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Project Proposal for Health monitoring IoT device

Description:

To do research and implementation of a prototype of a Health monitoring IoT wearable device which can be attached over a person's body. The device should be connected to a GUI application which is hosted over a server and can accessed by any device connected to its local network.

Requirements:

As the device will be used for elderlies or patients make sure that it is safe to use.

Hardware:

- The device should be battery operated. The device should be able to run for at least 5 hours before the need to recharge.
- The device should be a wearable device which can be attached to relevant body part.
- The device should have an emergency button for immediate necessary attention.
- The device should have led indicators which can indicate status of it, for example low battery, connectivity, alert acknowledgement, etc.
- The device should be capable of measuring:
    - Body temperature
    - Blood oxygen
    - Heart beats
    - Room humidity
    - Room Temperature
    - Sudden movements
- Design a body of the system which can be easily attached and detached.

Application (GUI):

- There should be web GUI which should have following features:
    - Simple and User friendly
    - Display Real time data of body sensors
    - Can access older data
    - Display alerts when required
- The web GUI should be hosted on a local server.
- The web GUI should be accessible by any smart device which has a browser.

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Project development:

The project will be done in three different sections because of the complexity of it, I have also listed several steps to be done in each of the respective sections:

1. **Hardware and Firmware**
    a. Component selections (sensors, microcontrollers, modules, etc.)
    b. Ordering components (priority will be searching in Germany, if not available we will choose an alternative)
    c. Electronic circuit designing
    d. Firmware development
    e. PCB designing and ordering
    f. Developing the Prototype
    g. Testing the Prototype.
2. **Mechanical Body**
    a. Deciding on the body structure
    b. Designing the body
    c. 3D printing the designing
    d. Assembly of the entire device
3. **Application/GUI**
    a. Deciding on a protocol for communication and Web framework
    b. Developing the GUI
    c. Testing the Web Application

Duration of completion:

Given the amount of research and development it will take **approximately 3-4 months** to fully develop the Prototype. I cannot give a solid date of submission because of the unexpected circumstances that might occur due to arrival of ordered components, 3D printing time, etc. (it is Germany Afterall).

If you have questions or queries regarding the current proposal or want to change something please feel free to contact me anytime, I will be more than happy to serve your curiosities.

Rest assured as you have brightest minds working to solve your problem statement.

Thank you and Kind regards,

Kirtan Soni