**BE : Project Abstract 24 July 2017**

**Group Number:** **23**

**Priority : 2**

**Project Title : Sensing Heart beat and Body Temperature Digitally and Noninvasive Blood Glucose Measurement System using Arduino**

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**Abstract of Project :** This project proposes a new hardware system to measure blood glucose concentration, body temperature and heart rate using IoT. Arduino is used because it can sense the environment by receiving input from variety of sensors and can affect its surroundings by controlling lights ,motors and other actuators. This system has the characteristics of being noninvasive, simple and quick. Digitally sense body temperature, blood pressure and glucose level using Arduino can show the accurate results that will be displayed on the LCD monitor.

**a) Motivation*:***In the present scenario it is not possible for a doctor to monitor a patient regularly at home or during emergencies. Various on-body detections like heartbeat monitor, body temperature monitor and glucose level in blood are possible today only through different single purpose devices that are sometimes hard to procure or in case of detection of glucose level in blood there are invasive(needle) methods that have its disadvantages. Diabetes being a chronic disease, in India the number of diabetics is only increasing. With the help of this easy to use embedded system basic on-body detections are possible at your fingerprints and that too at a very low cost.

**b)Problem Statement**:This project effectively removes the neccessity of using invasive procedures to detect glocose level and using different devices to obtain different results.Cost of acquiring such devices is also high and in some places quite difficult. A multipurpose IoT device helps obtain these results quickly. Monitoring and having a log of these results proves useful when approaching doctors for quick assessment.

**c) Approach:** The microcontroller on the board is programmed using the Arduino programming language”. LM35 is used for the sense body temperature. Body temperature is a basic parameter for monitoring and diagnosing human health. Heart beat sensor was used for sensing heart rate. This device will allow one to measure their mean arterial pressure (MAP) in about one minute and the accurate body temperature will be displayed on the Android. The system can be used to measure physiological parameters, such as Heart rate (Systolic and Diastolic), Pulse rate.

**Reference papers*:*** *(Title and Author of Papers referred )*

***(\*Compulsory : Please attach a copy of base paper .)***