

# FITNESS TRACKING APPLICATION USING MERN STACK

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## *Abstract—*

This application system intends to automate the existing manual system by the help of computerised apparatus and full-fledged computer software, fulfilling their requirement, so that their valuable data/information can be stored for a lengthy portion of time with easy retrieval and manipulation of the same. This application creates an individual efficient fitness plan based on your characteristics. This app is easy to use and ensures the best possible result. Just like a personal trainer. Some apps act like a personal digital trainer that can tailor workouts for each individual. They provide video guides showing the right way to perform an exercise, and offer the option to change intensity. A quick summary of health and fitness apps for iPhone and android from Populytics, a population health and analytics company in the Lehigh Valley Health and fitness apps can help motivate you on your journey to improved health Exercise on your schedule. Apps are available for short, focused workouts that can be done in less than 10 minutes. They provide science-based routines with up to about 1,000 variations, and have the ability to understand a person's fitness level, adjusting accordingly. Gym Application, as reported above can lead to an error free, secure, well founded and fast executives system. It can help the user to concentrate on their other activities preferably to concentrate on the record keeping Thus it will help organisation in better utilisation of resources. That means that one need not to be distracted by information that is not relevant, while being able to reach the information.

*Keywords— Web Development and designing, Client/server , Distributed applications, mHealth, Fitness app, Mapping*

## I. INTRODUCTION

The main objective of the Gym Application is developed to override the problems prevailing in the practicing manual system. This application is providing a system which is use to maintaining their health care. It take care of all their fitness and also keeps the data of everyday's gym exercise. The purpose of the project is to build an application program to reduce the time and money. We can easily get the list of all exercise and also we have complete details for some particular fitness exercise. It can assist the user to concentrate on their fitness. In Every corporation, whether it is big or small, has challenges to overcome and preside over the information of trainer, gym, facility, time slot, fitness class. In all Gym Application has different Gym needs, therefore we implement exclusive employee management systems that are adapted to your managerial requirements.

Since our health is our main concern, we can pose the following question "Why don't we use smartphones to improve our health condition, stamina and nutrition?". Studies have shown that 28% of people exercise rarely or not at all. Most people engage in physical activities because they want to improve their health, while others exercise for the joy of physical activity [8]. Surveys show that 58% of smartphone users have downloaded a fitness app at least once in their lifetime. According to Flurry Analytics, between December 2013 and June 2014, health and fitness apps have gained popularity reaching 62% usage, contrary to other apps that grew only by 33%. It is noted

that most people continued to use the app even when they set a goal and they couldn't accomplish it. Because of this, users fixated on fitness apps and a group "Fitness Fanatics" were created [10]. Regardless of one's motivation, it is clear that fitness apps address one of the biggest challenges in our busy lives, namely the struggle of keeping fit. MERN stack is a set of technologies used to build applications nowadays. React is a powerful JavaScript library which provides lots of functionalities to develop an application from scratch. In this project we chose MongoDB as database as it is useful database for companies running big data applications. In addition, sharding allows the database to distribute data across a cluster of machines. Newer versions of MongoDB also support the creation of zones of data based on a shard key

## II. LITERATURE REVIEW

In [1], With the advent of mobile Internet, fitness apps have swept the whole society and have had a profound effect on people's exercise behavior. The sports apps promoted people's exercise behavior and habits significantly. It can exercise anytime, anywhere, on-demand occurs and also life-long fitness. Through the good experience of fitness app and interactive perspective, elaborate design and based on needs analysis and basic principles of the possible model designed to discuss the content, combined with c-svc and v-svc data analysis to illustrate, intended departure from the bodybuilder needs to optimize fitness APP is designed to improve the current shortcomings of the fitness of APP, it is part of the construction of a simple model to try, for research reference. Development of rich sports information on the Internet and information network technology, scientific guidance of public health provides a practical way to a variety of sports sites such as springing up, major portals and various comprehensive website. It also is regarded as an important part of sports channels to run the site. But the study found that relying on the guidance of the fitness aspect of network resources is not satisfactory. Studies show that there are too many problems on health services network: the lack of standardized information collation, the query time-consuming and labor-intensive; the lack of development, and professional fitness guide website

In [2], Mobile fitness applications are innovating the ways in which smartphone users self-manage their health. Prior research found that app functions may impact app efficacy. However, research to date has not sought to systematically investigate how different combinations of app functions impact user response to apps, especially adoption intent. This article describes two studies on mobile fitness app characteristics and user attitudes. Following a Reasoned Action Approach, Study Two found various effects of individual differences (age, gender, BMI, eHealth literacy, smartphone experience, function preference) on user attitude toward different fitness app types. A comparison between two studies demonstrated a mismatch between market offerings and user needs regarding app functions. Implications of results for mobile fitness app design to improve consumer health and for theories are discussed.

In [3], The recent years have seen a rapid change in lifestyles as people have increasingly become sedentary over the last few decades and the Coronavirus pandemic has aggravated the issue. Holistic well-being is a major concern for people due to

rising cases of obesity and other lifestyle disorders. Smartphones are seen playing a key role in monitoring health and fitness behavior in recent times. Mobile applications and especially fitness applications are emerging as a keen area of interest and the pandemic has further accelerated their usage with a comprehensive background of publications in leading journals. Present study analyses and identifies the most cited papers in this area in the period of 2010 to 2021. In this study a database of 645 documents were retrieved from Scopus database and bibliometric analysis was done using R studio package. This analysis provides information on trends taking into perspectives both past and present studies. The analysis also reflects important information in areas such as most prominent authors locally and globally most cited countries, most cited documents, growth in sources of production over a period of years which would help in future development of research in this area.

In [4], Along with the growing consensus on the health benefits of physical activity, a myriad of fitness wearables and smartphone fitness apps have been developed to quantify and promote physical activity. Fitness wearables are "devices that offer training plans, assist with activity tracking, and generally collect and process health-related data" whereas fitness apps refer to "the self-contained programs for smartphones designed for the purpose of getting fit". This study focused on smartphone fitness apps. Despite the potential of smartphone fitness apps to deliver cost-effective physical activity and health promotion, their effectiveness has not been sufficiently established. In particular, the effectiveness of fitness apps usage or app-based interventions was modest or short-lived. In previous studies, only a limited number of factors considered by researchers have been based on theories or behavior change techniques. Furthermore, only a small number of fitness apps have undergone rigorous evidence-based evaluations in controlled trials. There are some quality concerns in the reporting of these studies, for example, only a few studies have reported whether fitness apps are based on human behavior change theories. Herein, we outline the factors that might predict the behavioral intentions of individuals to use fitness apps (and their downstream effects), building upon theories that have been identified as relevant in the information systems literature, particularly UTAUT2.

In [5], The use of technology in sports and fitness is proliferating thanks to advances to facilitate its practice and improve adherence. Beyond adherence, it is important that technology is understood as a facilitating medium. The main objective of this study is to know the influence of the use of the fitness application (app) on sports habits, customer satisfaction and maintenance intention of fitness center users. For this, an experimental, controlled and randomized study was carried out, characterized by being a field trial, with a sample of 66 participants divided into a control group (n = 33) and an experimental group (n = 33), with 38 (57.6%) men and 28 (42.4%) women who self-monitored their physical activity for 8 weeks. The dimensions analyzed between the pre- and post-intervention phases were the changes in their sporting habits (frequency of attendance and duration of the session), the changes in satisfaction and the intention to stay with respect to the fitness center. The results in general do not show significant differences between the two groups and conclude that the use of the fitness app did not directly influence the sports habits of the participants. There were also no significant differences in

terms of satisfaction with the fitness center or in their intention to stay in the fitness center. Therefore, it is shown that the use of the fitness app, as a single download or use element, is not enough to improve habits, satisfaction or the intention to stay in the fitness center.

### III. MODEL ARCHITECTURE

#### A. Project Setup

We will start with creating the new project folder and installing all needed dependencies. I'm using Visual Studio Code, with the shortcut CTRL + ~ you can toggle the command line inside Visual Studio Code. Run the following command:

```
npx-create-react-app activity-tracker
```

#### B. Material UI

To speed up our development we will use pre-build components from Material-UI framework which you can find here: <https://material-ui.com/> Run the following commands:

```
npm install @material-ui/core npm install @material-ui/icons
```

#### C. Folders

Next up we will create our folders, which will be: components, pages and config. Open up command prompt and use the following commands:

```
cd src mkdir components pages config
```

This way we have our app running in the command line of Visual Code and can run command with command prompt separately.

#### D. Router

To navigate inside our App we will use react-router. We are creating a single-page-application which is basically one big page that does not need to be refreshed, we will just show and load only the components we want the user to see. Install react-router by running the command:

```
npm install react-router-dom
```

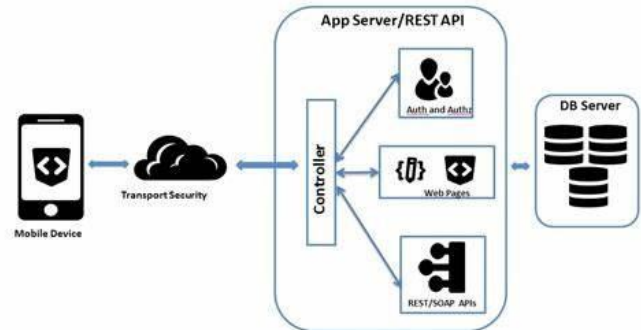
### IV. PROPOSED SYSTEM

#### A) Workout Model

The main need for the development this module is to manage of the all workout data. We provide full workout module to help the user about fitness tips. So all exercise will be managed by the developer and can see the list of data of all the exercise he/she as done at that particular day & filter according to the His/Her satisfaction. All the details of each exercise and how to perform the exercise is been provided by this module Training Exercise Module for Beginners Hip-dominant (deadlifts, hinges, and swings)

- Knee-dominant (squats and lunges)
- Pushing movements (push, and presses)

- Pulling movement (rows and pullups)
- Gait pattern, such as walking and running
- Admin Enquiry Module The main purpose of developing this module is to manage the all enquiry will be managed by admin and user be able to see the enquiry. Admin can manage the all enquiry
- Admin can edit and delete of the enquiry
- Admin can also see the all list of all enquiry



### V. CONCLUSION AND FUTURE SCOPE

With time people have understood the importance of physical fitness and this awareness turned into a modern fad or craze will continue for years to come. This segment has a promising future. You can conduct market research and contemplate adding some key features which will make you stand out from the existing fitness apps. The apps seem to have greater positive impact on the users' health when it is used regularly. This positive result also enhanced the popularity of apps as the satisfied users suggest the apps to others. But these fitness apps suffer from many drawbacks which could hinder its growth. Providing timely updates is one of the major problems among most of the apps

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