

TeamID : PNT2022TMID11080

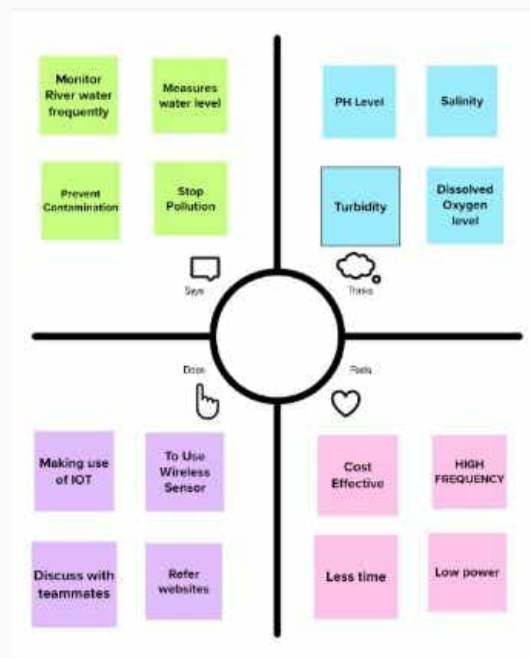
Project: Real time river water quality monitoring and control system

IBM ID : IBM-Project-6262-1658825319

Dive into the mind of the user for focused product development

- Build empathy and keep your focus on the user by putting yourself in their shoes.

S.NO	NAME	POSITION	COLLEGE NAME
1	S.SATISHKUMAR	TEAM LEADER	K. J. SOMAYAJI COLLEGE OF ENGINEERING
2	S. SUBASH	TEAM MEMBER	K. J. SOMAYAJI COLLEGE OF ENGINEERING
3	S. SATISH	TEAM MEMBER	K. J. SOMAYAJI COLLEGE OF ENGINEERING
4	S. ANISHA	TEAM MEMBER	K. J. SOMAYAJI COLLEGE OF ENGINEERING



Share your feedback

Share your feedback



LITERATURE SURVEY:

Project: Real-Time River Water Quality Monitoring and Control System

Team Leader : S.SEETHALAKSHMI

Team Member 1: K.SUBIKSHA

Team Member 2: S.SATHIYA

Team Member 3: K.SNEHA

Abstract:

Current water quality monitoring system may be a manual system with an uneventful process and is extremely time-consuming. This paper

proposes a sensor-based water quality monitoring system. the most components of Wireless Sensor Network (WSN) include a

microcontroller for processing the system, communication system for inter and intra node communication and a number of other sensors.

Real-time data access is done by using remote monitoring and Internet of Things (IoT) technology. Data collected at the

apart site are often displayed during a visual format on a server PC with the assistance of Spark streaming analysis through Spark MLlib,

Deep learning neural network models, Belief Rule Based (BRB) system and is additionally compared with standard values. If the

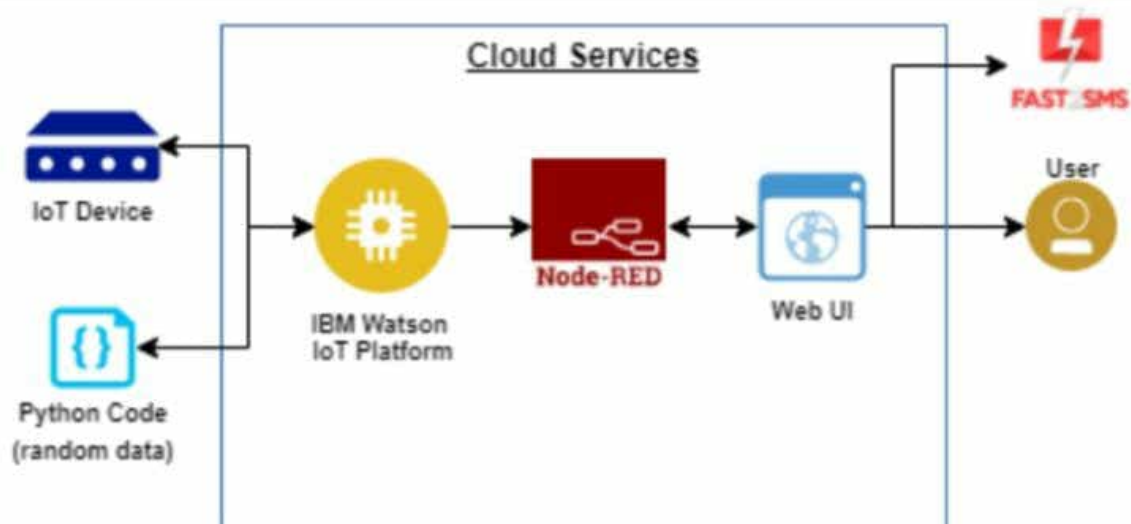
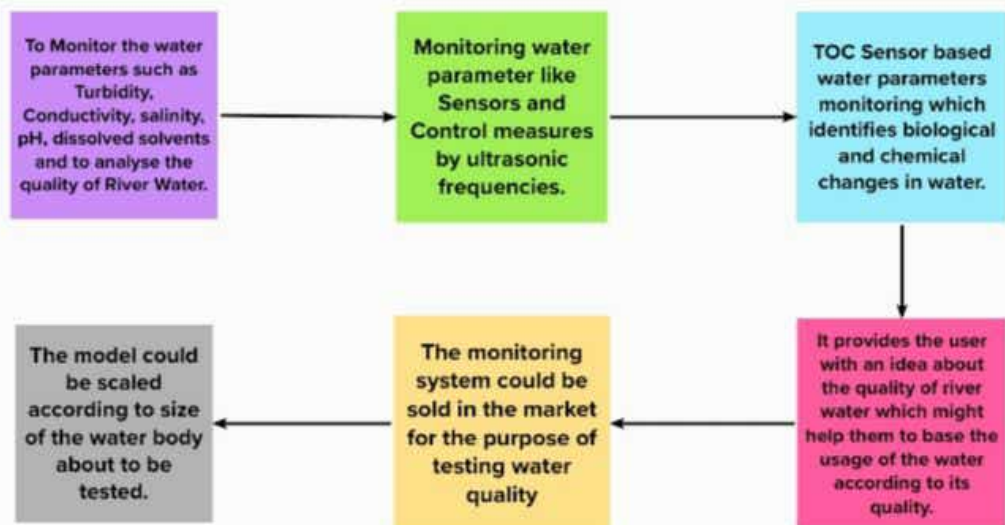
acquired value is above the brink value automated warning SMS alert are sent to the agent. the distinctiveness of our

proposed paper is to get the water monitoring system with high frequency, high mobility, and low powered. Therefore, our

proposed system will immensely help Bangladeshi populations to become conscious against contaminated water further on

stop polluting the water.

PROPOSED SOLUTION



Problem-Solution fit canvas 2.0

Purpose / Vision

1. CUSTOMER SEGMENT(S) CS <ul style="list-style-type: none"> ➤ Aqua ponics ➤ Dam safety organisation (SDSO) ➤ Wholesaler of mineral water 	5. CUSTOMER CONSTRAINTS CC <ul style="list-style-type: none"> ➤ Sensors are used ➤ Compact in size ➤ Consumes low power 	8
2. JOBS-TO-BE-DONE / PROBLEMS J&P <ul style="list-style-type: none"> ➤ To control the flow of water using IOT ➤ To identify the ph value and mineral content in the water ➤ To identify the presents of algal bloom in the tank or water bodies ➤ The quality , quantity and temperature of the water can be maintained 	6. PROBLEM ROOT CAUSE RC <ul style="list-style-type: none"> ➤ It involves improper upkeep of the water supply and inappropriate upkeep of the people. ➤ Lack of system administration and upkeep is the problem. ➤ It uses a lot of electricity. 	9
3. TRIGGERS TR <ul style="list-style-type: none"> ➤ They are able to recognise the issue with the water without anyone's assistance. ➤ It uses little energy and is small in size. Customers will find it easy to use 4. EMOTIONS: BEFORE / AFTER EM <ul style="list-style-type: none"> ➤ Before :Anxiety,time consumption and unaware of things ➤ After:aware of things ,less time consumption and pleasure 	7. YOUR SOLUTION SL <ul style="list-style-type: none"> ➤ The system finds a way for supervising and monitoring the real time river water so that quality & flow can be maintained ➤ To consume less powerconsumption and to provide in cheaper cost ➤ The device will be in compact size and user friendly to use 	10

Project Design Phase-II
Solution Requirements (Functional & Non-functional)

Date	13 October 2022
Team ID	PNT2022TMID11080
Project Name	Project - lot Based Real time River water quality monitoring and control System
Maximum Marks	4 Marks

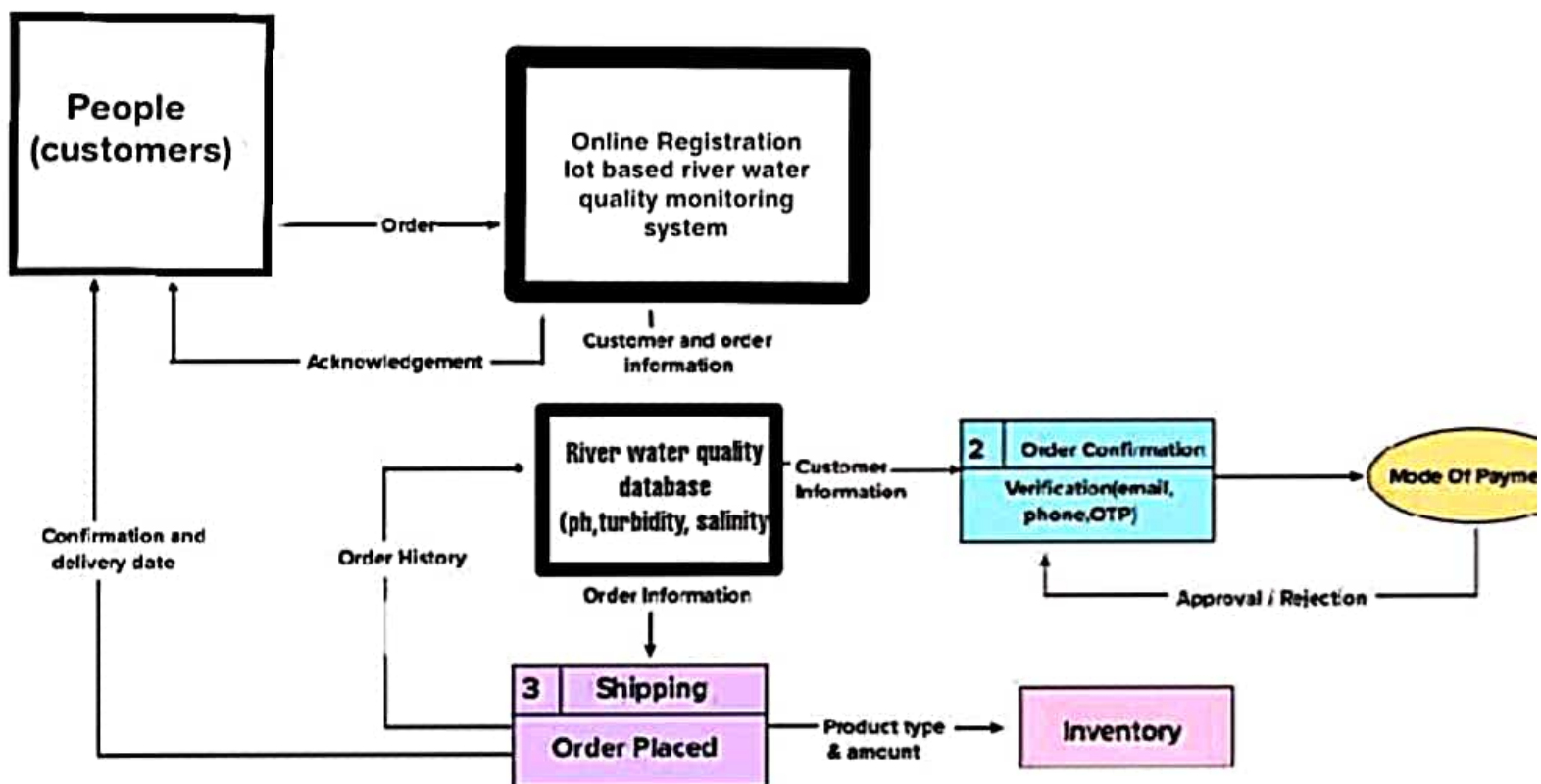
Functional Requirements:

Following are the functional requirements of the proposed solution.

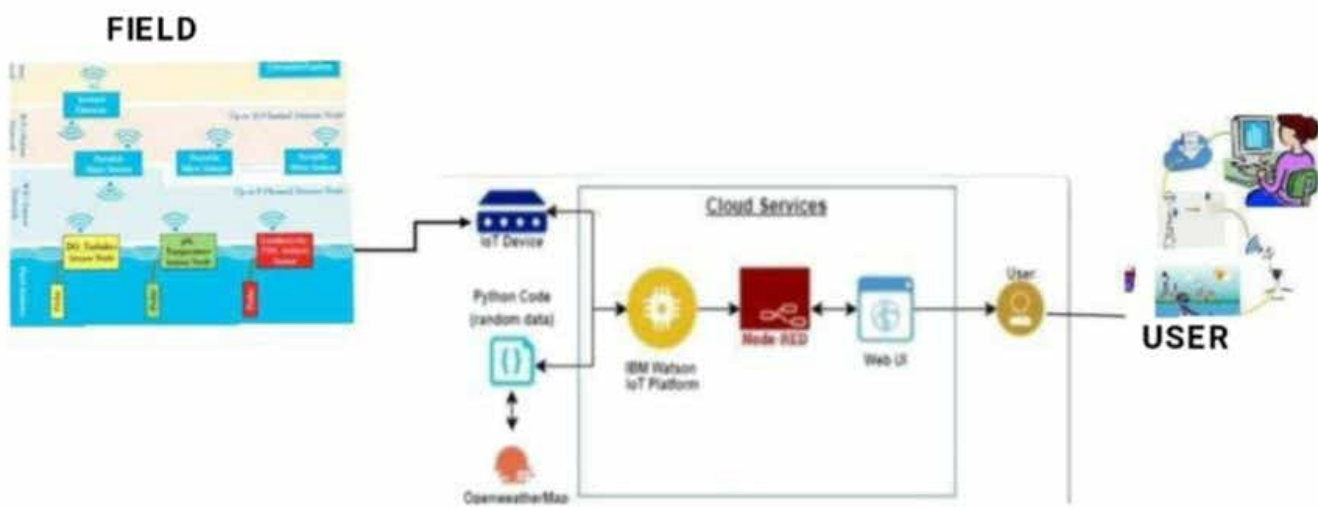
FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Requirements	River water Protection Monitors PH, Salinity, Turbidity, Conductivity and dissolve solvents and to analyze the quality of river water.
FR-2	User Registration	Manual Registration Registration through Form Registration through webpage Registration through Gmail
FR-3	User Confirmation	Confirmation via Phone Confirmation via mail Confirmation via OTP
FR-4	Payment Options	Cash on Delivery NetBanking UPI Credit/Debit/ATM Card
FR-5	Product Delivery and Installation	Door Step delivery Take away Free Installation and 1 year Warranty
FR-6	Product Feedback	Through Webpages Through Phone calls Through Googleforms

Approval i

Product type -.....+
& amount

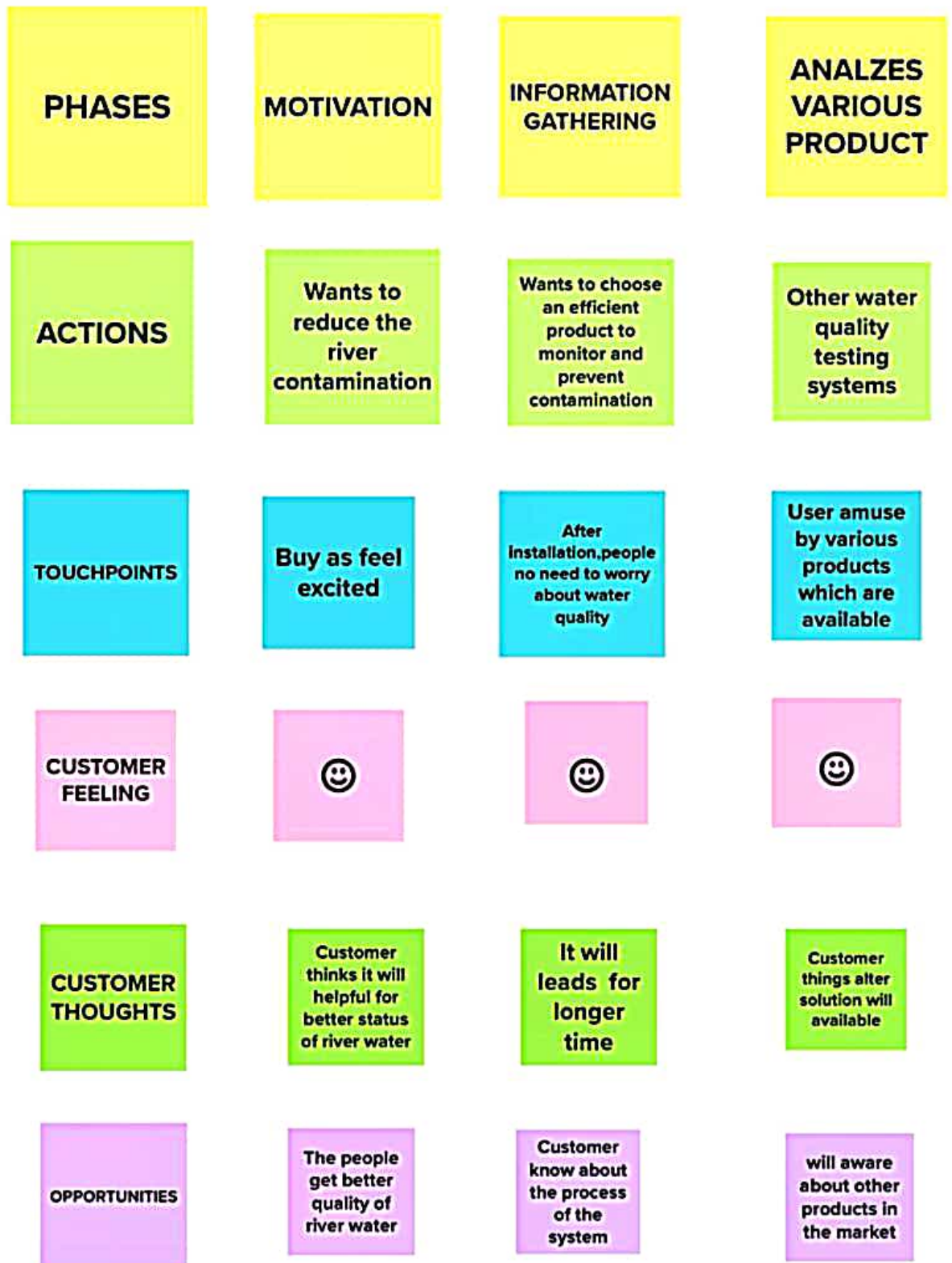


TECHNOLOGY ARCHITECTURE



IoT based used river water quality and monitoring system

CUSTOMER JOURNEY MAP



PROJECT PLANNING PHASE

PROJECT MILESTONE

Date	21 October 2022
Team ID	PNT2022TMID11080
Project Name	Real-Time River Water Quality Monitoring and Control System
Maximum Marks	4 marks

S.NO	ACTIVITY TITLE	ACTIVITY DESCRIPTION	DURATION
1	Understanding the project requirement	Assign the team members and create repository in the Github, Assign the task to each members and teach how to use and open and class the Github and IBM career education	1 WEEK
2	Starting of project	Advice students to attend classes of IBM portal create and develop an rough diagram based on project description and gather of information on IOT and IBM project and team leader assign task to each member of the project	1 WEEK
3	Attend class	Team members and team lead must watch and learn from classes provided by IBM and NALAYATHIRAN and must gain	4 WEEK

Project Planning Phase

Sprint Delivery Plan

Date	21 October 2022
Team ID	PNT2022TMID11080
Project Name	Real-Time River Water Quality Monitoring and Control System
Maximum Marks	8 Marks

Product Backlog, Sprint Schedule, and Estimation (4 Marks)

Use the below template to create product backlog and sprint schedule

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	2	High	Seethalakshmi.S
Sprint-1		USN-2	As a user, I will receive confirmation email once I have registered for the application	1	High	Sathiya.S
Sprint-2		USN-3	As a user, I can register for the application through Facebook	2	Low	Subiksha.K
Sprint-1		USN-4	As a user, I can register for the application through Gmail	2	Medium	Sneha.K
Sprint-1	Login	USN-5	As a user, I can log into the application by Entering email & password	1	High	Seethalakshmi.S

Project Tracker, Velocity & Burndown Chart: (4 Marks)

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	20	6 Days	24 Oct 2022	29 Oct 2022	20	29 Oct 2022
Sprint-2	20	6 Days	31 Oct 2022	05 Nov 2022	30	30 Oct 2022
Sprint-3	20	6 Days	07 Nov 2022	12 Nov 2022	49	06 Nov 2022
Sprint-4	20	6 Days	14 Nov 2022	19 Nov 2022	50	07 Nov 2022

Velocity:

$$AV = \frac{\text{sprint duration}}{\text{velocity}} = \frac{20}{10} = 2$$

Burndown Chart:

SPRINT 1

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REAL TIME RIVER-WATER QUALITY MONITORING AND CONTROL SYSTEM

PYTHON CODE:

```
import time
import sys
import ibmiotf.application
import ibmiotf.device
import random
#Provide your IBM Watson Device Credentials
organization = "84708c"
deviceType = "abcd"
deviceId = "12345"
authMethod = "token"
authToken = "12345678"
def myCommandCallback(cmd):
    print ("Command received: %s" % cmd.data['command'])
    status=cmd.data['command']
    if status== "motoron":
        print ("motor is on")
    elif status == "motoroff":
        print ("motor is off")
    else:
        print ("please send proper command")
try:
    deviceOptions = {"org": organization, "type": deviceType, "id": deviceId, "auth-method":authMethod, "auth-token":authToken}
    deviceCli= ibmiotf.device.Client (deviceOptions)

    #..
except Exception as e:
    print ("Caught evention connecting device: %s" % str(e))
    sys.exit()
```

SPRINT 2

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REAL TIME RIVER WATER QUALITY MONITORING AND CONTROL SYSTEM

AIM:

To create device in the IOT Watson Platform and Configure Node Red Services.

REQUIREMENT:

IBM cloud, IBM IOT WATSON PLATFORM,NODE RED SERVICES.

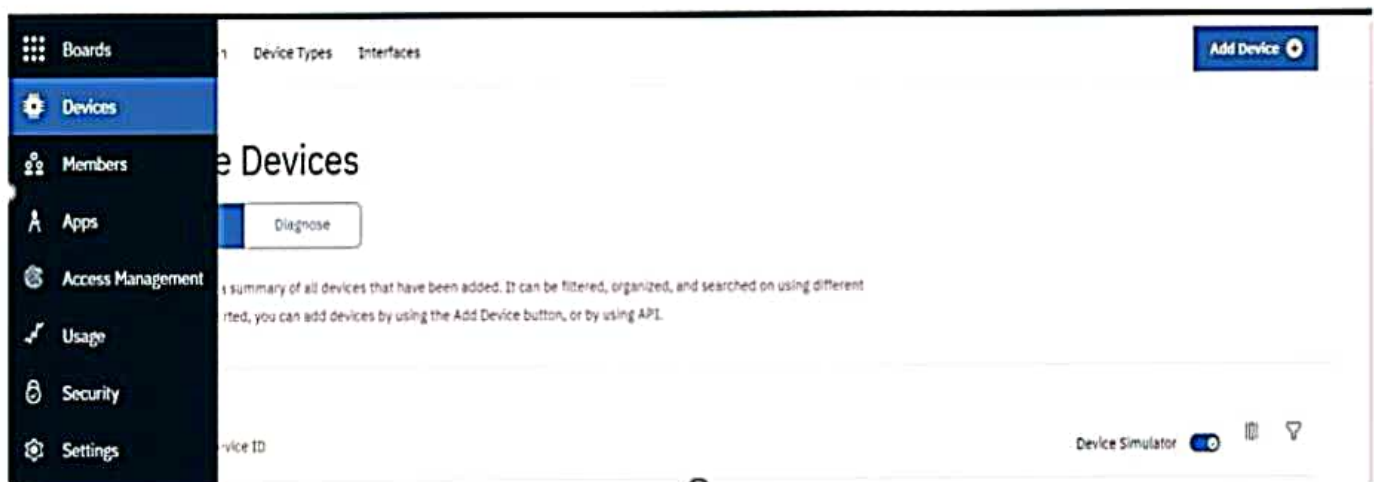
WORKFLOW:

STEP 1:

Log on to IBM cloud and create IBM Watson IOT Platform from IBM cloud Dashboard.

STEP 2:

After Creating IBM Watson IOT Platform,create an Organization (ex.84708c ID: 84708c Bluemix Free)



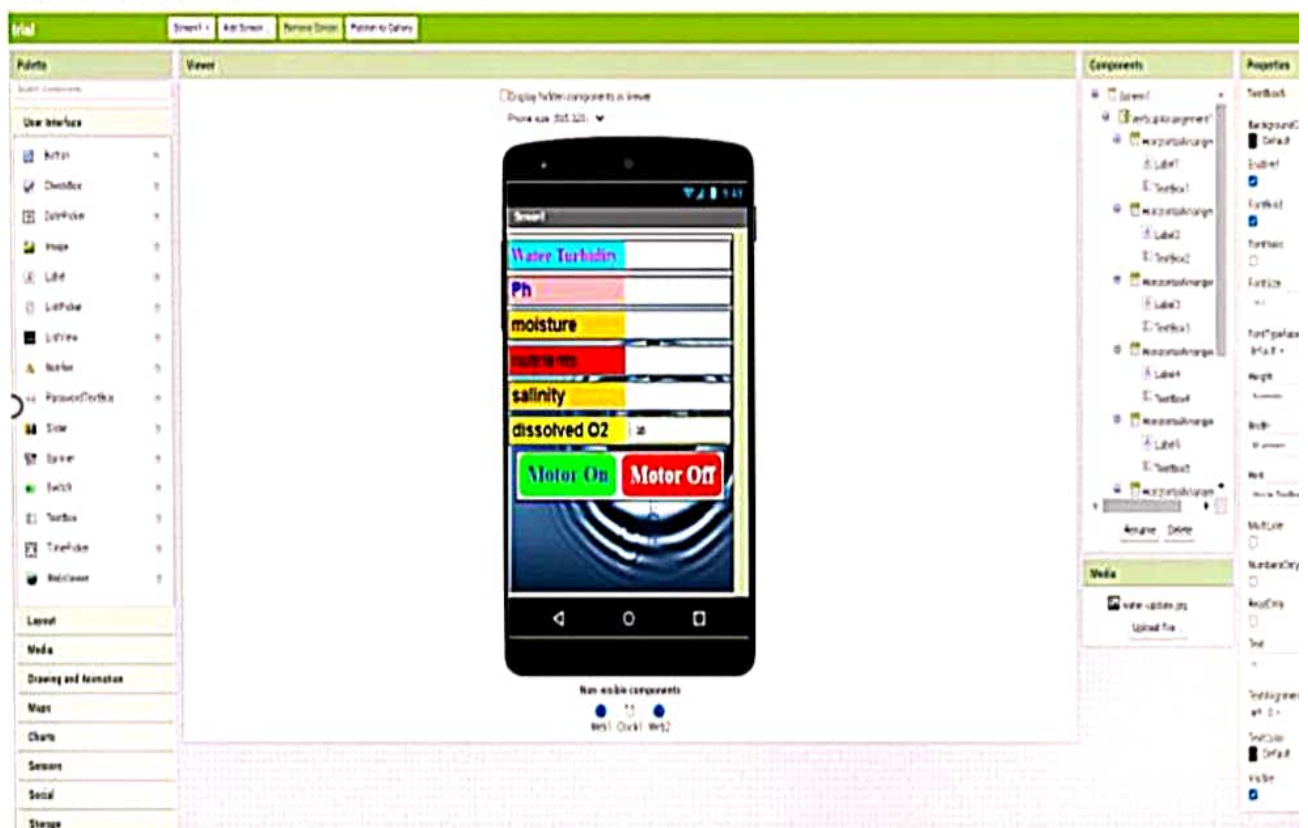
SPRINT 3
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REAL TIME RIVER QUALITY MONITORING AND CONTROL SYSTEM

DESIGN AN APP IN MIT APP INVENTOR

PARAMETERS ARE:

1. Ph
2. Water turbidity
3. Moisture
4. Salinity
5. Dissolved Oxygen
6. Nutrients

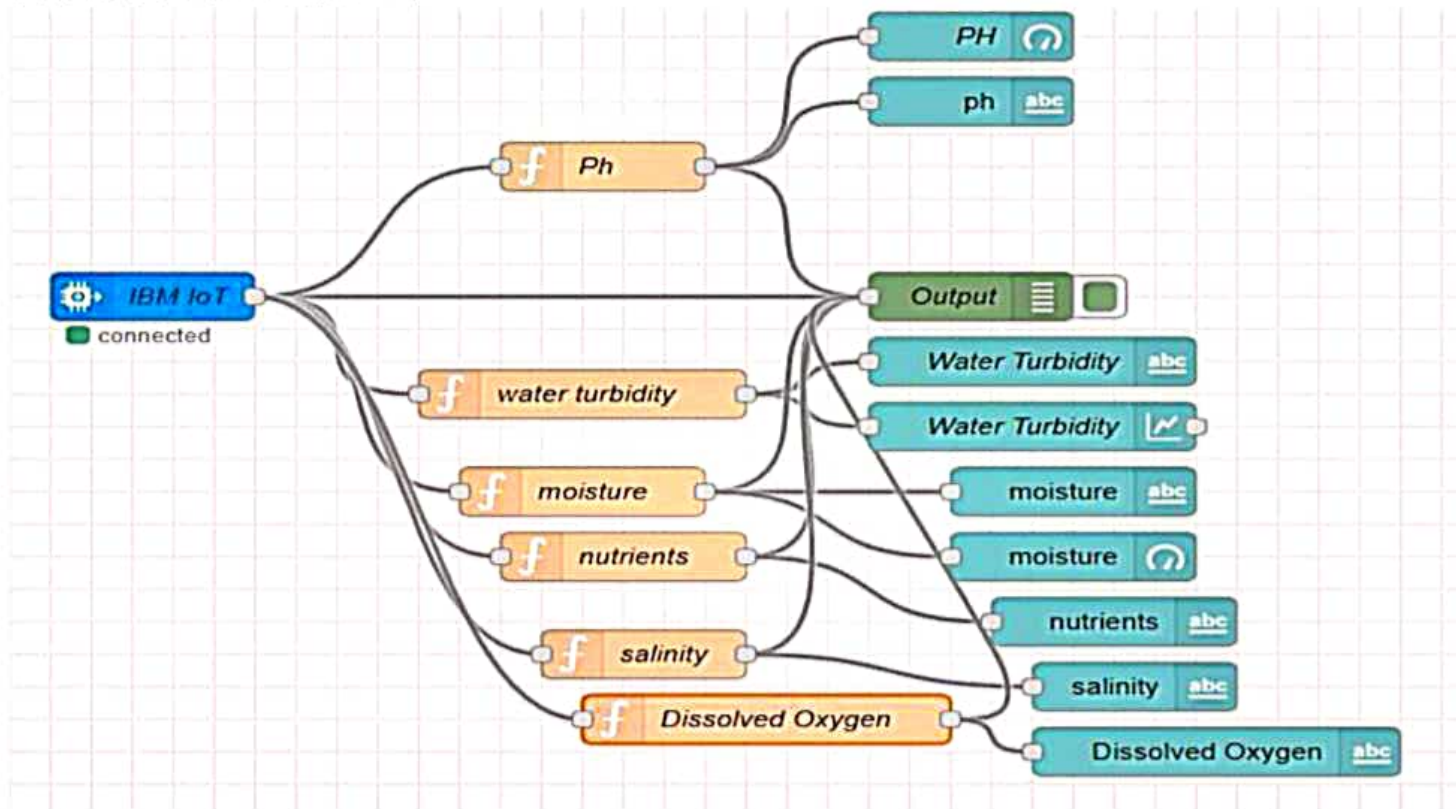


SPRINT 4
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REAL TIME RIVER QUALITY MONITORING AND CONTROL SYSTEM

NODE RED UI:

Node-red-dashboard



Edit function node

Delete Cancel

⚙ Properties

🔍 Name Ph

⚙ Setup On Start On Message On Stop

```
1 global.set("Ph",msg.payload.Ph)
2 msg.payload=msg.payload.Ph
3 return msg;
```