SMART COVID-19 PATIENT MONITORING WIRELESS ROBOT

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ABSTRACT:

In this project, COVID nineteen center observation and management system have linear unit planned and integration of totally different senso sensors er. The sensors enforced will communicate with information assortment and the processing unit. so work aimed to propose COVID nineteen centre management w centerocontroller primarily based approach to handle medical services and patient observation and treatment work flow. In thworkflowted model, Atmega controller, MAX30100 Pulse measuring instrument detector and temperature detector (DHT11) square measure integrated. A system has capability to moni canD nineteen centre services and patient observation via remote affiliation. It is evaluated with temperature sensors connected to live temperature of patients. additionally, once patient get fever over regular valua e, Associate in Nursing alert was sent to autthe hority during a pace. when results, it's indicated that the developed system has effective potential to work in pandemic scenario and has technological practicableness. The advantages of enforced analysis ways square measure helpful in digital health management in pandemic situation..

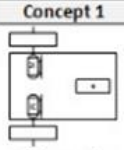
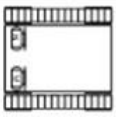
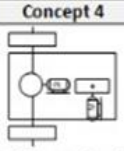
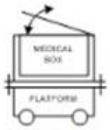
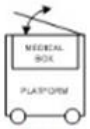
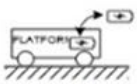
Keywords: Wireless operascenariost, MAX30100 pulse measuring instrument detector and temperature detector, patient observation via remote affiliation.

INTRODUCTION:

Overview:

Following newest artificial intelligence trends 2019 updated by the ROBO world artificial intelligence & Automation Index, today, attention accounts for 100 percent of the ROBO Index, with attention on artificial intelligence steering and surgery, laboratory automation, genomics, and AI attention applications. the world came over 1st} within the first eleven months of 2018 [1]-[3]. This means that Robots for health examination that supported to healing up patients have appeared over ever, it plays a precise role in human life. In virtually countries these days, specifically developed countries such as Japan and European, Robots began substitution humans even do higher than human has done. several robots square measure usually used in producing processes, dangerous environments that harmful for humans. In health eenvironments this can be simply laid low with infectious diseases, fatal diseases, these diseases might will increase the chance of diseases transmission human through human. Especially, from World Health Organization(WHO) concerning the current eruption of novel coronavirus (2019-

nCoV) that was 1st reported from metropolis, China, the acceleration of trendy technologies in isolation, medical specialty, health check and treatment has ne'er been a lot of and a lot of targeted on the planet, it's price noting that the entry of robots a comprehensivesupporting remote medical examination and treatment. Otherwise, nurses, help and doctor operating in hospital and the nursing house square measure not qualified enough thanks to coaching information or several hospitals lack serious medical workers. Especially, Vietnam has a Brobdingnagian downside of lacking medical instrumentation and specialised doctors aren't enough for allotment to all or any provinces of Vietnam, the most vital isn't having any doctor or treatment square measure being provided in time to emergency issues or space typically affected by natural disaster that had become a lot of troublesome than ever. Moreover, there square measure increasing of violence violent patients assaultive doctors, its build several doctor operating in Vietnam as well as foreign doctors upset this might be the explanation why doctors have quit their jobs to guarantee their own safety. Following these necessary functions higher than, we tend to would like to analysis and style Telemedicine golem. This golem is some spectacular leads to taking care for the eld ofand patient, serving to observe kids once their oldsters not being home and supporting doctor to take care patients around hospital with solely sitting on one location. Medical care by golem facilitate in Vietnam is still quite new and strange thus that to form plied this golem field in Vietnam want to pay a heap of time and cash for producing, this golem might not solely save time and budget for treatment however conjointly cut back cross-species transmission, (CST) or upshot.

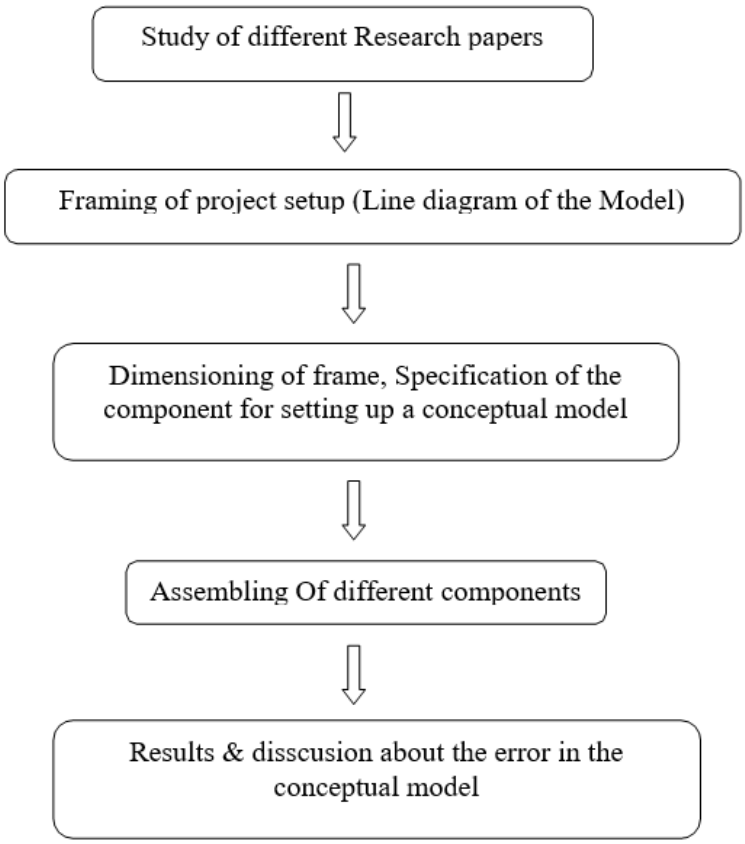
Functions	Design Concepts			
	Concept 1	Concept 2	Concept 3	Concept 4
Moving platform	 Differential, a passive wheel	 2 x Chain slides	 4 x Omni wheels	 Differential and active wheel
Screen Justify	 Translation motion	 Rotate	 Translation and rotate	 Tilt and Pan
Carrying Medical and Specimens	 Removable	 Freeze	 Following	 Slide from platform
Charging	 Station	 Wireless	 Using wire	 Exchange

OBJECTIVES

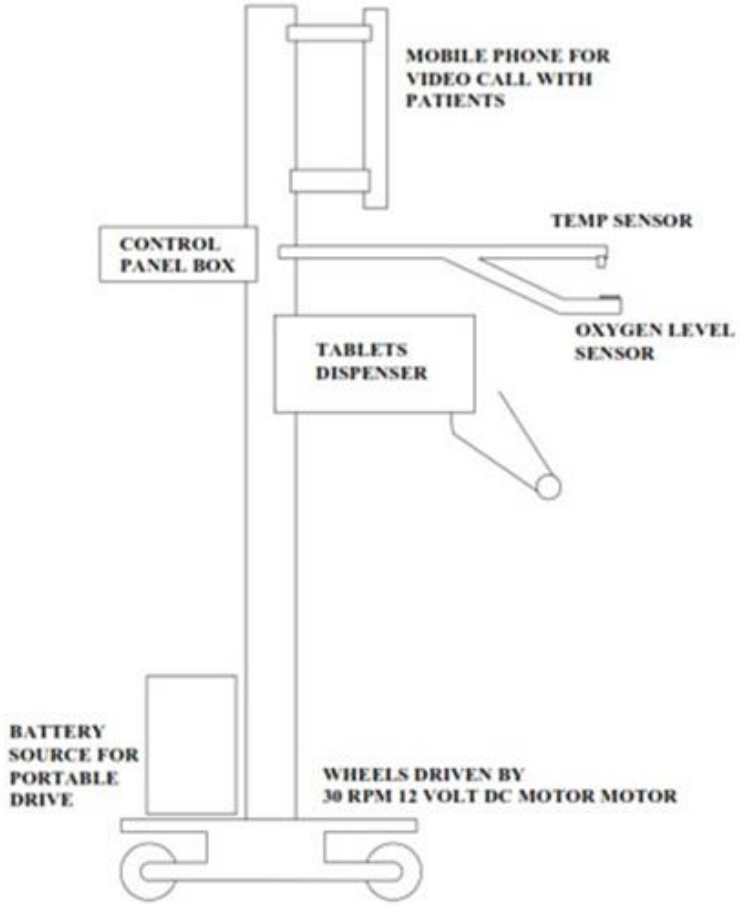
To Operate golem wirelessly. To develop the wireless operated golem. to live temperature of patient. to live atomic number 8 level of patient. To dispense pill from the dispenser box.

METHODOLOGY:

Automated system for fastening is that the needed for production as build IN India is on higher priority. thus so as to work out the assembly rate of china we've got to implement such machine during a higher scale. thus if machine price is unbroken lower it'll be in higher demand. thus higher than methodology is employed to develop the machine-controlled system.



SYSTEM DIAGRAM



COMPONENTS AND WORKING:

1. DC motor (45 rpm)

In this machine 2 DC motors square measure used and these motors square measure used to management the direction of golem.

2. Battery (4.5 mA)

We square measure victimisation secondary sort battery. it's reversible sort. A battery is one or a lot of chemistry cells, that store energy and build it offered as electrical phenomenon.

3. Microcontroller (Atmega)

It consists of fourteen digital input/output pins during which half dozen will be used as PWM outputs, half doz1en analog inputs, sixteen MHz quartz, a USB affiliation, an influence jack, Associate in Nursing ICSP header and a button.

4. Relay

A relay is an electrically operated switch. Current flowing through the coil of the relay creates a magnetic field that attracts a lever and changes the switch contacts. The coil current can be on or off so relays have two switch positions and they are double throw (changeover) switches.

5. MLX90614 ESF Non-Contact Human Body Infrared Temperature

The MLX90614 ESF is an Infra-Red thermometer for non-contact temperature measurements. Both the IR sensitive thermopile detector chip and the signal conditioning ASIC are integrated into the same TO-39 can. The Integrated MLX90614 GY-906 is a low noise amplifier, 17-bit ADC, and powerful DSP unit thus achieving high accuracy and resolution of the thermometer. The user can configure the digital output to be PWM. As a standard, the 10-bit PWM is configured to continuously transmit the measured temperature in the range of -20 to 120 °C, with an output resolution of 0.14 °C.

CONCLUSION:

24x7 Patient monitoring can be done Infection of doctors can be minimized.Robot can be utilized for material handling such as water, Food, Medicine etc.

REFERENCES:

1. K. Ashton et al., “That Internet of Things thing,” RFID Journal, vol. 22, no. 7, pp. 97–114, 2009.

2. Z. H. Ali, H. A. Ali, and M. M. Badawy, “Internet of Things (IoT): definitions, challenges and recent research directions,” International Journal of Computer Applications, vol. 128, no. 1, pp. 37–47, 2015.

3. H. HaddadPajouh, A. Dehghantanha, R. M. Parizi, M. Aledhari, and H. Karimipour, “A survey on Internet ofThings security: Requirements, challenges, and solutions,” Internet of Things, p. 100129, 2019.

4. S. R. Islam, D. Kwak, M. H. Kabir, M. Hossain, and K.-S. Kwak, “The Internet of Things for health care: acomprehensive survey,” IEEE Access, vol. 3, pp. 678