date  | 19-Nov-22   |   |   |                     |        |                  |                        |               |
|--------------|--------------|-------------------------|---|---|---|---|---|---------------------|--------|------------------|------------------------|---------------|
|              |              |                         |   | Team ID                                     | PNT2022TMID04334  |   |   |                     |        |                  |                        |               |
|              |              |                         |   | Project Name                                | Project - Gas Leakage Monitoring And Alerting System For Industries   |   |   |                     |        |                  |                        |               |
|              |              |                         |   | Maximum Marks                               | 4 marks   |   |   |                     |        |                  |                        |               |
| Test case ID | Feature Type | Component               | Test Scenario   | Pre-Requisite                               | Steps To Execute  | Test Data   | Expected Result   | Actual Result       | Status | Comments         | TC for Automation(Y/N) | Executed By   |
| TC_OO1       | Functional   | IBM cloud               | Create the IBM Cloud services which are being used in this project.   | IBM Cloud Login ID & Password               | 1.Go to IBM Cloud signup page<br>2.Enter e-mail id and other credentials<br>3.Enter a password  | <a href="https://cloud.ibm.com/login">https://cloud.ibm.com/login</a>   | User should sign up IBM cloud and details should be verified                  | Working as expected | Pass   | Results verified | No                     | Bharanidharan |
| TC_OO2       | Functional   | IBM Cloud               | Configure the IBM Cloud services which are being used in completing this project.   | IBM Cloud Login ID & Password               | 1.Go to Cloud login<br>2.Enter user ID & Password<br>3.Verify login by the popup display  | <a href="https://cloud.ibm.com/login">https://cloud.ibm.com/login</a>   | User login to IBM Cloud and should be navigated to IBM Cloud dashboard page   | Working as expected | Pass   | Results verified | No                     | Bharani       |
| TC_OO3       | Functional   | IBM Watson IoT Platform | IBM Watson IoT platform acts as the mediator to connect the web application to IoT devices, so create the IBM Watson IoT platform.  | IBM Watson IoT Platform Login ID & Password | 1.Login to IBM Cloud<br>2.Click Catalog<br>3.Search IoT and click create<br>4.Go to resource list and search Internet of Things platform<br>5.Press Launch and click Sign in IBM Watson Platform  | <a href="https://vq4nsy.internetoftthings.ibmcloud.com/dashboard/">https://vq4nsy.internetoftthings.ibmcloud.com/dashboard/</a>   | User should be navigated to IBM IoT Watson Platform                           | Working as expected | Pass   | Results verified | No                     | Harish        |
| TC_OO4       | Functional   | IBM Watson              | In order to connect the IoT device to the IBM cloud, create a device in the IBM Watson IoT platform and get the device credentials. | IBM Watson IoT Platform Login ID & Password | 1.Login to IBM Watson Platform<br>2. Click Add Device<br>3.Enter the details and click Finish. Create Device ID & Device type<br>4.Turn on Device Simulator and click simulation running. Enter the values of gas, temperature & humidity level<br>5.Click Send & Save. Verify the displayed result of the levels   | Temperature, Humidity and Gas sensor values are generated randomly in simulation  | Temperature, Humidity and Gas sensor values should be randomly generated      | Working as expected | Pass   | Results verified | No                     | Bharanidharan |
| TC_OO5       | Functional   | IBM Cloud(Node Red)     | Configure the connection security and create API keys that are used in the Node-RED service for accessing the IBM IoT Platform.     | Node Red Installation                       | 1.Install node red and open node red in command prompt<br>2.Select IBM input in IoT   | <a href="https://cloud.ibm.com/developer/appservice/create-app?starterKit=59c9d5bd-4d31-3611-897a-f94eea80dc9f&amp;defaultLanguage=undefined">https://cloud.ibm.com/developer/appservice/create-app?starterKit=59c9d5bd-4d31-3611-897a-f94eea80dc9f&amp;defaultLanguage=undefined</a> | User should be able to see the Node Red page                                  | Working as expected | Pass   | Results verified | No                     | Bharani       |
| TC_OO6       | Functional   | Node Red                | Create a Node-RED service.  | Node Red Installation                       | 1.Select IBM IoT input in Node. In IBM IoT Watson Platform, go to apps and click on generate API keys.<br>2.Copy & paste generated API key and token in the IBM IoT input. After entering all details, click the done button.<br>3.Add debug to the IBM IoT and rename as Msg.payload and click on done. Click gauge from the dashboard and fill the details & add functions to the gauge. Check the generated values from the debug message.<br>4.Edit function node, connect them, add another gauge and functions, name them as "Temperature", "Gas" & "Humidity"<br>5.Finally add alarm ON/OFF and Sprinkler ON/OFF buttons to the IBM IoT and debug. Verify the output from NODE RED using Local host link | Values of sensors and button for Alarm & Sprinkler ON/OFF is displayed  | Values of sensors and button for Alarm & Sprinkler ON/OFF should be displayed | Working as expected | Pass   | Results verified | No                     | Harish        |

|        |            |                         |   |                                   |  |   |  |                     |      |                  |    |               |
|--------|------------|-------------------------|---|-----------------------------------|--|---|--|---------------------|------|------------------|----|---------------|
| TC_OO7 | Functional | Python 3.7.0            | Develop a python script to publish random sensor data such as temperature, humidity level and Gas level to the IBM IoT platform                           | Python 3.7.0(64 bit) installation | 1.Download and install Python 3.7.0<br>2.Develop python code   | <a href="https://www.python.org/downloads/release/python-370/">https://www.python.org/downloads/release/python-370/</a> | User should be able to develop a python code                               | Working as expected | Pass | Results verified | No | Gomanishwaran |
| TC_OO8 | Functional | Python 3.7.0            | After developing python code, commands are received just print the statements which represent the control of the devices.                                 | Python 3.7.0(64 bit) installation | 1.Downlinstall Python 3.7.0<br>2.After python code   | Get the output from the code  | User should be able to get the results from the developed code             | Working as expected | Pass | Results verified | No | Gomanishwaran |
| TC_OO9 | Functional | IBM Cloudant DB         | Publish Data to The IBM Cloud   | IBM Cloud Login ID & Password     | 1.Run the python code<br>2.Verify the displayed output   | Publishment of python code  | User should be able to publish the code                                    | Working as expected | Pass | Results verified | No | Harish        |
| TC_O10 | Web UI     | Node Red & MIT Inventor | Create Web UI in Node-Red   | MIT Inventor Login ID & password  | 1.Go to Node Red. Select http in & http response. Add functions and select another http in and http response. Connect them to IBM IoT output and function.Print the command statements such as Sprinkler ON/OFF, Alarm ON/OFF and sensor<br>2.Go to MIT app inventor and create frontend using buttons,horizontal arrangement, text bar, etc. Add blocks and so on to create back end. Verify the output | Sensors values and command values can be seen in the mobile application   | Sensors values and command values should be seen in the mobile application | Working as expected | Pass | Results verified | No | Gomanishwaran |
| TC_O11 | Functional | IBM Cloudant DB         | Configure the Node-RED flow to receive data from the IBM IoT platform and also use Cloudant DB nodes to store the received sensor data in the cloudant DB | IBM Cloud Login ID & Password     | 1.Go to IBM cloud, search Cloudant in Catalog, Add new dashboard, go to Node Red<br>2.Connect to cloudant and verify the results   | Cloudant is connected by NODE RED   | User should be able to connect the Cloudant and Node Red                   | Working as expected | Pass | Results verified | No | Harish        |