

Abstract

Health Care Monitoring System (HCM) develops a system to facilitate trainers and exercisers by using various Machine Learning Algorithms. Its main purpose, as its name signifies, is to monitor the health of people exercising in gym. The need for this project arose because of the fact that people while exercising ignores the basic instructions provided to them by their instructors. This situation gets exacerbated by the scarcity of trainers who can't give attention to each person, individually. HCM will monitor the health and gives an alarm whenever the vitals go abnormal and also it will give people their daily plans for exercising, consequently, facilitating both exercisers and trainers by reducing their own works.

The system consists of four main actors: exerciser, admin, trainer, and consultant. Admin serves as the owner of gym and is responsible for executive work like add/remove consultants and trainers. Trainers are responsible for approving daily exercise plans generated by system for every exerciser. They also give instructions to exercisers while they are doing exercise in gym and keep on checking their status by online which provide an abstract overview of all the exercisers. If any person ignores the daily plan then system just sends alarm to trainer after which he would go to exerciser for further action. Similarly, consultants are doctors and responsible for monitoring the overall health of exercisers. They keep on checking the vitals of exercises online which give overview of vitals of every exercisers. Whenever, any exerciser's vitals go abnormal then this implies that he/she is not well. HCM will then immediately send an alarm to consultant who will then go to the respective exerciser in person. Consultants are also responsible for approving the monthly diet plans prepared by the system for every exercisers. They can modify the plans or simple approve them. System will keep on storing all the changes and next time, will improve itself by experience which is the essence of machine learning. Last but not the least, exercisers are the ones who will login by their android phones and then starts their exercise according to the plan suggested by HCM and approved by their trainer for them.

Technology for developing HCM is a mixture of Internet of Things (IOT) and Machine Learning (ML). The exercise and diet plans are generated by ML which keeps on improving itself by experience gained by suggestions of trainers and consultants, respectively. When the exerciser logs through its android phone, HCM by using Bluetooth connects his phone to the band provided by gym to the exerciser. This band will then keep on sending the vitals of exerciser to his android phone which will then continuously send vitals to the server. The server then sends the data to dashboards where consultant and trainers can view them. This all connection between server, dashboard, phone and band is an application of IOT.

Lastly, as its name demonstrates, in future HCM can be enhanced to monitor the health of patients in hospitals by using the same methodology. IOT will connect the patient's band to different instruments in hospitals and ML will provide different instructions to the patient keeping in view their health status. Moreover, throughout in this monitoring system, it will keep on updating the doctors and nurses who will act as supervisors and can modify or give the instruction in person to the patient whenever needed.