86.

Smart Safety Watch

Marian Boys High School

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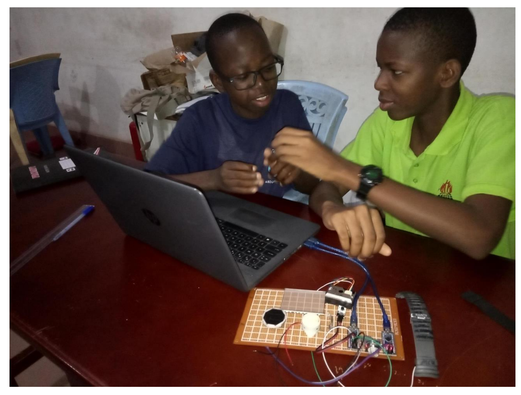
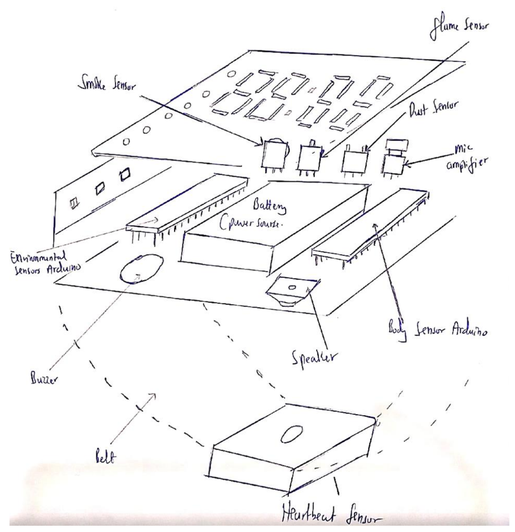
Introduction

The project is about a typical hand watch with a programmable board (arduino), sensor and alarms capable of detecting heart beats, body temperature, fire and alarming the owner. Its uniqueness is that it assures safety to mankind particularly when he or she is inactive as our sensory organs are not capable of concentrating on their functions simultaneously.
Its ability to detect fire, body temperature and heartbeat will be a great help even to young babies who cannot express themselves as pertaining their health status.

Method

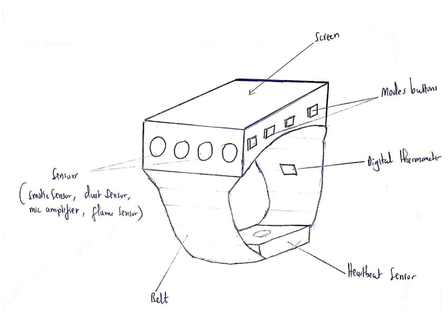


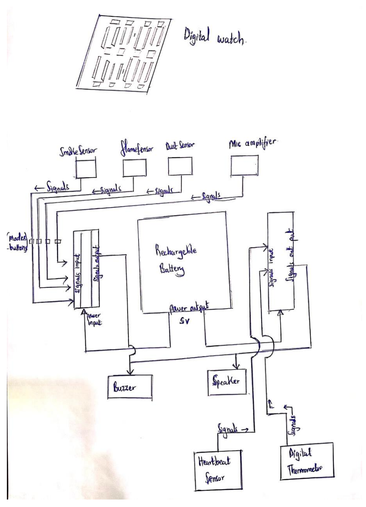
1. To detect fire, smoke sensor detects smoke and sends signals to the arduino1(which receives power from the battery) where the entire information is processed. In response to that, the arduino sends an output to the buzzer(which produces a sound to alert the user).
2. To detect dust, dust sensor detects dust and sends signals to the arduino1 where the entire information is processed. In response to that, the arduino sends an output to the speaker and buzzer.
3. To detect heartbeat, heartbeat sensor detects heartbeat pulses and sends signals to the arduino2 where the entire information is processed. In response to that, the arduino sends an output to the speaker and buzzer.
4. To detect temperature change, temperature sensor detects temperature and sends signals to the arduino2 where the entire information is processed. In response to that, the arduino sends an output to the buzzer and buzzer.
5. All the sensors and arduinos are connected to the breadboard which offers support to the mentioned materials.
6. The batteries are placed on the breadboard to power the arduinos and the buzzers for them to function.
7. The power to sensors are connected to switches which serves as modes so as to enable proper functioning without interference from external environments. Example, turning on all sensors before you sleep, turning off smoke sensors when cooking.
8. The sensors are arranged besides the belt of the watch so that it may be easy for the heartbeat sensor to sense heartbeat pulses and the rest of the sensors so that they may be easily handled.(portable)

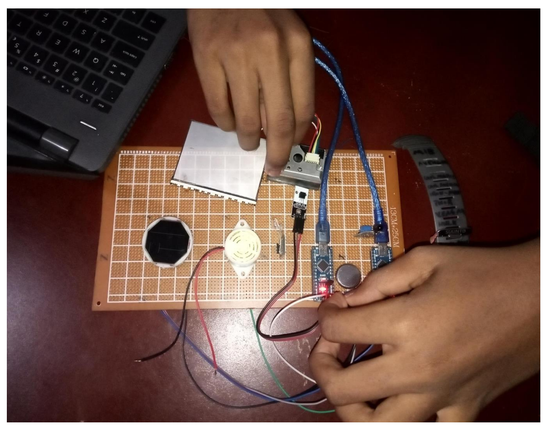


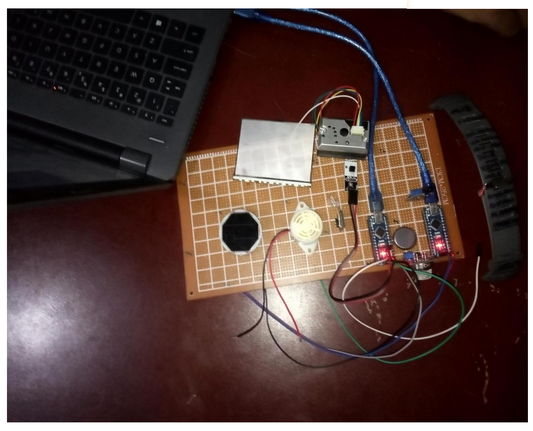
Results

1. When the mode for the fire was turned on and there was smoke nearby, the buzzer produced sound.
2. When the mode for the dust was turned on and the watch was exposed near dust, the buzzer produced sound.
3. When the mode for the heartbeat was turned on and a person wearing the watch started to jump, the buzzer produced sound.
4. When the mode for the temperature was turned on and a person suffering from fever wore the watch, the buzzer produced sound.



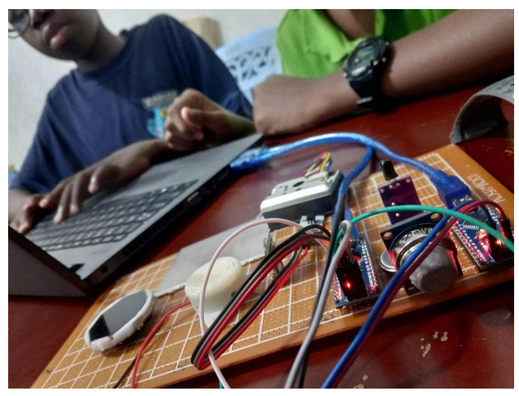






Conclusions

The use of arduino in preference to raspberry Pi which cost about 300,000/= (at Bafredo's electronic shop), together with the sensors made our smart safety watch to cost less than the nowadays digital watches and as a result very cheap in costs. Besides, it will be of great help to both the aged and young babies due to its safety functions.



Acknowledgments

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REFERENCES

We obtained some source arduino.cc , youtube.com and from the arduino ide program, pdf drive official