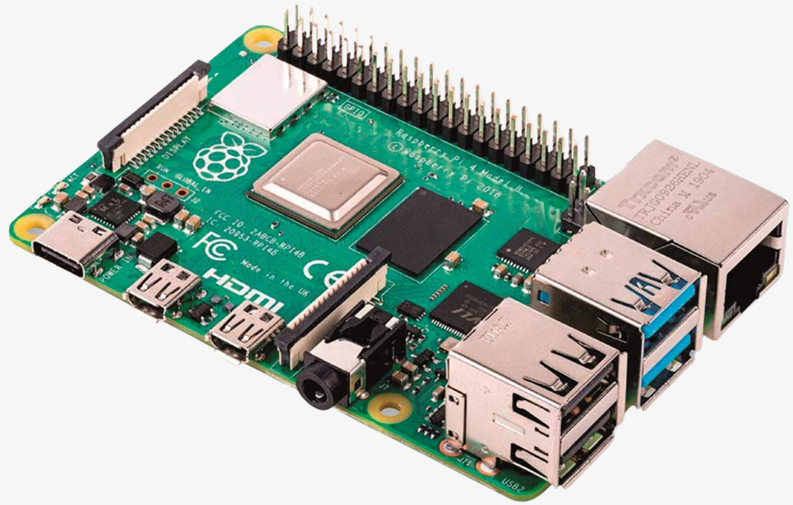
Remove Watermark Wondershare PDFelement

TECHWIZ
EMPOWERING I.T.

Water Quality Tester



Wondershare PDFelement

Project Guide

Aptech LEARNING
Unleash your potential

Aptech Korangi

Remove Watermark Wondershare PDFelement

Group Members

From Left to Right

Abdul Rafay Iqbal, Hanniel Anan, Muhammad Arsalan, Muhammad Nabeel Nadeem

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Project Supervisor

Engr. Gulraeez Gulshan

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Problem Definition

Environmental regulations require the monitoring of the environmental state of the West and Rhode River in order to preserve or improve its water quality. The current system in place for the West and Rhode River water basin requires travel to 32 locations on the West and Rhode Rivers. At each location a manual sensor sample for dissolved oxygen, conductivity, and bacteria are recorded by hand. Also, a rough estimate of turbidity is recorded using a Secchi disk. Testing occurs once a week during the months from May to October, where a set of volunteers would survey sampling sites on the West River and another set of volunteers would sample on the Rhode River. The process of travelling and collecting data takes two hours to complete. Upon completion; the manually recorded data is then given to a webmaster for input into a web server. The water collected for bacteria sampling is sent to a lab at a nearby community college. There is an apparent time delay between each of these weekly cycles, and there is an apparent chance that data may be incorrectly recorded or lost. Because of these possibilities, the River-Keeper has very little time to investigate and act on poor sources of water quality, nor he have the ability to accurately gauge the West and Rhode Rivers overall current state. There are a limited number of parameters tested in the current system such as pH, Turbidity and conductivity. Parameters such as, salinity, phosphorous, and nitrogen, which contribute to water quality, are not tested

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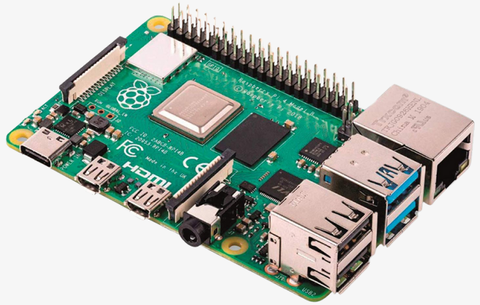
Components Used

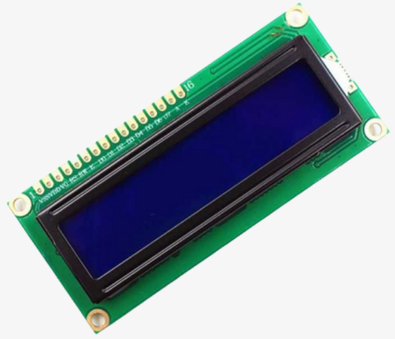
Turbidity Sensor



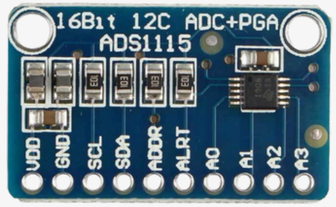
Raspberry PI 4 Model B 4GB

Water Flow Sensor

PH Sensor



LCD 16x2



ADC 1115

TDS Sensor

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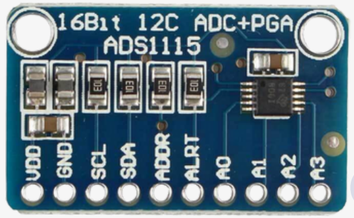
Flow Diagram

Turbidity Sensor

Water Flow Sensor

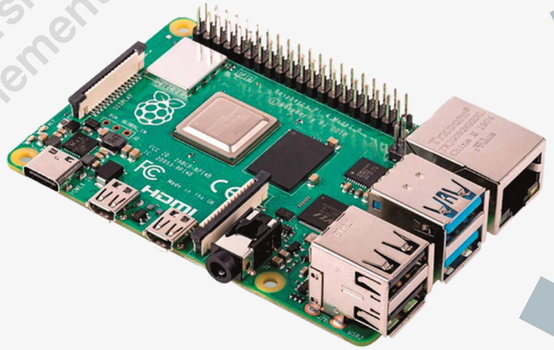
pH Sensor

TDS Sensor

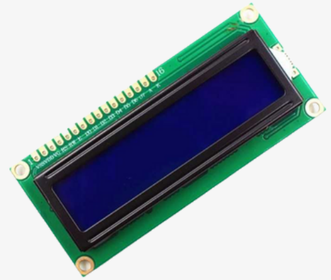


ADC 1115

Raspberry PI Model 4GB



Sending Alert



LCD Display

1 **Values from Different Sensors**

2 **Digital Values are converted to Analoge Values**

3 **Data processing on Raspberry PI 4**

4 **Output Display**

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#	Component	Qty	Price
1	Raspberry PI 4 Model B 4GB	1	PKR 55000
2	ADC 1115	1	PKR 450
3	TDS Sensor	1	PKR 3500
4	Turbidity Sensor	1	PKR 2800
5	pH Sensor	1	PKR 6800
6	LCD 16x2	1	PKR 450
7	Water Flow Sensor	1	PKR 750
8	Jumper Wire	3	PKR 450
9	Breadboard	1	PKR 200
10	HDMI to Mini HDMI (Female)	1	PKR 500
11	HDMI to VGA	1	PKR 400
12	Raspberry PI Casing	1	PKR 850
13	Project Casing	1	PKR 3500
14	Conveyance	1	PKR 3000
15	Miscellaneous	1	PKR 3000
Total			**PKR 81650**

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Project Cost

PKR 81650

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Software/Tools Used

For 3D Modeling

For GPIO Programming

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For Schematic Diagram

For Guide Designing

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3D Model of Project