Project Name: Physioplay

ABSTRACT

Physiotherapy helps to restore movement and function when someone is affected by injury, illness or disability. It is a necessity for empowering the overall health of the target audience. It can also help to reduce your risk of injury or illness in the future.

We are proposing an immersive technology-based approach for improving the lower limb locomotive disabilities and fine motor activities with cognitive skills. The project is to develop games that would run on either Android or iOS. Since other physiotherapeutic apps are tedious to use and involve over straining of the limbs, this app mainly focuses on facile movements of the limbs using pose detection which makes it simpler. The application should have a user registration page with details like name, age, medical condition, sex and date of admission is captured. Next time onwards, the doctor should be able to search and find the user. There are three in-built apps in the app-Dino Run, Flappy Bird and Quizzit. The respective results and scoreboard of each user will be available to the doctor.

Pose detection is done using a Flutter based ML kit. The kit is integrated into various game apps. According to the behaviour of the game, squats are detected for the quiz app, leg raises are implemented in Flappy Bird and ankle movements are sensed in Dino Run. The output of the movements are obtained as floating point coordinates. The backend of the app is implemented using Firebase. The user interface of the whole app is done in Flutter.

Keywords: physiotherapy, pose detection, technology-based, lower limbs, squats, leg raises, ankle movements, floating point coordinates, ML kit, Flutter, Firebase

Team Members:

Swathy Krishna S
Kiran R
Vignesh P Ajith
Gayathri Unikuttan