<u>PROJECT NAME</u> :*Stress Detector and Sleep Inducer*

<u>TEAM NAME</u>: *GTS*

Abstract of "*Stress Detector* & Sleep Inducer"Project :

Stress is a term that refers to the sum of the physical, mental, and emotional strains or tensions on a person. Feelings of stress in humans can result from various issues and it affects your ability to carry out daily responsibilities because you are too tired or have trouble concentrating. The case is similar with people having insomnia.So,our aim is to make a stress meter which helps us assessing one's emotional pain.Stress meter is based on the principle that the resistance of the skin varies in accordance with your emotional states. Resistance varies inversely proportional to the stress.

Many people experience sleeping well in natural surroundings, into a tent or a wooden hut. This fact is due not only to the healthy atmosphere but also from our unconscious ability to perceive natural Earth's magnetic fields. Our mini project generates this type of geo-magnetic fields and our aim is to perceive them: in this manner our brain is surrounded by an ideal environment for a sound sleep.

Features of Stress Detector :

*Provides a method to quantify stress levels.
*Early medication and changes in lifestyle can be suggested if stress levels happen to be high regularly.
*Is a handy and portable circuit. Can be made into a finished product like a wrist band.

Features of Sleep Inducer :

* Generates a natural electromagnetic-field
* Makes easier to fall asleep
* Induces a prolonged and sound sleep without drugs
* No side effects

Components required for Stress Detector:

- IC LM3914 (1 nos.) Touch Pads (to order)
- 9V Battery (1 nos.)
- LEDs (4 Green, 4 red, 2 Blue)
- Transistor BC547 (1 nos.)
- Zener Diode 5.1V, 0.5W (1 nos.)
- Switch (1 no.)
- Piezo Buzzer (1 nos.)
- Diode 1N4148 (1 nos.)
- Variable Resistor (1M, 47K)
- Resistors (47K yup , 1.2K yup, 560ohm , 1K yup, 470ohm, 470ohm yup)
- Capacitor 100uF, 16v (2 nos.)
- Capacitor 10uF, 16v (1 nos.)

Components Required for Sleep Inducer :

- R1,R5(1K 1/4W Resistors)
- R2(10K 1/4W Resistor)
- R3,R6(10M 1/4W Resistors)
- R4,R7(2M2 1/4W Resistors)
- R8,R9(4K7 1/4W Resistors)
- C1,C7(47µF,25V Electrolytic Capacitors)
- C2 (100nF 63V Polyester Capacitor) done
- C3,C4(330nF 63V Polyester Capacitors) (to order)done
- C5,C6(15nF 63V Polyester Capacitors) (to order)
- D1,D3,D4,D5 1N4148 75V 150mA Diodes
- D2 LED (5mm)
- IC1 4060 14 stage ripple counter and oscillator IC (to order)done
- IC2 4093 Quad 2 input Schmitt NAND Gate IC (to order)done
- Q1 BC327 45V 800mA PNP Transistor
- L1 Radiator coil (to order)
- P1 SPST Pushbutton
- SW1 2 poles 4 ways rotary switch (to order)
- SW2 SPST Slider Switch
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- B1 9V PP3 Battery

(Expected cost approx ₹ …….)

Plan Of Action :

- Week 1 : We will talk to mentors regarding reforms as we are quite short on them. Designing the circuit using Eagle for PCB and purchasing the required components after discussion with mentor.
- Week 2 : Making and debugging the circuit on breadboard or general PCB(mostly this as we think for bigger circuit it's easier to understand)
- Week 3 : As suggested, we will be more focused on finished product.So making final product using PCBs.We will be digitalizing the sleep inducer.Also learning about how the andriod programming for mobile app.
- Week 4 : Working on possible reforms like relation connecting both these gadgets through some relation as stress is also a cause of sleep disorder and final testing.

    (Concept of white noise and developing some app which have calming effect on brain.There is this app called "Sleep Cycle","Sleep time+" which "sleeps" under your pillow, where it analyzes your nighttime motion and calculates the time to wake you when you're sleeping most lightly.Maybe adding this feature)

    (DigiPill is another app)

Highlights of the Project :

This project helps in fighting insomnia and stress. Apart from this it also supports relaxation, stress management and induces sleep easily. This project generates type of geo-magnetic fields and it helps the brain by an ideal environment for a sound sleep.

Learning aspects :

Studying the electronic circuit , debugging , oscillatory pattern of geo-magnetic field and its effect on human sleep,digitalization,coding(with reforms).