

‘SARINI using IOT’

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Abstract: ‘SARINI’ is a system that provides the required amount of comfort and exibility to the user by reducing the human e ort. The user is provided with a provision to use the display or read the books while laying down on the bed so that the user studying or working for a long period of time does not face any physical problems of Back and Neck. Also, using the Home Automation user gets control over home appliances and does not need to manually get up and access it, giving them comfort so the user can focus on their work without any disturbance. The SARINI comes with the following features and is controlled with sensors and motors which are monitored by microcon-trollers like Arduino and Raspberry Pi.

Keywords: Raspberry Pi., Arduino, User, Interest

I. INTRODUCTION

The purpose of the invention is to automate and add flexibility and comfort to the user's experience that eventually leads to a smart living environment. User has the option to use the ‘‘SARINI’’ according to their comfort and enables them to do their work for a long period of time without facing any physical problems. It provides privacy to the user as only authenticated users can access the features provided by ‘SARINI’ like adjustable height and display mechanism, home automation, Fan, Lamp, etc. The system deals with the enhancement of the existing tables with more comfort and flexibility included within it. At first, the user needs to be registered to the Finger impressions through the fingerprint module mounted on the table to access all the prominent features of the ‘‘SARINI’’ which are automated. The finger authorization is placed on top of the table for comfortable access and all the components are connected to it, so it acts like central access to all components. All the components of the table are been controlled individually as per the users' choice and need through a control unit.

II. LITERATURE SURVEY

‘‘Access control of door and Home Security by Raspberry Pi through internet’’ ; Md. Nasimuzzaman Chowdhury ; Md.Shiblee Nooman ; Srijon Sarker.

Description: In the present age Internet of things (IOT) has entered a golden era of rapid growth. The Internet of things is a concept that aims to extend the benefits of the regular Internet—constant connectivity, remote control ability, data sharing, and so on—to goods in the physical world. Things are connected with the internet. This concept can be used to manage the security issues in a cost-effective way. In this paper work a system is being developed to connect any door with the internet, so that the access control system can be controlled from anywhere in the world. In case one is not at home and an outsider is at door then the authorized person will be notified about the outsider via text and the person can see the outsider from the web through the camera and the system will take a picture of the outsider and keep a record by sending an attachment through E-mail or text. If the authorized person wants to give a message the outsider it can be sent easily through the message and it will be seen in a screen on the front face of the door. The door lock can be operated through the internet. With the help of this system an evidence of the outsider can be kept as a record if any emergency case or problem occurs.

‘‘Home Automation System using android and Wi-Fi’’ ; R.S.Surya-vanshi; KunalKhivensara ; Gulam- Hussain ; Nitish Bansal ; VikashKumar.

Description: Smart home is an observing, controlling and investigating service which includes Wireless transmission technology and electronic sensor innovation. It allows the client to get the full scope of services, the opportunity for continuous monitoring and controlling of the home environment. A web server is created which consists of screens for home environment parameters, for example, house temperature, light intensity, LDR sensor, PIR sensor, motion detection, fire detection, smoke sensor, humidity sensor and LPG gas leakage for monitoring and controlling. In this project Raspberry Pi3B+ is used for monitoring, processing, controlling various sensors and communication with web server, because of its new features and ease of communicating through Internet of Things (IoT).

“Raspberry and Wi-Fi Based Home-Automation” ; Bhagya lakshmi ; G.Divya ; L.Aravinda.

Description: In current days, as the technology improves every day, every-one seems to automate most of the things to take benefit in providing easiness in life, secure and saving power. The objective of this paper is to develop a home automation system based on Raspberry Pi by reading the message body of mail which we are sending. Here the body of the receiving mail is read by the algorithm put into Raspberry Pi and it will resend the acknowledgement to that mail_id, if it is successfully sent or not. This algorithm is created in python, which is default programming language provided. Store these results in internet by creating new channel API in thing-speak, which is an IoT system.

III. PROPOSE SYSTEM

The system deals with the enhancement of the existing tables with more comfort and flexibility included within it. At first, the user needs to be registered to the Finger impressions through the fingerprint module mounted on the table to access all the prominent features of the ‘SARINI’ which are automated. The finger authorization is placed on top of the table for comfortable access and all the components are connected to it, so it acts like central access to all components. All the components of the table are been controlled individually as per the users' choice and need through a control unit. Sarini comes with a flexible display unit mechanism that can be used by the user according to their comfort and need. The display unit comes with a book holder at the back of the display unit. The user can use the display even when laying down on the bed and also read the book by turning back the display unit provided with a book holder behind it. The control unit will show different components of SARINI and the user will select which component to be used.

IV. SYSTEM ARCHITECTURE

Following diagram is our system’s architecture diagram:

1. It Provides the security to the user by means of finger-print authentication
2. 7(Seven) Segment Display to show the status of authentication.
3. It has Display unit.
4. You can also use the backside of display unit where there is a book holder for reading purpose.
5. It has Audio system, Audio Jack and USB ports.
6. Inbuilt fan.
7. Inbuilt lamp.
8. Touchpad.
9. Foot-light controlled by body sensor.
10. Flexible table adjustment.
11. Wi-fi and LAN.
12. Home appliances can also controlled by using this System by using IOT.
13. Control panel. (For SARINI Height adjustment, Fan, Light, Mini oven).
14. Navigation keys. (For Controlling the movements of Display unit).
15. Power supply and Backup.

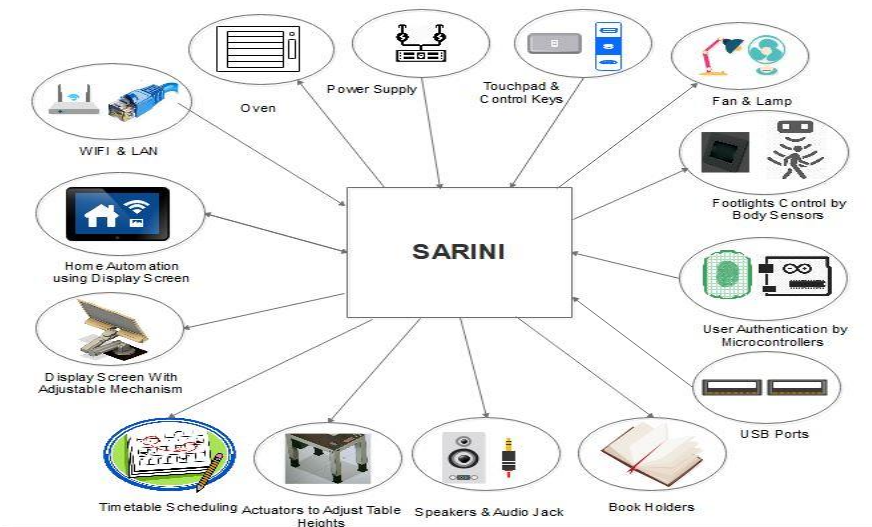


Figure 1: system architecture

V. METHODOLOGIES

Mathematical Model

Let

Initial State

S=Initial State of the Project

The System allows the user for authentication and if user is not register then it also allows for the registration.

Input:

Let FS, AR, PI, SS,7S

Where, FS be the Finger-Print device,

Ar be the Arduino,

Pi is the Raspberry Pi

SS be the movable Screen.

7S be the Seven Segment Display

Procedure

Step 1: At first, the user needs to authenticate with the fingerprint module(FS)

Step 2: after successful authentication the SARINI gets powered up and through the speakers of SARINI sounds “Login Successful” or “Please try again” upon the success or failure of authentication, respectively. The 7-segment display(7S) shows a “Login Successful” or “Authentication Fail” message. All the components get access to SARINI only after successful authentication.

Step 3: When there is a successful Authentication by user Screen will be Automatically up. And it will give access to that person.

Step 4: Now User Can use all the Components of SARINI which is managed by Arduino(Ar) And Raspberry-Pi (Rs)

VI. CONCLUSION

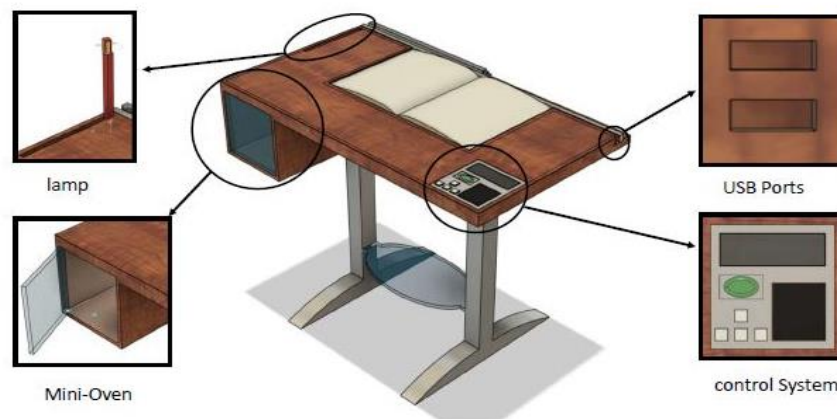
The purpose of the invention is to automate and add flexibility and comfort to the user's experience that eventually leads to a smart living environment. User has the option to use the “SARINI” according to their comfort and enables them to do their work for a longer period of time without facing any physical problems. It provides privacy as only authenticated users can access the features provided by ‘SARINI’ like Adjustable table, display, audio, etc.

VII. FUTURE WORK

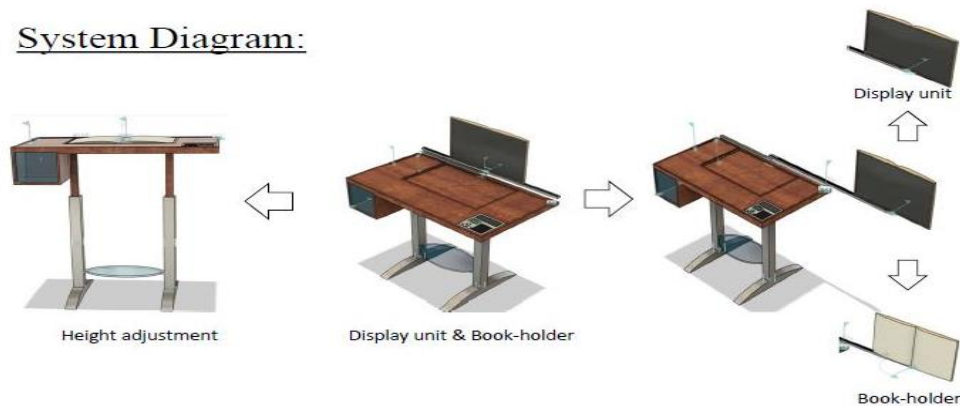
- Automated book holder and page turner.
- Improved mechanism with less complexity.
- Enhancement in connectivity of the devices and chipsets.
- Face Recognition for user authentication.
- Increase mobility.

VIII. RESULT

System Diagram:



System Diagram:



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