**IOT BASED RIVER WATER QUALITY MONITORING SYSTEM USING IBM WATSON**



**TOPICS:**  
**1.Introduction**

**2.LIterature Survey**

**3.Theoretical Analysis**

**4.Flowchart**

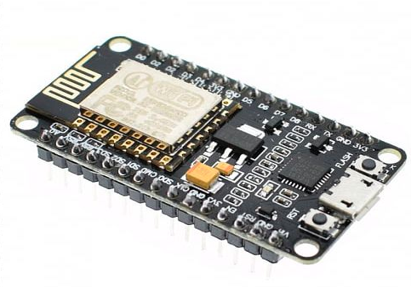
**5.Advantages & Disadvantages**

**6.Applications**

**7.Conlusions**

**8.Appendix**

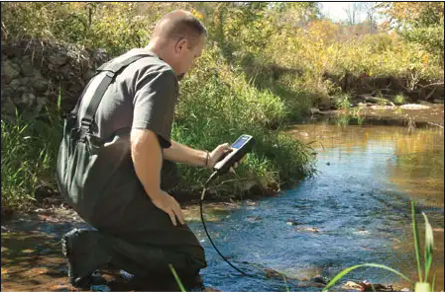
**9.UI Output**



**INTRODUCTION**

**The river water monitering system consisting of sensors and boards , wher the data required for testing the water quality is sent to the specified user/organisation.**

**The system works when the sensors are in the presence of the water , these systems are mostly used near the banks of the river. The IOT based system is used , since it requires ver less manual human work.**

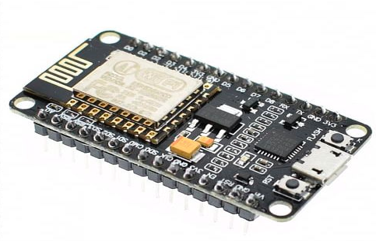


**EXISTING PROBLEM**

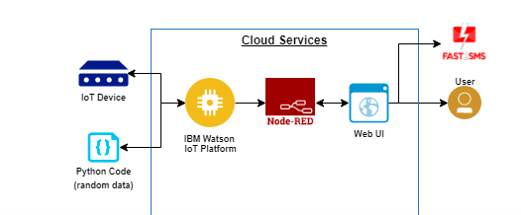
**The exixsting problem for testing the quality of the river water is that , a person has to come all the way to the river and collect a sample of the water and then goes to a lab and then after testing the water sample the result can be given out , whether water is clean or contaminated.**

**PROPOSED SOLUTION**

**Through the IOT based "RWQMS" one can just monitor the river from anywhere with just one click , on their systems. The sensors can send accurate values like "presence of dust particles , PH values and water temperature" from which the quality of water can be predicted.**



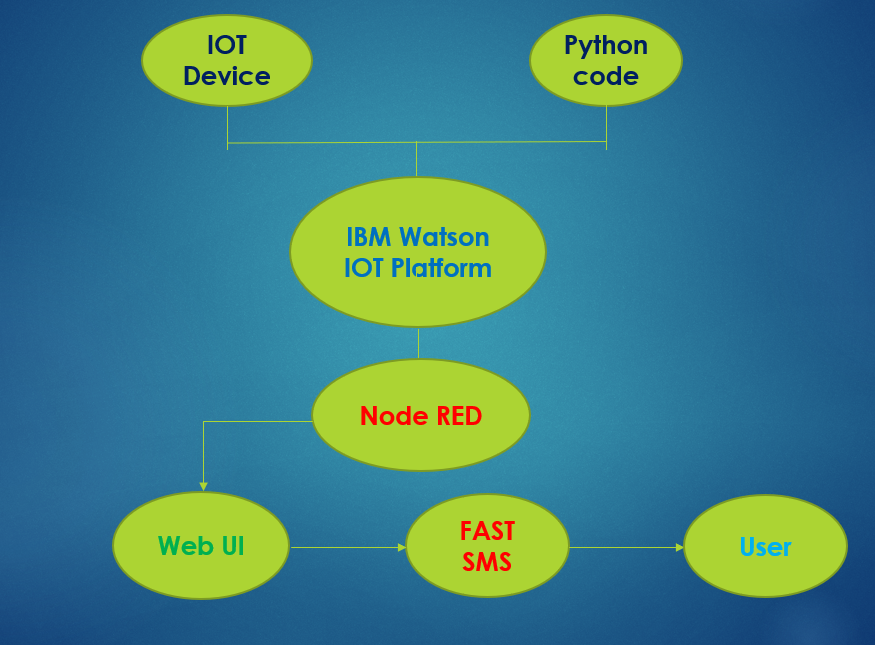
**BLOCK DIAGRAM :**



**HARDWARE AND SOFTWARE COMPONENTS**

**The hardware components consist , temperature sensor , PH sensor , dustparticle sensor , also an ESP32 board , whereas the software consists python/arduino for code , IBM cloud for recieving data , MIT app/fast2sms for monitoring the sensed data.**

**FLOW CHART :**



**ADVANTAGES :**

**1.No need of frquent manual labour.**

**2.Automatic update of required parameters.**

**3.Does not require a lot of infrastructure(laboratories).**

**4.less time consumed.**

**DIS ADVANTAGES :**

**1.One needs to change the power source(battery) of the system when it runs out.**

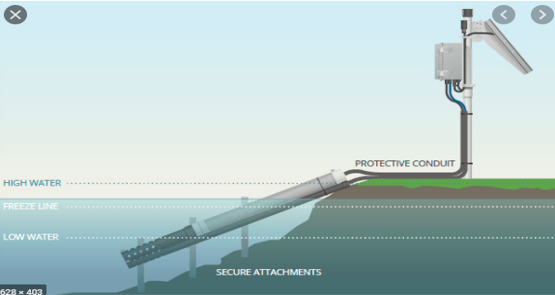
**2.Requires good network connection always for recieving the data.**

**3.The cloud account needs to be recharged every 30 days or else it will crash.**

**4.sometimes if there is a fault in the sensor it sends wrong parameters.**

**APPLICATIONS :**

**The WQMS can be used purposes like in overhead tanks in homes , underground water storages , ponds , lakes , etc.**



**CONCLUSION :**

**WQMS helps to monitor river water quality in an easier way , hence organizations which suits the purpose shall implement this system which is helpful in many ways .**

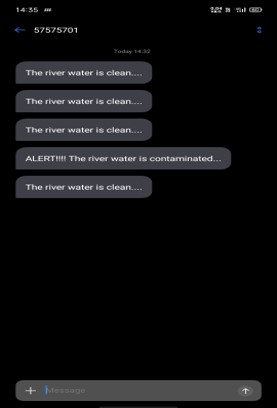


**SOURCE CODE :**

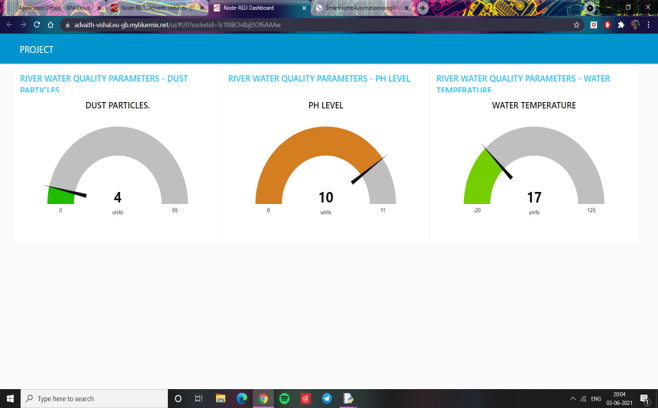
|  |  |
| --- | --- |
| import wiotp.sdk.device |  |
|  | import time |
|  | import random |
|  | myConfig = { |
|  | "identity": { |
|  | "orgId": "fy2tn2", |
|  | "typeId": "ESP32", |
|  | "deviceId":"12345" |
|  | }, |
|  | "auth": { |
|  | "token": "12345678" |
|  | } |
|  | } |
|  |  |
|  | def myCommandCallback(cmd): |
|  | print("Message received from IBM IoT Platform: %s" % cmd.data['command']) |
|  | m=cmd.data['command'] |
|  |  |
|  | client = wiotp.sdk.device.DeviceClient(config=myConfig, logHandlers=None) |
|  | client.connect() |
|  |  |
|  | while True: |
|  | dpar=random.randint(0,50) |
|  | ph=random.randint(6,10) |
|  | temp=random.randint(-20,125) |
|  | myData={'dustparticles':dpar, 'phvalues':ph, 'watertemperature':temp} |
|  | client.publishEvent(eventId="status", msgFormat="json", data=myData, qos=0, onPublish=None) |
|  | print("Published data Successfully: %s", myData) |
|  | client.commandCallback = myCommandCallback |
|  | time.sleep(10) |
|  | client.disconnect() |

**UI OUTPUT :**

**MOBILE OUTPUT**



**WEB UI OUTPUT**



THANK YOU