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An Investigation of the Significance of Artificial Intelligence in the Trade of Fitness Applications

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Abstract: *Tablets and smartphones are progressively and consistently altering our understanding of health and fitness. Both users and health professionals now have access to a wide range of applications that encompass the entire spectrum of healthcare. Gathering information, averting, diagnosing, treating, and monitoring are all components of the process. In addition, our team created myFitnessCompanion®, a mobile application for health and fitness that has been available on the Android Market since February 2011. The objective of this essay is to examine our process of developing and promoting a fitness and wellness application. This article explores the adoption of health apps by users and the healthcare industry, as well as the future distribution of mobile health applications. IBM Watson, an artificial intelligence system developed by IBM, has surpassed human intelligence in many aspects. Watson not only defeated previous Jeopardy! champions, but he also received widespread praise for successfully identifying a woman with leukemia. Below, we have compiled a list of the top GPS tracking applications for Android. 1. The authors' knowledge and experience as a developer of mobile health and fitness software spans seven years. Personal Health Record (PHR) systems, such as Microsoft HealthVault, and regulations imposed by the FDA may exert an impact*

Keywords: Technology, Artificial Intelligence, Applications, Innovation, health concerns

I. INTRODUCTION

Automation is a recently developed field that has witnessed remarkable achievements as well as notable failures. The failures primarily occurred due to the underestimation of the complexity of seemingly straightforward problems, as well as the belief that sheer computational capacity can resolve any problem. The authors' expertise in developing mobile health and fitness apps is derived from a seven-year period of experience. The research investigates the impact of Personal Health Record (PHR) systems, including Microsoft HealthVault, and FDA rules on the future of mobile health apps. Additionally, we discuss the challenges and potential advantages for app developers in the health industry. The vast amount of knowledge accumulated is giving rise to engineering principles that can serve as guiding principles for engineers. individuals who are confronted with more intricate challenges in a progressively cutthroat setting, and who may be employed to provide guidance to engineers

[1] The healthcare business has been compelled to integrate smart phones and tablets, as well as health and fitness applications, due to the growing number of clients utilizing these devices.

[2] In 2022, almost 33% of the global population of 1.4 billion smartphone users will be utilizing mobile health applications. Currently, there are numerous health and fitness applications accessible for download on Google Play (December 2012).

[3] Three hundred and ninety-six of them utilize a sensor to acquire or extract physiological data, such as a weight scale, blood pressure monitor, accelerometer, or GPS. The applications are either free or require a nominal cost.

[4] The app MyFitnessCompanion®, developed by our team, accomplishes precisely that. As customer demand for self-monitoring increases, the potential for technology giants to develop mHealth applications for delivering remote care also expands.

[5] The system utilizes wireless sensors such as Bluetooth or WIFI, as well as manual input, to gather physiological data. Android phones and tablets allow users to monitor several health metrics such as weight, food intake, blood

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pressure, asthma, blood glucose, HbA1c (glycated haemoglobin), cholesterol levels, body temperature, respiration rate, oxygen levels, intraocular pressure, bowel movements, and heart rate. Several treatment domains encompass fitness, diabetes, asthma, obesity, and hypertension. Uses technology to expand the clinical contexts of healthcare practitioners. Telemedicine is a broad term that encompasses the use of technical advancements in the healthcare business to provide remote treatment. The increasing consumer desire for self-monitoring is creating opportunities for digital giants to develop mHealth applications.

Here are a few of the most widely used smartphone apps connected to health:

Kardia mobile application:

In December 2011, there were a cumulative sum of 10 billion individuals who were inaccessible. Diabetic individuals can oversee their cardiovascular well-being to mitigate their general susceptibility to cardiovascular illness. Medical professionals recommend undergoing a cardiac examination, which involves an electrocardiogram (ECG). Moreover, can you surmise? The Artmobile 6L is the world's first and only ECG heart monitor with 6 leads that has been authorized by the US FDA. The Artmobile 6L is a compact and easily transportable electrocardiogram (ECG) monitor that is capable of delivering a high-quality ECG reading within around 30 seconds. The item will be advantageous for you. identify Cardiac arrhythmias encompass atrial fibrillation, tachycardia, and bradycardia.

Cardiac arrhythmias can lead to cerebrovascular accidents and cardiac insufficiency. Atrial fibrillation is a medical disorder characterized by insufficient pumping of blood by the heart, resulting in the accumulation and formation of blood clots. If the blood clots become dislodged and travel to the artery in the brain, they have the potential to result in a life-threatening obstruction or stroke.

Identifying tachycardia or bradycardia can also assist in the prevention of heart failure. The Alive or Artmobile 6L is a cutting-edge heart monitor designed for use at home. It is capable of detecting variations in your heart rhythm and notifying you of any potential cardiac issues.

The pandemic's effect on cardiovascular health. Consequently, cardiologists are adopting contemporary technologies to discover innovative approaches for treating patients.

Due to the pandemic, people are increasingly utilizing telehealth services for cardiovascular treatment. Individuals with cardiovascular illness can get advantages from telemedicine through remote monitoring and consultation. One major advantage of telehealth visits is the ability to remotely confer with a cardiologist, which is particularly beneficial for patients living in rural areas. Given the current pandemic situation, it is more suitable to use tele-electrocardiogram (ECG) home monitoring. This involves using mobile phone applications that are user-friendly and enable the direct transfer of ECG readings to healthcare specialists for inspection. Alienor's Kordia app, which can be downloaded on iOS and Android, allows users to record and store single-channel ECGs along with the Heart Monitor.

TGA-approved (ARTG) refers to a product that has been officially authorized by the Therapeutic Goods Administration (TGA).Alienor's free Kordia app for iOS and Android, when used with the Heart Monitor, records and stores single-channel ECGs. The revised filtering technique reduces artifacts, leading to accurate tracing with great fidelity. The available downloads on Google Play are as follows: Over 100,000

Bluestar Diabetes App:

The BlueStar Diabetes App, developed by Weldon Inc., functions by recording blood-glucose levels and delivering immediate coaching. The algorithm developed by Weldon examines data from more than 20,000 automated coaching messages and provides a customized coach to help patients with their medication and therapy management. Engaging in the practice of submitting inquiries about diabetes and obtaining answers from knowledgeable diabetes educators can be beneficial. In addition, the application monitors the user's prescriptions, sends notifications, and offers nutritious recipes, meal planning, and guidance on lifestyle choices. The application is capable of integrating with fitness trackers and can be paired with the OneTouch Verio Flex® meter to transmit blood glucose readings wirelessly to the application.

Mobile applications for physical fitness:

Prior to delving into the various advantages of fitness applications, let us examine their historical background. Google Health appeared to be quite successful at its launch in 2008. If it were launched now, it would most likely achieve success. However, due to its lack of popularity at the time, the corporation had no choice but to terminate the project in 2011. What were the reasons for the failure of Google Health, despite the abundance of potential it offered?

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Living a healthy lifestyle has become a popular trend in recent years. In contemporary times, maintaining good health encompasses not only physical fitness, but also possessing an attractive appearance and achieving success. Obesity and sedentary office employment are increasingly acknowledged as contributing contributors to illness.

Due to these and other health-related challenges, millions of people worldwide engage in sports. A fitness app is a downloadable program that may be used on any mobile device to maintain physical fitness. In 2015, there were more than 165,000 health-related applications accessible on the two most widely used platforms, the iPhone operating system (iOS) and Android. The user's text is "[1]". Applications can aid individuals in modifying their behaviors by enabling them to establish fitness objectives, regulate their calorie consumption, obtain workout recommendations, and showcase their accomplishments on social media platforms.

These platforms can serve as a means to promote healthy behavior change by offering tailored activities, fitness guidance, and nutrition programs. Fitness applications can facilitate the integration of health data from wearable devices with third-party devices, hence enhancing accessibility. Through the incorporation of gamification features and fostering a sense of competition among friends and family

Activity tracking applications:

Wearables are commonly utilized in tandem with activity tracking applications. Regardless of whether or not you engage in gym workouts or sports, you may still make use of activity tracking software to ensure that you get sufficient physical activity. These applications can monitor the number of steps you have taken and the amount of calories you have consumed. Geolocation can be utilized to monitor the distance covered. Two particularly thrilling features include the assessment of sleep quality and the implementation of intelligent alarm clocks that rouse users during the REM sleep phase, facilitating a swift and effortless awakening.

Several activity tracking applications are compatible with wearable devices. However, in the absence of a wearable, a smartphone is sufficient to gather data.

Keeping a record of your everyday activities can be difficult, particularly when you are monitoring various behaviors. The applications offered include basic checklists, social networks for developing habits, and personal data centers. With any luck, you will be able to locate a suitable option that fulfills your criteria. Nutrition applications simplify the process of calorie counting and finding new recipes.

Mobile applications for nutritional purposes:

These programs assist users in maintaining a healthy weight by quantifying calorie intake and expenditure, tracking hydration levels, and promoting nutritious eating behaviors. In addition, they can assist in monitoring your coffee consumption and managing a healthy body fat weight and percentage. The smartphone in your possession is a remarkable feat of technology. The processing capacity of this device much surpasses that of the computers utilized by NASA during the Moon landings, and it connects you to a worldwide network including almost 3 billion individuals. Modern diet applications utilize the capabilities of your smartphone to help you effectively manage your nutrition and well-being by promoting healthier eating habits. We conducted a comparative analysis of the top 10 weight loss applications for Android on an iPhone running iOS. Below is a summary of those choices, along with their benefits and drawbacks. Although several of the diet applications on our list offer features such as calorie tracking and meal logging, we have also included some unique and unconventional alternatives.

Keep in mind that the true gauge of an app's value lies in its ability to aid you in making beneficial modifications. If an application fails to motivate you to alter your dietary habits, it is simply a futile expenditure of time. The main focus of these apps is on individual goals. If you are struggling to adhere to a nutritious eating plan, the application can aid you in creating shopping lists and gathering recipes for wholesome food options. Three exemplary applications in this category include Healthy Out, Calorie Counter & Food Diary, and MyPlate Calories Tracker.

Applications for quantifying physical activity:

Wearables are commonly utilized in tandem with activity tracking applications. Even if you don't visit the gym or engage in sports, you may still make use of activity tracking software to ensure that you get sufficient physical activity. These applications can monitor the number of steps you have taken and the amount of calories you have consumed. Geolocation can be utilized to monitor the distance covered. Two particularly intriguing features are the assessment of sleep quality and the implementation of intelligent alarm clocks that rouse users during the REM sleep phase, facilitating a swift and effortless awakening. Several activity monitoring programs are compatible with wearables,

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however, in the absence of one, a smartphone possesses sufficient capability to gather data. Engaging in regular physical activity can assist individuals in preserving a desirable body weight and reducing their susceptibility to ailments such as coronary heart disease, diabetes, and cancer. Additionally, it can aid in fortifying the heart, improving pulmonary function, and reducing the likelihood of experiencing depression.

II. CONCLUSION

The Centres for Disease Control and Prevention (CDCP) recommend that individuals engage in a minimum of 150 minutes of moderate-intensity aerobic activity per week. However, it might be challenging to find the drive to engage in physical activity. A 2014 study conducted with a sample of 15 mobile app users found that fitness applications had the potential to inspire users to enhance their level of physical activity. Nevertheless, it is advisable for users to take prudence when utilizing a fitness application, as shown by research conducted in 2015. The researchers examined 30 widely used fitness applications and found that general compliance with the American College of Sports Medicine's standards was lacking. Only one application achieved a score exceeding 50%. However, it may be challenging to find the drive to engage in physical activity. Based on a study conducted in 2014 with a sample size of 15 individuals who use mobile apps, it was shown that fitness applications have the potential to encourage users to engage in more physical activity. Nevertheless, based on a study conducted in 2015, it is advisable for users to be cautious while selecting an application.

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