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Wireless Controlled MultiplesTanks used Raspberry pi

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Abstract: *This Project actual Flexible to control means monitor system embedded microcontroller with internet protocol connectivity for an access the device from a long distance, such system not used dedicated PC with respect to similar system and given us marvels communication protocol to control and monitor instead of manual switching where its functionality control fully wireless.*
Keywords- *PC, IoT, Valves/Actuators, Raspberry pi*

I. Introduction

In day to day life everyone connected with /operated device like Smart phone ,television set , industrial Sensors &Valves as well as actuator to the (Internet) broadband service link to IoT based ,such IoT build new dimensions in all around electronic gazet.As an IoT based technology in an industries connected until this date surplus node connection in billion for an easily access and effective flexibility. This IoT based system basically a backbone using combination of Zig-Bee, Wi-Fi, Power line Communications to provide effective bidirectional communication, where its control from a long range, Fast response with low power& better dada rate(Information) so for end user also handle such system effectively.

II. Material And Methods

Industrial process control using IoT with Raspberry pi is an automation semi and fully controlled and monitor ,Where the utility grid connected sensors such system exhibits when person is away from work station and user gets effective information on his device. Beside this advanced technology like an (WSN) then failures chance gets decreased and increased productivity, so industrial process Monitor by using Raspberry Pi & Wireless communication.

This system is with the Raspberry Pi s used to control multiple valves system in single step so it's vary adequate and as well control/ track temperature, Voltage Current, Voltage also such system .in such techniques its possible all sensor data are collected through internet & other platform also. These systems demonstrate successful measurement of water controls from multiple tanks.

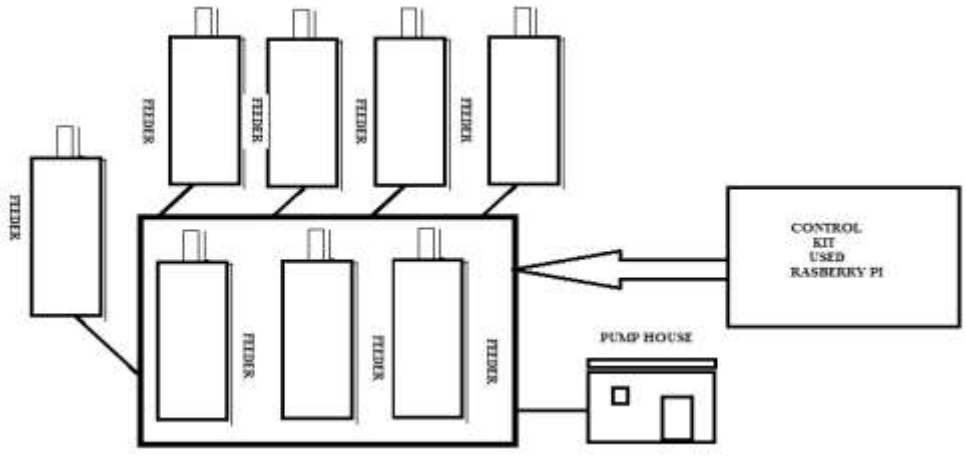


Fig- Multiples Tanks Control as used Raspberry -pi

Inclusion (include for Automation):

1. Flexile to control Max. Level.(No limit)
2. To suitable for immiscible liquids.
3. Work longer and faster so improved quality.
4. More efficient to possible all liquid materials.

5. Improve safety and shorter workweeks for labors
6. Fully utilized Hardware and software where integrating industrial machinery to automatically perform task.

Exclusion (In Automation not admitted)criteria:

1. System Complexity increased as increased nodes.
2. Automation based on preexisting rules so solution generally don't cope well.
3. Coding skill is one of limitation in automation.
4. Less versatility & Large initial investment.
5. Preventive maintenance cost is very high.
6. Network Issue creates service down.

Procedure methodology

As shown in the basic block diagram, the conductive probe acting as a level sensor are located at different area to control level in tanks. The common electrode is provided with 12 V DC .If sensors deep in the water will shows level sequentially 0, 1, 2, 3, 4, etc.for all tanks which is to be control. Such indication we easily gets in % form also such level given to the control section, so conditional logic will develop which helps to gets the idea about tanks level(for Fluid/Water/Gas).Such control circuit is also provided with motor protection circuit with high and low voltage level window also suitable control motor with relay control (for avoid dry run motors pump).

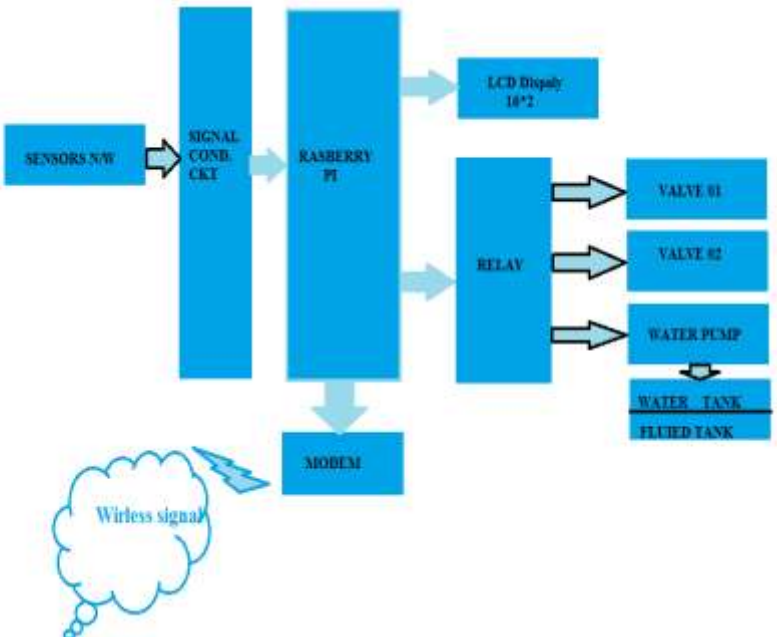


Fig-Basic blockfor Multiples Tanks Control as used Raspberry –pi

a) A Water flow sensor (YF-S201): Here the number of typesvalve is present in actual running/processing industrial area. Here Valve will ON or OFF as per requirement. Here water flow sensor will sense the water flow and SMS is send to user accordingly.

b) Signal conditioning: All the outputs of sensors are given to Signal conditioning. Here the manipulation of a signal in a way that it prepares it for the next stage of processing. The function of signal conditioning is to make the output of sensors acceptable to microcontroller.

c) Raspberry Pi: itis considered a self-contained system with a processor, memory and peripherals and can be used as an embedded system. Here the controlling relay, water pump and GSM module and 16*2 LCD display is run by system. It is heart of system.

d) Relay: Relays are electromechanical switch that open and close circuits electromagnetically. Relays control valve which is further control the level.(Switching action take place)

e) Also GSM modem:A modem is a specialized type of modem which accepts a SIM card, and operates over a subscription to a mobile operator, just like a mobile phone. Here microcontroller gives commands to GSM modem and accordingly a text message is send to user.

Table 1 Valve Control Status

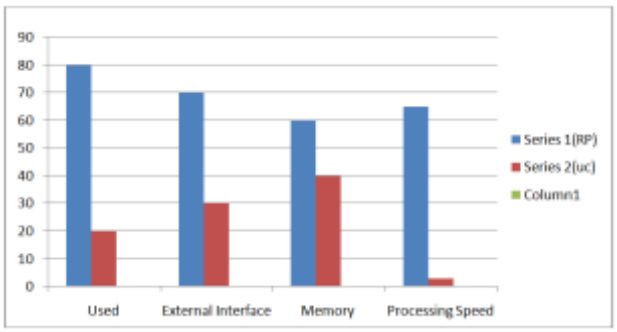
Message Display	Water Valve Status	Fluid/Oil Valve Status
Valve 01 ON	√	X
Valve 02 ON	X	√
Valve 01 OFF	X	X
Valve 02 OFF	X X	

Table 2 Status of Tank Storage and Motor

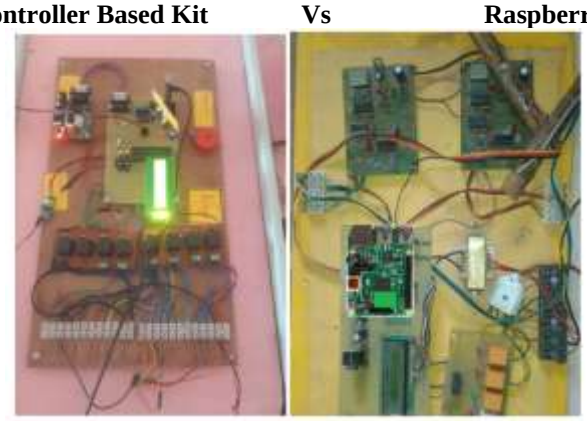
Status of Tank	Voltage Level	Motor
Empty	Low/0 Level	ON
Full	High/1 Level	OFF

Statistical-analysis

In Industrial process quietly seen some major difficult task mostly to control various parameters like Flow, Max.Temperature, Pressure, Force so as per survey usedtechnique controller like Raspberry Pi over Microcontroller contribution to GDP about eighty percent (80%)of total GDP &Twenty percent (20%) of total used of microcontroller .So Wireless technology used some vibrant controller in instrumentation plays an important role. Over above 75 % of some user takes benefit of it.We also get us information As per 2nd advice estimate by Central Statistic Office (CSO).As per predictionshare of used and allied sectors is estimate to be twenty percent (20%) percent of the Gross value added during 2018-19.



Microcontroller Based Kit Vs Raspberry Pi Kit



Features

- CPU: Quad-core 64-bit ARM Cortex A53 clocked at 1.2 GHz.
- GPU: 400MHz VideoCore IV multimedia.
- Memory: 1GB LPDDR2-900 SDRAM (i.e. 900MHz)
- USB ports: 4.
- Video outputs: HDMI, composite video (PAL and NTSC) via 3.5 mm jack.
- Network: 10/100Mbps Ethernet and 802.11n Wireless LAN.

III. Conclusion

Monitoring of water level or any liquids level in house hold or industrial application say chemicals company its important. Because this liquid are quite expensive .In oil industriesalso, the annunciation of level is important in Hotels, Hostels, Commercial building, Apartments, it become very tedious & counter some to observe the water level over head tanks and sump tanks and also switch ON/OFF pump manually,also if the voltage given to the motor is out of the safe limit the pump should be stops. In order to overcome all such losses auto control levels is to be developed.

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