Idea /Approach Details

Technology Bucket : STUDENT INNOVATION
Company Name/ Ministry Name: AICTE
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Category: Hardware
Problem Code : AI15
College Code : 1-3516176364

Idea/Solution

•A person who is fit is competent of living life to its comprehensive scope.
•But in this busy day to day world, no one has time for exemplary schedule.Eventually lack of fitness in sports as well.
•So we affirm a pair of Hand Gloves which is embedded with sensors and connected with an application for user to track and improve their workouts related to sports.
•The user is observed through various sensors such as Heart beat and pulse monitoring sensor, Pressure sensor, Pyroelectric sensor, Global Positioning System(GPS) module,Bluetooth module with the help of Lilypad Arduino 328 Microcontroller.
•Heartbeat and pulse monitoring sensor is used to discern BPM(Beats Per Minute) of the user.

•Pressure sensor is used to discern live weight tracking,detecting how much is being lifted and sharing it with a Bluetooth-connected smartphone application.
•Pyroelectric sensor is used to discern the direction of motion and detect the number of reps performed by the user during workouts.
•GPS is used to discern the step counts of the user based on their daily activities.
•When any abnormal heart beats are detected using Heartbeat and pulse monitoring sensor, an audio with various breathing exercises are played for the user to get an immediate help.
•Maximum of three people can be alerted during emergency situation of user with the help of their contact details.
•Above all, various fitness programs are already stored in the cloud storage.
•So the user is advised with various kinds of fitness programs through the application with the means of audio and video.
•This motivates and improves fitness level of an individual.

Technology Stack

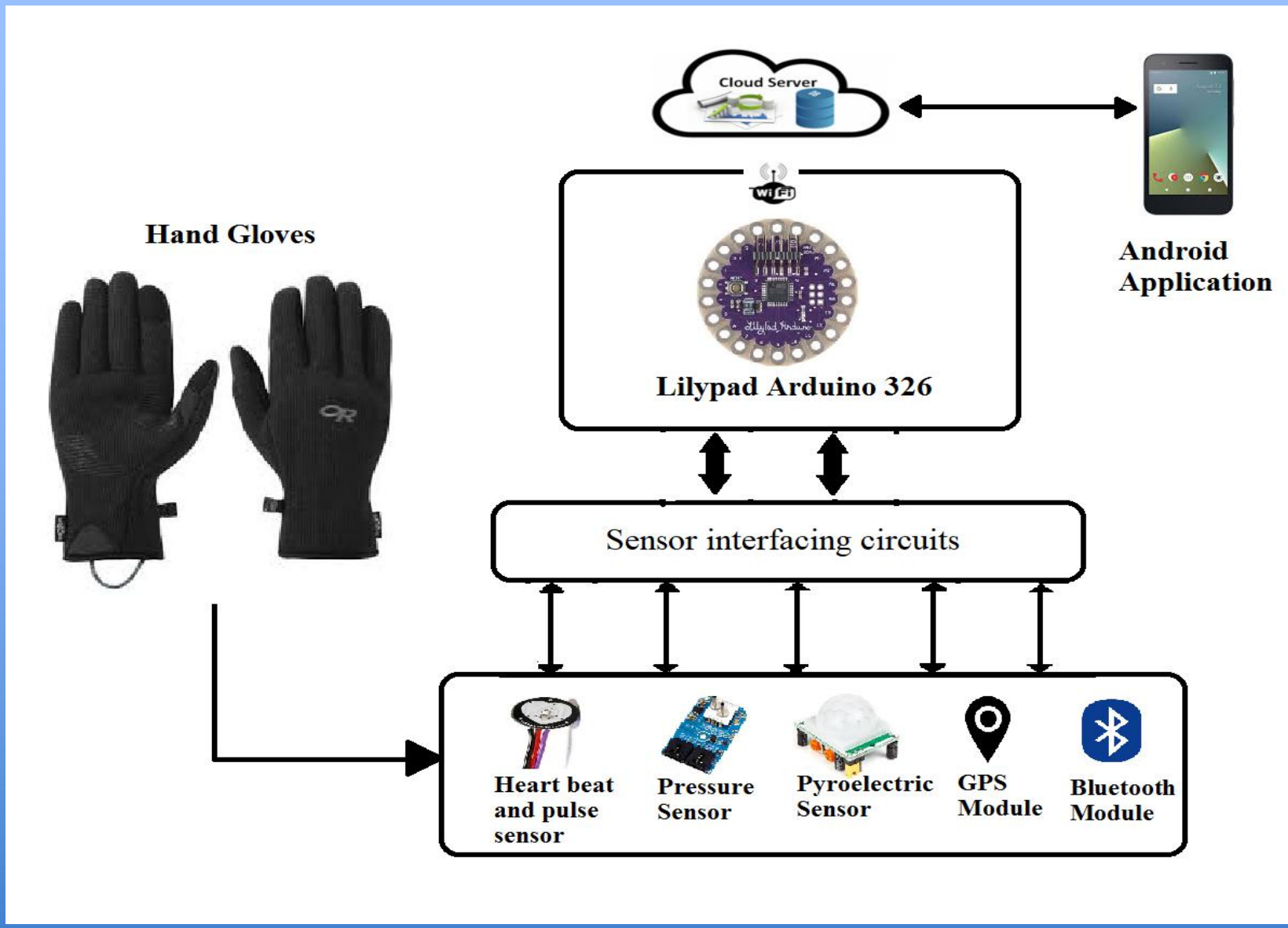
HARDWARE:

- Lilypad Arduino 328 Microcontroller
- Pressure sensor
- Pyroelectric sensor
- Heartbeat and pulse monitoring sensor
- Bluetooth module
- GPS module
- Bread board
- Connecting wires

SOFTWARE:

- Arduino IDE 1.8.8
- Front end: Embed C for programming sensors and Java for designing application
- Back end:Parse Cloud Server and SQLite Database
- Android Studio 3.0

Architechture Diagram



Dependencies

- Mobile phone with Android 6.0 Marshmallow OS
- Internet connectivity to view the training videos.
- Contact details of the user's closest relations.