# SMART GYM

## A. Abstract:

The objective of our project is to create an app which will bring in SMART WORKOUT ,be an alternative to personal trainer in gym and will be efficient and accurate than current system.

It would be for the fitness freaks going to gym and would make their workout analysis and diet plans much more efficient.

Also, it is a great help for dieticians and nutritionists in planning for the fitness of their patients.

## B. Background:

While everything is going smart these days, we wish to relate this concept with our fitness. We need some tracker which is efficient, reliable and of reduced expenses. With many  people joining the gym to become fit, they aren't successful because they're doing it the wrong way or are not doing it for appropriate time.

## C. Statement of problem:

Even if people have a personal trainer, we need to bear his expenses and also there is a need to maintain whole workout log manually. Also, sometimes the trainers aren't efficient. We need a smart and cheap way to ensure our workout is productive enough to make us fit.

## D. Research:

We have two components:

1. Equipment: Every equipment in gym will have a barcode on it. Also, it will have sensors (accelerometer, gyroscope) attached on it which will send required data.

2. Android app: It will be containing Equipment option which includes various activities or equipments in gym. It will recognize the equipment in gym and thereby load the required activity details in app. We look forward to include the functionality of detecting, if the user is doing the activity in proper way or not. If he is doing it wrong way, conveying it via an audio (like a personal trainer). Also, analysis of the collected data would be done, output of which would be calories burnt during each activity, calories required to burn, graph of the daily, weekly, monthly activity ,etc and need be send the report to nutritionist or dietician for further diagnosis. The app would also include My plan, Setting goal features.

There are currently such systems. Our project would be different in following ways:

1. We plan to make the current algorithms to track the correct way of exercising, more efficient and accurate. Also, currently there is  a beep on wrong move; nothing which actually “tells” (audio) where the user is going wrong. We plan to implement it in our project.

2.  We currently have wearables which do the processing , our project includes equipment and app, hence no wearable.

3. Currently, Bowflex dumbbells is just one equipment and for analysis of one user at a time. Our project is more generalized and multiple users can use it via app.

E. Applications:

1. App will reduce injuries that occurs while workouts.

2. No need to pay to trainers , app will act as a personal trainer.

3. Helps to efficiently perform exercise in real time.

4. App will alert on wrong motion axes and will help to learn correct motion.

5. No more need to track your workout progress on paper, app will record workout history and track real time workout progress.