

# Automated Smart Pillow for all Age Group

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**Abstract:- Many people suffer from sleep disorders as a result their quality of sleep decreases affecting their sleep as well as their day to day life. In this paper we propose an IOT based system that is personal automated pillow that helps the person suffering from insomnia and also helps person suffering from sleep this system is connected to phone through internet and it has massager embedded in it as well as the speaker is there which will work when alarm is turned on, the sound sensor will help to gather all the sounds and because of the sound the person can wake up, the massager has a time limit of 25 minutes afterwards it will turn off, this massager will try to sooth the mind and give a relaxing effect and help the person to sleep, as the phone is connected to pillow it can also control the electrical appliances, the speaker has a system in which one can play songs too which can make a person to sleep peacefully.**

- This will also work as an alarm as well as a massager which will soothe the mind and using this pillow the appliances can be controlled as well.

## III. EXISTING SYSTEM

The IOT based sleep quality monitoring pillow that tracks temperature, humidity, luminosity, sound, vibration. The pillow is able to forward the gathered information to server through a wireless router. It is very costly so it can't be afforded by all the people and it doesn't have many functions such as massager which soothes the mind of the person and help them to relax and fall asleep easily. It only monitors the sleep disorders and it doesn't help the person for sleeping. The existing system doesn't have the alarm system also. It can't control the electrical appliances as soon as you switch off the alarm the geyser and coffee maker will be switched on automatically.

## IV. PROPOSED SYSTEM

This smart pillow is being fixed with an alarm system. It cannot control the electrical appliances as soon as you switch off the alarm the geyser and coffee maker will be switch don automatically. It can't control the electrical appliances as soon as you switch off the alarm geyser and the coffee maker will be switched on automatically.

## V. METHODOLOGY

The basis on which the pillow is working is on the phone and the sensor, the pillow will get notified about the massager then it will turn on the massager and after 25 minutes it will be automatically turned off as the timer for massager will be set for 25 minutes, the basis on which the pillow is working is mainly through the internet and the sensor which detects that if anyone is sleeping on that pillow or not, detection is very important that whether a person is sleeping on that particular pillow or not and this is being detected by the piezoelectric sensor which basically detects that if any pressure is being applied to that particular pillow then it is in working mode otherwise if it didn't detects any pressure on that pillow then it automatically stops working.

## VI. SYSTEM ARCHITECTURE

In the following the system architecture is being presented in which the pillow is being connected to the phone and through phone the pillow is being notified that what function it has to perform, the pillow has basically massager embedded to it and speaker has been attached to it which will turn on when alarm rings on the phone, USB port is also there for charging the pillow and through phone many electrical appliances are also being controlled.

## I. INTRODUCTION

Millions of people suffer from insomnia i.e., difficulty falling asleep results in day time drowsiness according to guidelines from a physician group insomnia is difficulty in falling asleep or staying asleep, people with sleep disorder feel dissatisfied with their sleep and usually experience one or more of the following symptoms: fatigue, low energy, difficult concentrating and decreases performance in work.

Even if the patient is diagnosed to suffer from sleep apnea, the treatment is also a challenging problem. There are several ways to cure or alleviate sleep apnea. For moderate to severe sleep apnea, the most common treatment is the use of a continuous positive airway pressure (CPAP) [1]. Blood oxygen saturation (also called SpO<sub>2</sub>) is a good indicator to characterize the sleep apnea and hypopnea [2]. Insomnia is a common sleep problem for adults. IOT and sensor networks (WSN) have been popular solution for this application. They provides an unobtrusive way of monitoring the sleep quality and the environment of the room in order to make people feel more comfortable and to improve their overall quality of life (QOL).

## II. OBJECTIVE

The goal of this article were as follows:

- The main objective of this smart pillow is that it should be user friendly and it must be reliable and it personal automated sleeping and waking up pillow
- It is helpful because user can operate this according to their convenience and it is important because the smart pillow is solving the problems of people and it can't be used in daily life.

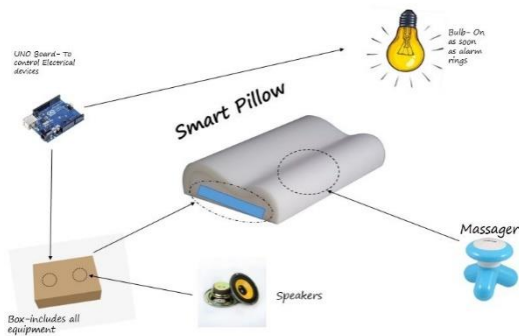


Fig 3:- System Architecture

## VII. MODULE DESCRIPTION

The first sensor which is being used is piezoelectric sensor, this sensor helps to detect the changing pressure around the pillow, since the pillow is automatic when the pillow does not feel any pressure on itself it will sense the signal and it will automatically turn off the alarm and speaker, this sensor has one more advantage that is it can help to save the battery from draining away. Secondly the pillow has a touch sensor so that the system is enabled automatically when the person raises his head on the pillow or when he places his head there. A vibration motor is also there for the massager that will provide a soothing effect on the mind and relax the mind and a sound sensor is there which will help to detect the sound of alarms door bells and many other sound creating elements and it will help the person to wake up these are easily embedded inside the pillow and they are of small size.

## VIII. APPLICATION

Our system can be used by the patient of sleep disorders as it helps to get better sleep and also makes day to day life easy.

## IX. CONCLUSION

The Personal Automated pillow is for the people who wants to have a peaceful sleep at night and it is also for the people who can't sleep at night as pillow is having massager embedded in it as well it can play some melodious songs for making the person getting to sleep, it also help the person to wake up timely in the morning as there is also an alarm, people of all ages can use it and they can use it on their daily basis as it is helping and getting beneficial and all this can be possible by using the internet services as well as the piezoelectric sensors

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