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**SOLDIER HEALTH MONITORING AND TRACKING SYSTEM USING IOT  
HKBK COLLEGE OF ENGINEERING**

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**INTRODUCTION:**

The infantry soldier of the future is anticipated to be among the most technologically advanced modern combatants ever numerous research initiatives worldwide. It was difficult to combine the disparate parts into a small, efficient package that would accomplish the desired result without being overly heavy, bulky, or power-intensive. The primary challenge in military operations is communication with the base station. Careful planning and coordination are

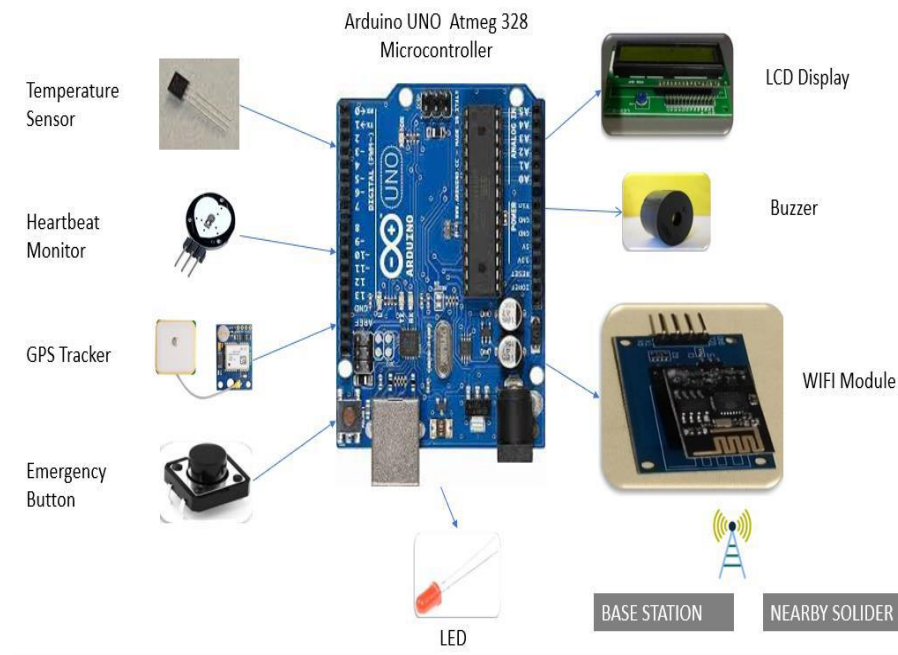
substantially facilitated by the right navigation between troop organisations. This study focuses on how control room stations can use GPS to track soldiers' movements in order to pinpoint their precise location and direct them appropriately. High-speed, short-range soldier-to-soldier wireless communication also transmits situational awareness data, including bio-medical sensors, GPS, and wireless communication. The biosensor is made up of temperature and heart rate sensors.. A system called an "Embedded System" is created when hardware and software are combined into one unit and integrated to achieve design objectives like speed and efficiency. The advantages of the embedded system mentioned above are the foundation of this project. So that soldiers' locations and important health indicators can be tracked in real time while they are on the battlefield, the defence industry must develop wearable technology that is portable and uses very little power. The base station can point the soldier in the right direction using this soldier navigation system. This project's foundation in the Internet of Things (IoT) makes it stand out beyond other similar initiatives.

#### **OBJECTIVES:**

- To Monitor the Health conditions of the Soldier like heart beat and temperature.
- To track the location of the soldier i.e. Latitude and Longitude
- To transmit the information regarding the soldier like abnormality of his health, location, and danger condition of the soldier to a central location
- To alert the local people surrounding the soldier regarding the health problems.

#### **METHODOLOGY:**

The block diagram of a system to track military positions and track their health along with environmental analyses. Since you are using an Arduino Uno it requires a high speed connection. Processors are integrated with key sensors to track health status such as body temperature and heart rate sensors. The position of the soldier (latitude and longitude) is recorded using a GPS receiver and saved in the microcontroller memory.



To determine the geographic location of a location, a GPS receiver compares the signal it receives from an orbiting GPS satellite. We can indicate an emergency using the keyboard. Additionally, it uses the Internet of Things to transmit data to the army base that includes the soldier's status and health parameters. The Army base station unit receives information about the soldier unit through a GPS receiver and uses IoT integrated software to show the soldier's location and health status in the base station system. Soldier health monitoring and tracking system using IOT Temperature, heart rate and soldier's position are displayed on the LCD screen. The output from the heart rate and temperature sensor, along with latitude and longitude, is sent to the cloud, which talks about things you'd see at a military base camp.

## RESULT AND CONCLUSION:

The project's output, which displays temperature, BPM, longitude, and latitude values. The system uses less electricity overall thanks to the 328 controller and peripherals with reduced power requirements. The used modules are more portable because they are smaller in size and lighter in weight. Soldier security and safety is provided by the GPS tracking of a soldier's whereabouts anywhere in the world and the health system monitoring a soldier's critical health indicators. In this regard, the idea of a tracking and navigation system is particularly helpful to soldiers who are engaged in combat. Also, for base station, so they can receive

a real-time PC display of the soldier's position on the battlefield. The output is seen on the base station's or mobile device's PC.

This tool benefits well-positioned and organized military personnel as well as the host that uses wireless networks to transmit information. One of the primary difficulties in military operations is the inability of troops to communicate with the station in the control room. An army base station receives information about a soldier's unit using a GPS receiver and the soldier's location and health status is displayed on the base station system using integrated IoT software. With the MIT App Inventor, data collected by various sensors can also be viewed on a mobile device. The most important part of this idea is wearable technology.

#### **SCOPE OF FUTURE WORK:**

- This system can provide more safety to the soldiers by adding breath sensor and a pressure sensor. By using this sensor base station, the physical condition of soldiers can be monitored.
- Soldiers can be given medical advice to overcome these problems.
- We can add a graphical display section to this project which will help display a digital map showing the location of all soldiers in a unit as they surround a block of buildings and launch their attacks.