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VIRTUAL REALITY PROJECTOR FOR HOME APPLIANCES

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Abstract— Virtual reality (VR) refers to a computer-generated simulation in which a person can interact within an artificial three-dimensional environment using electronic devices, such as special goggles with a screen or gloves fitted with sensors. Virtual reality will become even more accessible within everyday jobs with people using it for medical training, new building designs, training and learning and other experiences. A smart home is one in which the various electric and electronic appliances are wired up to a central computer control system so they can either be switched on and off at certain times. Security is one of the biggest reasons why many people are interested in smart homes. Lots of people like simple, off-the-shelf, plug-and-play systems like X-10: buy it, take it home, plug it in, and off they go. In this project we are going to implement teleportation system based on virtual reality to access the home appliances. We have proposed a system which it is used to ON or OFF the switches in virtually by seeing the images. By using these images accessing method the data transmission is very fast based on wireless data transmission system. Key words: virtual parameter, IOT.

I. INTRODUCTION

Virtual Reality (VR) is the use of computer technology to create a simulated environment. Unlike traditional user interfaces, VR places the user inside an experience. Instead of viewing a screen in front of them, users are immersed and able to interact with 3D worlds. By simulating as many senses as possible, such as vision, hearing, touch, even smell, the computer is transformed into a gatekeeper to this artificial world. The only limits to near-real VR experiences are the availability of content and cheap computing power. This paper explores the use of Virtual Reality (VR) in wireless data transmission. This system is used to ON or OFF the switches in virtually by seeing the images. By using these image accessing method the data transmission is very fast.A virtual device, in operating systems like Unix or Linux, refers to a device file that has no associated hardware. This type of file can be created with the mknod command, for instance. A virtual device mimics a physical hardware device when, in fact, it exists only in software form. Therefore, it makes the system believe that a particular hardware exists when it really does not.

II. RELATED WORKS

A. Sub-1 Toward Virtual Reality-based Evaluation of Robot Navigation among People (2020)

This paper explores the use of Virtual Reality (VR) to study human robot interactions during navigation tasks by both immersing a user and a robot in a shared virtual space. VR combines the advantages of being safe (as robots and humans interacting by the means of VR but can physically be in remote places) and ecological (realistic environments are perceived by the robot and the human, and natural behaviors can be observed). Nevertheless, VR can introduce perceptual biases in the interaction and affect in some ways the observed behaviors, which can be problematic when used to acquire experimental data. In our case, not only human perception is concerned, but also the one of the robots which requires to be simulated to perceive the VR world. Thus, the contribution of this paper is twofold.

B. IOT Based Work in progress towards the Robotic Training for the future Monitoring Internet of Things (IoT)

Advancements in Artificial Intelligence (AI), Information Technology, Augmented Reality (AR) and Virtual Reality (VR), and Robotic Automation is transforming jobs in the Architecture, Engineering and Construction (AEC) industries. However, it is also expected that these technologies will lead to job displacement, alter skill profiles for existing jobs, and change how people work. Therefore, preparing the workforce for an economy defined by these technologies is imperative. This ongoing research focuses on developing an immersive learning training curriculum to prepare the future workforce of the building industry.

C. Robot supported virtual and Augmented Reality

In this dissertation different aspects from research in the fields of Tangible User Interfaces, encounter-type devices and Passive Haptics are combined to investigate the benefits that robots offer for providing haptic feedback in Virtual and Augmented Reality. Robotic elements like micro drives

and robotic arms are employed for the actuation of passive or active physical objects.

D. The Understanding Human Robot Interaction in Virtual Reality

Interactions with simulated robots are typically presented on screens. Virtual reality (VR) offers an attractive alternative as it provides visual cues that are more similar to the real world. In this paper, we explore how virtual reality mediates human-robot interactions through two user studies. The first study shows that in situations where perception of the robot is challenging, a VR display provides significantly improved performance on a collaborative task. The second study shows that this improved performance is primarily due to stereo cues. Together, the findings of these studies suggest that VR displays can offer users unique perceptual benefits in simulated robotics applications.

I. PROPOSED SYSTEM

Virtual reality (VR) offers an attractive alternative as it provides visual cues that are more similar to the real world. This paper explores the use of Virtual Reality (VR) in wireless data transmission.

This system is used to ON or OFF the switches in virtually by seeing the images. By using these images accessing method the data transmission is very fast. If we spend any time looking out on the horizon for technologies that show real potential for positive impact, it's hard to find any more intriguing than augmented and virtual reality. In that way physical props can be collocated with virtual counterparts to allow high fidelity, natural interaction.

A. Zigbee

The technology defined by the Zigbee specification is intended to be simpler and less expensive than other wireless personal area networks (WPANs), such as Bluetooth or more general wireless networking such as Wi-Fi. Applications include wireless light switches, home energy monitors, traffic management systems, and other consumer and industrial equipment that requires short-range low-rate wireless data transfer.

Fig. 1 Zigbee Transmitter.

B. *RS232*:

The RS232 connector is a port used for data exchange between equipment. It was designed for data exchange between DTE (Data Terminal Equipment) or PC and DCE (Data Communication Equipment) or MODEM. Although RS232 is later replaced by faster USB (Universal Serial Bus) it is still popular in some areas.

The term RS232 stands for "Recommended Standard 232" and it is a type of serial communication used for transmission of data normally in medium distances. It was introduced back in the 1960s and has found its way into many applications like computer printers, factory automation devices etc.

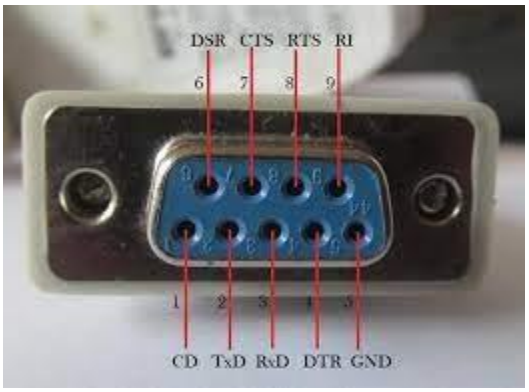


Fig. 2 RS232

C. UART receiver:

A universal asynchronous receiver-transmitter is a computer hardware device for asynchronous serial communication in which the data format and transmission speeds are configurable. It sends data bits one by one, from the least significant to the most significant, framed by start and stop bits so that precise timing is handled by the communication channel. The electric signaling levels are handled by a driver circuit external to the UART. Two common signal levels are RS-232, a 12-volt system, and RS-485, a 5-volt system.

It was one of the earliest computer communication devices, used to attach teletypewriters for an operator console. It was also an early hardware system for the Internet.

A UART is usually an individual (or part of an) integrated circuit (IC) used for serial communications over a computer or peripheral device serial port.

Fig.3 UART receiver

D. Arduino Uno:

The Arduino Uno is an open-source microcontroller board based on the ATmega328 which is used to upload(burn) a program to the microcontroller using a USB cable. It also has a 14 input and output pins and regulated power of 5V. Reset button which is present on the board can be used to reset the Arduino microcontroller.

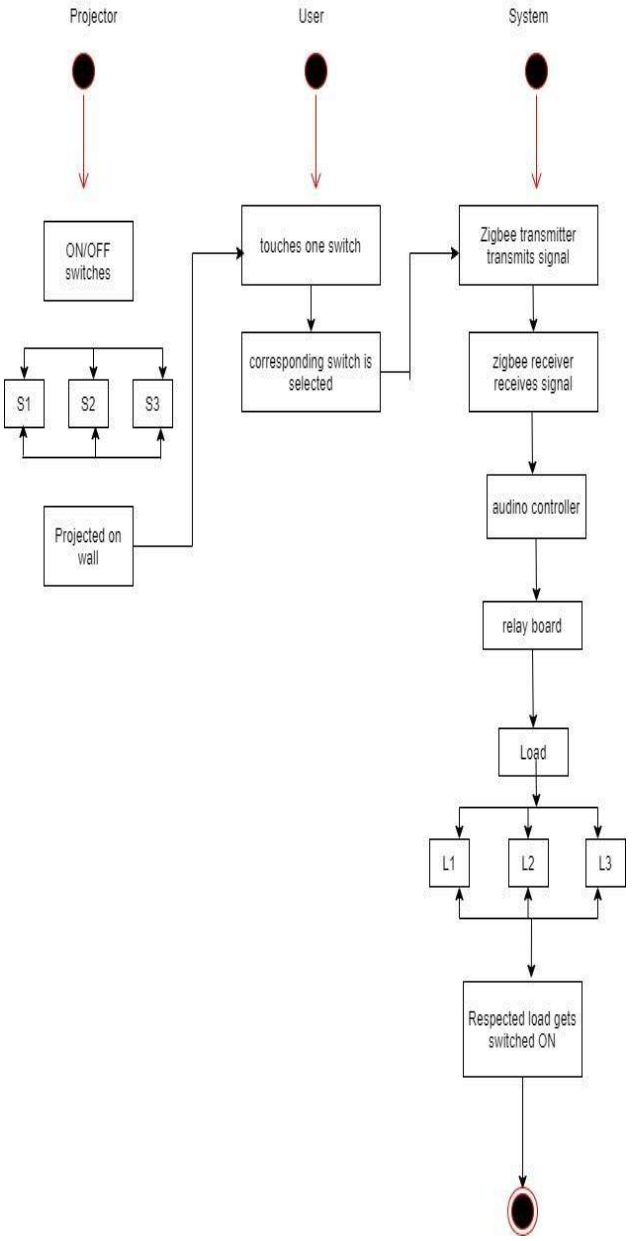
Fig.4 Arduino Uno

E. Relay Board Sensor:

Relay boards are computer boards with an array of relays and switches. They have input and output terminals and are designed to control the voltage supply. Relay boards provide independently programmable, real-time control for each of several onboard relay channels. Product specifications include the number of channels, physical dimensions, input range, and output range. Relay boards with opto-isolators provide isolation between control signals and output controls. Software-based tools can be used to write batch files, and light emitting diodes (LEDs) provide are used as visual indicators. Most relay boards have 2, 4, 8 or 10 channels. Each channel has a relay switch with an output rated up to a limit such as 250 VAC / 5 amps. Some relay boards have an additional socket for a power pack connection. Other can be controlled remotely, or via radio frequency (RF). RF relay boards may use an auto-roll algorithm to prevent the unauthorized interception of transmissions. RF relay boards with transmitters and receivers use multiple channels

Fig . 5 Relay Board

II. METHODOLOGY



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Interactions with simulated robots are typically presented on screens. Virtual reality (VR) offers an attractive alternative as it provides visual cues that are more similar to the real world. There are three main types of electrical hazards: electric shock, electrical burns, and arc blasts (the effect of blasts). To deal with this problem we designed this system. In this paper, we propose an IOT-based system for patients with the not risk of electrical devices which make risk to use. This system is used to ON or OFF the switches in virtually by seeing the images. By using these image accessing method the data transmission is very Fast.

III. RESULT

The Virtual Reality (VR) technology offers users the possibility to immerse and freely navigate through virtual worlds. The effectiveness and efficiency as well as user preferences of the presented techniques are determined. This project is used for physically challenged person to the condition of being unable to perform a task or function because of a physical or mental impairment. In this project we are using images instead of using physical switches so that the data transmission is very fast.

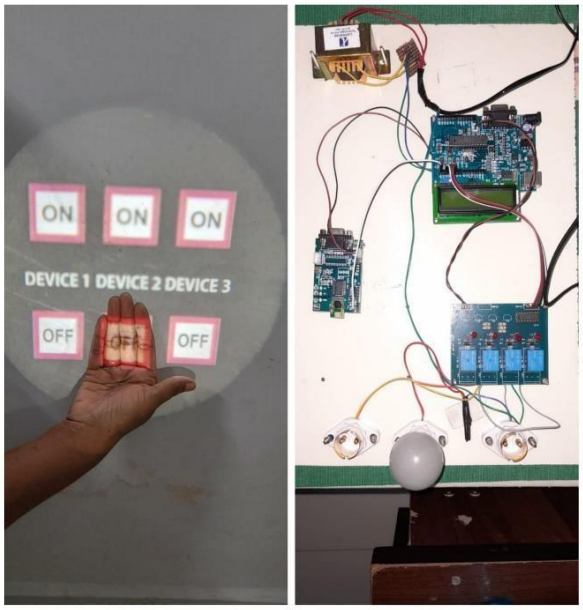

Fig. 6 Output of the project

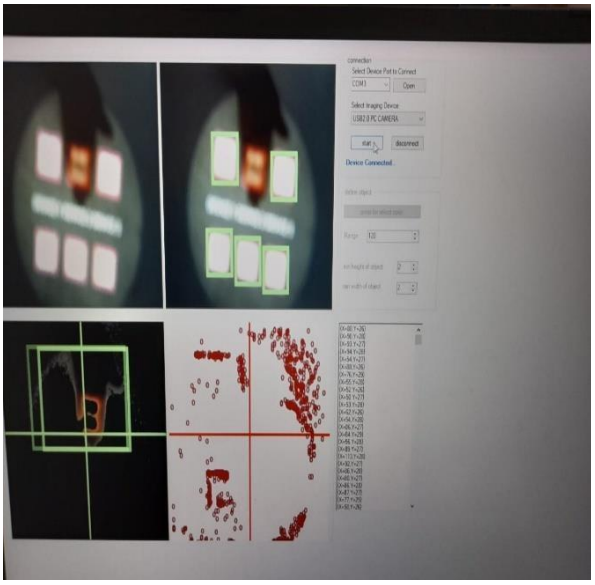

Fig.7 Output of the project

IV. FUTURE SCOPE

In future, Virtual Reality is one of the technologies with the highest projected potential for growth. Our goal to use VR technologies to make smartphones smarter, and many more smart tools like VR goggles, VR devices will flood the market. With VR, we can enjoy history (which is boring theoretically), can explore the space (from Earth), can see the surface of the moon in 3D and much more.

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