

SMART INTELLIGENCE OFFICE CHAIR

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Abstract

In offices related to software, working professors in schools, colleges, etc, people sit for longer hours. Due to this they suffer with many health issues like overweight, joint pain, back pain, etc. this has become an increasing problem now a days. To overcome this, the project is designed which is called as “intelligent office chair”. This chair instructs the person sitting on the chair if he/she sit for long duration. Also, this chair reminds the person to drink water or medicine in time and. To prove the concept practically, a proto type module is designed and developed using Arduino. IR sensor is also used to instruct the person, if he/she isn't sitting properly. In addition, a voice chip is also interfaced to the Arduino controller that gives voice announcements to drink water, medicine, etc. We present the implementation of an IoT (Internet of Things) based intelligent chair that combines an embedded system and android device.

1. INTRODUCTION

Recently, various systems and applications utilizing IoT technology have been developed to help people in addressing issues that occur in our everyday life. Most people today spend more than half of the day on chairs for various purposes such as studying, driving, or working. For this reason, modern people are afflicted with waist disease such as lumbar disc, hip twisting and scoliosis, which rarely occurred in the past. For this reason, many hospitals which specialize in treating spines have been established nowadays. In this project work, a Smart IoT Chair which supplements the limitations like sitting properly, taking breaks, drinking water, etc makes users sit correctly with recognition of their own current state by providing intuitive and visualized data in real time to Smartphone application. We can decrease back and hip pain caused by sitting for a

long time through dispersing the pressure on the back and hip by dimidiating correcting posture of a person sitting on the chair. Here we using free available open-source android app to update the position of the person sitting on the chair. The focus is on ease of use, and allowing simple data connections with little programming required.

The Smart IoT Chair implemented by this study can be used in various fields. First application that we are targeting is in games for leisure or for posture calibration. With these games, the goal would be to correct user's posture while enjoying games by directing appropriate sitting position opposite to the user's usual habit based on collected data. In addition, it can analyze sitting pattern of each individual and give user medical advices or stimulus such as vibration or sound. Furthermore, other Smart devices can also

be created by combining other furniture with this IoT device. (e.g., a bed which analyzes sleeping pattern, a sofa or kitchen the sensing ranges of our custom designed sensors, conduct thorough evaluation, deploy the chairs at a larger scale.

2. RELATED WORK

1. Posture Sensing smart chair.
2. Posture Detection Based on Force Sensors and Mobile Application.

It corrects the seating posture of a person, It reminds to take water and medicines in time. Somewhat high in cost. Efficiency of chair is less.

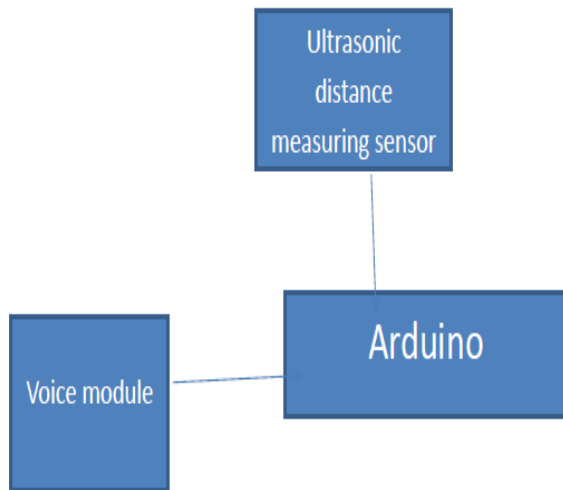
In posture sensing smart chair there are some gaps like it will detect posture of person, but it corrects that in the form of buzzer not in voice module, it was very complex to design. Coming to Posture detection based on force sensors and mobile application existing solution it was very complex to design. but these chairs won't give Immediate response about the posture.

3. IMPLEMENTATION

To overcome this, the project is designed which is called as "intelligent office chair". This chair reminds the person to drink water or medicine in time. To prove the concept practically, a proto type module is designed and developed using Arduino. IR sensor is also used to instruct the person, if he/she isn't sitting properly. In addition, a voice chip is also interfaced to the Arduino controller that gives voice announcements to drink water, medicine, etc. Due to increasing cases in health-related problems, especially in software sector because people seat for long time. And so may of people forget to take water and medicine in time because of their busy

schedule. So, to overcome this problem we design a chair which can correct the posture of a person, and it also remind to take water and medicine in time. In offices related to software, working professors in schools, colleges, etc, people sit for longer hours. Due to this they suffer with many health issues like overweight, joint pain, back pain, etc. this has become an increasing problem now a days. To overcome this, the project is designed which is called as "intelligent office chair". This chair instructs the person sitting on the chair if he/she sit for long duration. Also, this chair reminds the person to drink water or medicine in time and. To prove the concept practically, a proto type module is designed and developed using Arduino. IR sensor is also used to instruct the person, if he/she isn't sitting properly. In addition, a voice chip is also interfaced to the Arduino controller that gives voice announcements to drink water, medicine, etc. We present the implementation of an IoT (Internet of Things) based intelligent chair that combines an embedded system and android device. In offices related to software, working professors in schools, colleges, etc., people sit for longer hours. Due to this they suffer with many health issues like overweight, joint pain, back pain, etc. this has become an increasing problem now a days. To overcome this, the project is designed which is called as "intelligent office chair". This chair instructs the person sitting on the chair if he/she sit for long duration. Also this chair reminds the person to drink water or medicine in time. To prove the concept practically, a proto type module is designed and developed using Arduino. IR

sensor is also used to instruct the person, if he/she isn't sitting properly. In addition, a voice chip is also interfaced to the Arduino controller that gives voice announcements to drink water, medicine, etc.



Block Diagram

4. EXPERIMENTAL RESULTS

The intelligence office chair is a prototype and is mostly used in offices, schools, colleges etc. The main aim of the project is to avoid health problems like joint pain, back pain, overweight etc. And it gives notifications like drink water, take medicine



Business Model



Community interaction

5. CONCLUSION

At last, we have come up with a solution that smart intelligence office chair which probably saves a person from typical health issues which is of

- 1.Low cost.
- 2.Detects the seating posture of the person.
- 3.It will remind to take medicine and water in time.

So, these we are hoping by these smart chairs so many health issues can be avoided, due to busy schedule now days so many people are forgetting to take medicine and water in time.

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