PORTABLE AND COST-EFFECTIVE BASIC DIAGNOSTIC SYSTEM

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Aim of The Project :

The aim of the project is to provide an accurate, simple and cost-effective way to diagnose various health issues. The solution measures, records, track the various health test results for each customer and tags with customer ID information. The solution also provides the progress of health parameter over time in more effective ways and provides various tools perform effective analysis of health result, track progress and get deeper insights about one’s health parameters. By getting an anomaly/deviation of various parameters such as blood pressure, blood oxygen level, pulse rate, EEG, EMG, BMI, body temperature and blood gas, from ideal values, providing further insights about what that deviation means and provides effective display of such information so that doctors can’t miss such information while diagnosing patient. The solution also collaborates multiple parameters and any deeper correlation exist among the progress of multiple health parameters and any bigger meaning one can derive from that. The devices solution can do pre-processing of the result so that results can be viewed in an effective way.

Methodology:

The diagnosis takes a long time, sometimes, even in the case of an emergency due to technical procedures which might lead to loss of lives or worsening the health condition. We provide accurate results where the diagnosis is not only fast but also very cost-effective. Bulky equipment is replaced with advanced, portable ones so that our medical camps can serve at various locations. Even multinational companies will be provided with this service to make sure their employees are at good health, who might otherwise neglect it many a times.

To make it a commercially viable product; first, we need to give Proof of concept (POC) and software solution based on it. For medical devices getting FDA or government norm will take time. The objective of this solution is to build several deep analyses, processing, book keeping and tracking health data, so final product gets FDA or govt approved OEM solution, then customise the software to get the desired result and launch the product.

In that we reduce cost and speed up the commercialization of product. The effort needed in productising the POC would be detecting compatible OEM solution and port the SW or FW to implement the POC. Build several Tool Box and integrate with other modules.

We, as a group of 4 engineers are working on the Hardware module of OEM to fine tune the device and support Software team to port the solution for the following health parameters:

1. Blood pressure
2. Blood oxygen level
3. Pulse rate
4. Blood Glucose Level
5. BMI
6. Body temperature

Other Aspects Of Our Project:

1. The solution tries to develop using low cost, readily available Hardware kits so that overall cost of product should be low and get as much as accurate data possible.

2. Part of processing will be done at local devices and further processing will be done at cloud so that overall cost of device should be reduced and leverage most of tools, solutions or open sources to perform further analysis.

3. Most of devices are non-invasive mode test so that we save the cost of stripes and other essentials needed for testing.

4. Every device can be monitored, diagnosed, firmware upgraded and controlled over the network so that overall cost of maintaining the system should be low.

5. Most Devices are self-usable, easy to use so that no need to have expert technician to manage it and hence overall cost of testing customer will be low.

Expected Outcome Of The Project:

1. On-the-go, accurate diagnosis of general health parameters, like the ones we are dealing with in this project.

2. Highlighting the deviation from the ideal health condition which helps doctors identify the cause of the health issue