Gym Management System – Workout World

A Project report submitted in partial fulfilment of the requirements of the award of the degree of

Bachelor of Technology

in

Computer Engineering

by

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under the guidance of

Mrs Reena Sharma, Assistant Professor

(Session 2021-22)

Department of Computer Engineering

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Department Certificate

This is to certify that **Mr. Devendra Singh Rao (PCE20CS051), Mr. Divyansh Agarwal (PCE20CS054), Ms. Esha Kapoor (PCE20CS058)**, and **Mr. Gautam Sharma (PCE20CS065)** of the **Poornima College Of Engineering**, Department of Computer Engineering, has submitted this project report entitled **"WORKOUT WORLD"** under the supervision of **Prof. Reena Sharma**, working as **Assistant Professor in the Department of Computer Engineering** as per the requirements of the Bachelor of Technology program of Poornima College of Engineering, Jaipur.

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CANDIDATE'S DECLARATION

I hereby declare that the work which is being presented in this project report entitled **"WORK OUT WORLD**" is the partial fulfillment for the award of the Degree of Bachelor of Technology in (Computer Engineering), submitted in the Department of Computer Engineering, Poornima College of Engineering, Jaipur, is an authentic record of my work done during the period from July 2021 to December 2021 under the supervision and guidance of **Mrs. REENA SHARMA (Assistant Professor In Department of Computer Engineering)**.

We have not submitted the matter embodied in this project report for the award of any other degree.

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SUPERVISOR'S CERTIFICATE

This is to certify that the above statement made by the candidate is correct to the best of my knowledge.

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CHAPTER 1

ABSTRACT

Workout World is a beneficial website for people as well as businesses. Gym management motivates users to engage with a variety or appraise offers to spend their money sensibly. In this pandemic situation, people are willing to do gym workouts by seeing online portals. To provide an online gym, this particular website works on it and here people can find shopping of gym types of equipment. We designed a website using HTML5 and CSS3. The gym management system can handle all the required and tiny details simply and accurate info security consequently to the users. Once login user can see the payment option after billing user can unlock the videos access and shopping of gym equipment is free for all users. This project determination effort on MySQL and full-stack used for gymnasium management.

INTRODUCTION

The present scenario is time-consuming and also it is very costly because it involves a lot were many limitations in this system. The organization is not capable. Also, there is a problem with paperwork as all things are kept in a single register. Due to this, the time for recording details of every member and employee is large. The report generation is not so easy. The most problem of the project is to style and change a user-friendly system that is simple to use and economical electronic system. The matter must develop an associate correct and versatile system which will eliminate knowledge redundancy, additionally to produce higher graphical computer program. The website should also take safe of the security of the record data by using login & PIN.

The information about the many things confined in the project are like members, admin, equipment of gym and videos can catch by just a few clicks unlike the paper documents required the reading for such data. It helps in generating the several groups according to their preference of selecting or if they want a particular video. It helps easy to generate the information of various sessions performed in the gym are like paying the amount. It can be kept and later calculated and those who did not pay the fee cannot get the sessions. It also helps the users in dropping the carbon footprint as the amount of paper used in the company decreases. This also helps in keeping the regular width of the supervision system as if there is a case where the administration involves more than one person to manage the gym.

CHAPTER 2

PROBLEM STATEMENT & OBJECTIVE

The main objective of the Project on Gym Website is to manage the details of Gym, Trainer, Member, Facility, Fitness Class. It manages all the information about Gym, Time Slot, Fitness Class, Gym. The project is built at the administrative end and thus only the administrator is guaranteed the access. The purpose of the project is to build an application program to reduce the manual work for managing the Gym, Trainer, Time Slot, Member. It tracks all the details about the Member, Facility, Fitness Class.

Functionalities provided by Gym Website are as follows:

- Provides the searching facilities based on various factors. Such as Gym, Member Facility, Fitness Class
- Gym Website also manages the Time Slot details online for Facility details, Fitness Class details, Gym.
- It tracks all the information of Trainer, Time Slot, Facility etc.
- Manage the information of Trainer
- Shows the information and description of the Gym, Member
- To increase the efficiency of managing the Gym, Trainer
- It deals with monitoring the information and transactions of the Facility.
- Manage the information of Gym
- Editing, adding and updating of Records is improved which results in proper resource management of Gym data.
- Manage the information of Facility
- Integration of all records of Fitness Class.

CHAPTER 3

Literature Review

Paper 01:

Continuity and Discontinuity of Sport and Exercise Type During the COVID-19 Pandemic. An Exploratory Study of Effects on Mood (2021)

By: Noora J. Ronkainen, Arto J. Pesola, Olli Tikkanen and **Ralf Brand**

SUMMARY:

The governmental lockdowns following the Coronavirus outbreak from early 2020 onwards imposed drastic changes in people's daily lives, with possible physical, social, and psychological consequences. Although the lockdowns prevented the explosive spread of the virus in many countries, there were side effects. found that the public interest in exercise surged quickly following the first lockdowns, and other studies have shown behavioural changes toward increased physical activity and exercise. 2020 more adults in the UK have met the physical activity guidelines, compared to the situation before the lockdown.

According to an international study with more than 13.000 participants from 18 countries worldwide, 31.9% reported having started exercising more frequently during the lockdown, whereas 44.2% reported no change, and only reported a decrease of usual exercise frequency. This impression is put into perspective, however, as soon as one takes into account that the various studies have measured different aspects of physical activity and exercise. Scholars have noted that potential negative psychological effects of pandemic-related lockdown may include posttraumatic stress symptoms, anxiety, depression, anger, and confusion. findings from the large international study concluded that those who exercised most during the lockdown reported better mood.

Until now, most of the studies have focused on changes in amounts of physical activity or exercise, and not whether people have changed the type of activities.

The mood is a much-studied and often measured concept in sport and exercise psychology, but the elusive and complex foundations of moods' philosophical meanings are rarely explained. In the following, these two different analytical approaches to mood are briefly described. Conceptualizations of mood are similar in the parent discipline of psychology and sport and exercise psychology. While emotion is typically short, intense, the mood has a longer duration, is of lower intensity, and does not need to be about anything in particular. Moods are primarily seen as indicators of psychological disturbance or well-being, and almost always as a reaction of the individual to the world outside.

On the other hand, in philosophy, there is a more existentialist perspective to the understanding of mood and its constitutive role in human lives. From this perspective experiencing moods is not only a reaction to encounters of our daily going-about, but rather part of the individual's constructive access to the world: Mood is the basic model through which the world discloses itself to us, and how we experience the world.

Earlier psychological studies already sought to investigate whether different types of exercise, typically aerobic or resistance training, are differentially related to mood outcome. In contrast to these earlier studies, we choose the more philosophically-informed theoretical perspective. We are interested in whether and how different ways of exercising might offer different ways of relating to the world.

Paper 02:

COVID-19 lockdown impact on physical activity and anxiety levels among physiotherapy practitioners, teaching faculty and students in Mumbai (2021)

By: Farzan Kamdin, Kruti Khemani, Annamma Varghese

SUMMARY:

COVID-19 is a new variant of coronavirus disease caused by the novel SARS-CoV2 virus that leads to acute respiratory infection. In India, nationwide phase 1 lockdown was announced on the eve of 21 March that included educational, transport, corporate and agricultural sectors.

Amongst the affected professions due to the COVID-19 pandemic, physiotherapy is no exception. Many of the privacy practices and all physiotherapy colleges have had to shut down during the lockdown in Mumbai following the government guidelines of self-isolation and social distancing. A recent study amongst physiotherapy professionals and students inferred self-reported reduction in physical activity and energy expenditure, during the COVID-19 lockdown period. 9 Another study has found the mental wellbeing of exam going undergraduate physiotherapy students in Mumbai to be severely affected, with depression being as high as 65.11% followed by anxiety and stress at 52.71% and 39.53 %, respectively.

The second sub-section included 7 questions on physical activity derived from validated IPAQ-SF, followed by the third sub-section of 7 questions on self-reported anxiety levels using the validated GAD-7 questionnaire. 11-14 The final question was about the inter-dependence of physical and mental health.

The study was executed by sending the online link of google forms to physiotherapy practitioners, teaching faculty and students via emails and social media platforms such as Facebook, WhatsApp, Instagram and LinkedIn messengers.

Incomplete submission of the survey questionnaire was not possible due to the function in google forms which prevents submission or partially answered questions.

The study suggests that physiotherapists as a group spent very little time on vigorous activity and only 40% were indulging in health-enhancing physical activity per week. This is not in keeping with the current WHO guidelines, which emphasizes that everyone, of all ages and abilities, should be physically active and that every type of movement counts. The new guidelines recommend at least 150 to 60 minutes per day for children and adolescents. Contrary to previous studies, physiotherapists appear to be less anxious as a group with a mean GAD-7 score of 7 out of 21.

Paper 03:

The Impact of COVID-19 and Homeschooling on Students' Engagement With Physical Activity (2021)

By: Astrid Roe, Marte Blikstad-Balas and Cecilie Pedersen Dalland

SUMMARY:

While most school systems normally require daily physical attendance during weekdays and bring students together in large groups to learn in a collective endeavour, the closing of schools and the months of social distancing have shifted the site of learning to the home, where learning happens primarily alone or with the help of family members through the technologies available. As Kumiko noted, educational researchers need to investigate different aspects of the educational consequences of the COVID-19 crisis, to avoid the domination of anecdotal evidence about how the shutdown has impacted students' lives. Research has shown that a sedentary lifestyle in students is associated with chronic diseases later in life, as well other health-related risk behaviour such as unhealthy dietary patterns. In this article, we report on how school shutdown has affected the PA of students in Grades 1–10 across Norway.

Teachers throughout the country were asked to perform their teaching from home, through digital devices and remote teaching. As in other countries, Norwegian teachers and school leaders were not prepared to go digital overnight, despite good technological infrastructure. Drawing on surveys administered to both parents and teachers about how digital homeschooling was organized, we have investigated what kind of attendance school has required from students in different grades during the shutdown and the estimated PA they have engaged in during the period of homeschooling. We also mapped what parents and teachers considered to be the main challenges and benefits of homeschooling.

In this article, we mainly emphasize challenges and benefits regarding the students' opportunities to stay physically active. A key finding of PA during home school is that the most active students were those who also worked well with remote schooling in general. This was especially the case with older students. Parents who reported that their children had difficulties following the activities suggested by the school were the same parents who estimated low PA for their children.

The results also suggest that in general, during this period, students had been less physically active than they would have been during open school. In addition to the lack of the expected 1 hour of daily PA, schools should provide, students have stayed at home instead of walking to and from school, going in and out of classrooms, and playing in the schoolyard during breaks. TABLE 5 | Percentage of teachers who reported that the subject was given lower priority than usual. PA than the parents of older children, which is consistent with prior research showing that younger students are more active.

Given that the parents viewed flexibility to structure the day» as one of the main advantages, especially for younger children, it is reasonable to assume that a lot of the PA among the youngest children was initiated by the parents, not the teachers. Prior research has determined that PA plays an important role in both physical and psychosocial health and wellbeing for children and young people, and there is ample evidence that a sedentary lifestyle in students is associated with chronic diseases later in life and other health-related risk behaviours such as unhealthy dietary patterns. Further, the survey shows that, although the youngest students were less engaged in schoolwork than the older children, there was a clear positive relation between time students spent being physically active during a school day and their engagement and effort toward schoolwork. Some parents in the survey reported that their children were asked to use specific apps in PE during home school, but results from both the parent and the teacher survey as well as previous research on teachers' digital repertoires have indicated that there is room for improvement when it comes to using all the digital possibilities for educational purposes.

Digital tools enable, for example, joint digital workout sessions, digital tracing of exercises, and several instructional videos that students could use. Previous research from Norway has suggested that teachers rarely use these forms of digitally innovative ways of teaching. Our materials present a clear trend of teachers prioritizing tasking students with individual assignments that require sedentary work. This study suggests that many students were given too much responsibility for their PA during this period, making PA dependent on their parents' priorities and the parents' possibilities to follow up.

A pedagogical implication from this work is that teachers should consider providing their students with more digital workout sessions and instructional videos, as well as using apps and tracking devices that document students' degree of PA.

Paper 04:

Effectiveness Of Online Learning and Physical Activities Study in Physical Education During Pandemic Covid-19 (2021)

By: Rohmad Apriyanto, Adi S

SUMMARY:

Corona is an infectious disease caused by the SARS-CoV-2 virus. Difficulty breathing, dry cough and fever are usually symptoms experienced by sufferers. Corona disease is a newly discovered infectious disease. Patients who are infected have mild to moderate respiratory symptoms. Currently, corona also affects teaching and learning activities within the Ministry of Education and Culture.

The government takes preventive action by providing policies for the education sector, namely for students to replace face-to-face learning activities with online learning to prevent the gathering of many people in one room, this policy was taken by the government because of the obligation of students to continue studying. The impact of the imposition of social distancing which is enforced makes learning activities more at home so that more activities are carried out from home. physical activities are carried out daily to carry out activities become routine activities.

This study uses descriptive quantitative methods to determine the effectiveness of learning and physical during the COVID-19 pandemic. The population in this study were all students of SMA PLUS ALFATIMAH who carried out online learning.

Online learning is becoming popular these days because everything has to be at a distance. Besides preventing the transmission of the coronavirus. WhatsApp group and google form are platforms that are often used because students are very familiar with them. In addition, the platform is easy to use even in low signal conditions. The lecture teacher method is an interesting method to use during this pandemic. This is because teachers are the primary source of information. In physical education learning, teachers with the lecture method can make students move. The first problem with distance learning is that there are more assignments. Besides that, a stable internet connection also makes it difficult. The effectiveness of this pandemic study is high and some consider it normal. There is a lot of research that shows the effectiveness of online learning. First, research conducted by, this study states that students in online learning have the same or even better learning outcomes than students who learn traditionally. This fact is apart from students who are very satisfied with online learning itself. Second, which examines the meaning of a traditionally packaged and mixed format classroom. Students in mixed forms have a strong sense of community.

Paper 05:

Impact of COVID-19 Pandemic on University Students' Physical Activity Levels: An Early Systematic Review (2021)

By: Alejandro López-Valenciano, David Suárez-Iglesias, Miguel A. Sanchez-Lastra and Carlos Ayán

SUMMARY:

The world is experiencing a life-threatening situation due to the COVID-19 pandemic. By 14th October 2020, there have been 37.888.384 confirmed cases, including 1.081.868 deaths. We still do not have silver bullets or shortcuts, and the answer requires using every single tool in the toolbox.
To this purpose, one of the most important strategies is to reduce the mixing of susceptible and infectious people through early ascertainment of cases or reduction of contact, implementing measures such as quarantines and lockdowns, which have proven highly effective in controlling the spread of the disease.

Organization global recommendations on PA for health, and the trend was that physical inactivity was not increasing, while it was time spent on sedentary behaviour. Previous studies have identified an increase in physical inactivity during the transition from adolescence to adulthood and throughout the college/university years. Pinguid et al. estimated that the prevalence of physical inactivity among university students in 23 low, middle and high-income countries were 41%.
Social distancing and confinements have largely altered the lifestyle of university students, and it is not clear how the changes in the aforementioned factors are affecting the PA levels of this population. This review aimed to analyse if the PA levels of university students changed during the confinements and their adherence to the current global PA recommendations. Despite existing recommendations, suggesting several potential tactics to keep active during the lockdown that is available to young populations, we hypothesized that total PA levels would be reduced due to the confinement.

The information provided by the two studies does not answer completely the main question about levels of physical activity. These circles represent the degree of certainty of the variable analysed on the GRADE scale. A circle with a symbol inside represents a very low certainty of this variable, two circles with the symbol inside represent low certainty, three circles with the symbol indicate moderate certainty and the four circles with the symbol represent a high certainty of this variable.

University students generally reduce their PA levels compared to their childhood. Factors affecting the decline of PA levels during this life stage include changes in psychosocial aspects and residency and greater time demands, such as work and class time. Our findings expand this previous knowledge by suggesting that the reduction in total PA levels has been exacerbated during the confinements.

This finding is important for two main aspects. COVID-19 have increased mental health problems in both adults and young populations. Our results confirm that PA levels were generally reduced during the lockdowns compared to the previous situation. Efforts should be made to increase PA levels in this situation not only for the sake of physical health but also psychological well-being. Furthermore, incentivizing a routine through daily at-home PA could help maintain a certain sense of routine and organization, helping to maintain mental health during the lockdown and also facilitating the routine back to university. Second, because it is well known that sedentary behaviour and insufficient PA patterns in childhood are likely to persist into adulthood, increasing the risk of major health complications and university students are transitioning within these two life stages.

Paper 06:

Mental Health and Physical Activity: A COVID-19 Viewpoint (2021)

By: Sunday O. Onagbiye1, Zandile June-Rose Mchiza, Ezihe L. Ahanonu, Susan H. Bassett and Andre Travill

SUMMARY:

Mental health can be understood as a "state of well-being in which an individual realises that his or her abilities can cope with the normal stresses of life, work productively, and make a contribution to his or her community".

Health Organisation reported that globally, 1 in 4 individuals could experience mental or neural ailments at a particular stage of their existence. It was then estimated that about 450 million people were suffering from mental disorders and were among the leading causes of infirmity and frailty throughout the globe.

In low-income and middle-income improving self-esteem and social skills, whereby being more active enhance weight loss, and if doing group or team activities, increases the possibility of meeting new friends and like-minded people.
Inter-Agency Standing Committee urges people to eat well, get enough sleep, and engage in regular physical activity and exercise.
Regular participation in physical activity or exercise has been shown to improve an individual's total well-being and is regarded as a potent natural remedy for several popular mental illnesses, such as depression, anxiety, attention deficit hyperactivity disorder, stress, post-traumatic stress disorder, memory, thinking, self-esteem, increase energy, resilience, better sleep, mood, boost the immune system, and lower the influence of stress. Physical activity and exercise coupled with other treatment modalities to prevent and manage mental health conditions seem to be more effective, with evidence for the positive effects of physical activity on mental health steadily growing.
The WHO physical activity recommendations were to promote and maintain health by engaging in physical activity for at least 150 minutes of moderate-intensity aerobic physical activity, or at least 75 minutes of vigorous-intensity aerobic physical activity or an equivalent combination of moderate -and vigorous-intensity activity throughout the week.

These types of exercises could improve individual heart rates and reduce the risk of cardiovascular disease, type 2 diabetes, high blood pressure, and protect against the risk of cancer. Other types of exercises include strength exercises or resistance exercises such as weight lifting, push-ups, and crunches to improve lean muscle mass for bodyweight loss; balance exercise that could assist individual capacity to regulate and stabilise the location of the body; flexibility or stretching exercises that could improve individual range of motion and lower the risk of injuries.

Paper 07:

The COVID-19 pandemic and physical activity (2020)

By: Jeffrey A. Woods, Noah T. Hutchinson,
Scott K. Powers, William O. Roberts

SUMMARY:

Although the main risk of COVID-19 is to cause injuries to the upper and lower respiratory tract and lung, other organs are not necessarily void of this viral infection. It is believed that the entry of SARS-CoV-2 in the human tissues is facilitated via angiotensin-converting enzyme, however, the poor absence of ACE-2 receptors in the central nervous system does not mean that CNS is resistant against this type of viruses.66 Indeed, it has been shown that when SARS-CoV-2 types of the virus were given intranasally to mice, the virus translocated into the thalamus and brainstem and was significantly lethal suggesting that CNS could be one of the targets of SARS-CoV-2. It is suggested that the virus can reach the CNS via neural circuits through trans-synaptic pathways. The relatively long latency period of the virus of 5–12 days would allow the virus to significantly damage medullary neurons, and indeed, patients infected by SARS-CoV-2 reported severe neurologic symptoms manifested as acute cerebrovascular diseases, consciousness impairment and skeletal muscle symptoms.68 Therefore, these observations suggest that SARS-CoV-2s could belong to the group of neuroinvasive viruses. One of the most common protections against virus infections is quarantine. However, social isolation often causes psychological and mental disorders including acute stress disorder, exhaustion, detachment from others, irritability, insomnia, poor concentration indecisiveness, fear, and anxiety. Data suggest that depression, anxiety, and post-traumatic disorders have significant effects on the immune system, resulting in mast cell activation, increased generation of cytokines like IL-1, IL-37, TNF, IL-6, and C-reactive protein.

Quarantine-associated mental and psychological disorders weaken the protective capacity of the immune system against diseases making individuals more vulnerable. Overall, it is suggested that the SARS-CoV-2 virus directly or, with associated conditions like quarantine-induced mental and psychological disorders, can damage or impact the CNS negatively. However, the progress and severity of virus-induced diseases could vary greatly. The general observation is that under the age of 60 years, mortality rates and severity of symptoms of SARS-CoV-2 infections are much less than in advanced age. To date, no data is available on whether the level of physical fitness affects the progress of SARS-CoCV-2 infections. However, it is well documented that regular exercise-induced adaptations enhance the effectiveness of the immune system,70 which actual level could affect the severity of SARS-CoV-2 infection. However, the quarantine-associated decline in the immune system as a result of the development of depression or traumatic disorders can be prevented and/or attenuated. Indeed, the inflammatory process generated by ROS can be more effectively detoxified by antioxidant systems in various organs including the brain of well-trained individuals from adaptations to exercise training.71 In addition, exercise training can efficiently decrease depression and is one of the power modulators of the neuroprotective and anti-depressive effects of PA and exercise is the brain-derived neurotrophic factor .

Paper 08:

Physical Activity Protects Against the Negative Impact of Coronavirus Fear on Adolescent Mental Health and Well-Being During the COVID-19 Pandemic (2021)

By: Laura J. Wright*, Sarah E. Williams and Jet J. C. S. Veldhuijzen van Zanten

SUMMARY:

Coronavirus to be associated with higher anxiety and depressive symptoms, and fear of infection during periods of quarantine from other viruses to be associated with stress. By extending these relationships into other indicators of health and well-being, the results of the present study suggest that it is not the prevalence of the Coronavirus but rather the fear of the impact it could have on health that is associated with poorer adolescent mental health. An important novel finding of the current study is that physical activity counteracted the negative impact of Coronavirus fear on mental health and well-being in adolescents. Moreover, the size of the beta weights in the regressions predicting depression, vitality, perceived health, and fatigue demonstrate that physical activity was a stronger predictor than Coronavirus fear. Indeed, physical activity is suggested to impact mental health in different ways, and some of these pathways might be especially relevant during the Coronavirus pandemic. For example, physical activity can have an immediate positive effect on mood and feelings of energy and physical activity can be a distraction from negative thoughts and stress related to the Coronavirus fear. Physical activity can also bring a structure or daily routine to life, which is likely to be heavily disturbed as a result of the lockdown. As such, it can provide a sense of control and mastery, which can also impact well-being. The associations between physical activity and more positive mental health and well-being may in part be due to the environment of the activity. Although physical activity location was not assessed in the current study, in other studies during the Coronavirus, outdoor physical activity has been reported in over 90% of individuals. During the data collection in the present study, physical activity was one of the few reasons adolescents could leave the house. Furthermore, data from May to July 2020 indicate that more adolescents were being active outdoors, with the number of people going for a walk and cycling for fun or fitness being higher compared with the same period in 2019. Consequently, it could be suggested that a number of the study participants may have been doing most of their physical activity outdoors. Outdoor physical activity is generally associated with lower depression, tension, anger, and confusion compared to indoor physical activity, and has been associated with improved emotional well-being, including in adolescents. Moreover, adults who spent more time doing physical activity outdoors during the current Coronavirus displayed better well-being. Therefore, the simple act of being able to leave the confinements of the house to exercise may have had an additional benefit to mental health. However, data also suggest an increase in adolescent participation in gym and fitness during this same time compared with 2019. Considering that public gyms were closed as part of lockdown restrictions, it is likely that these gym and fitness activities were undertaken at home.

Paper 09:

COVID-19: Implications for Physical Activity, Health Disparities, and Health Equity (2021)

By: Rebecca Hasson, James F. Sallis, Nailah Coleman, Navin Kaushal, Vincenzo G. Nocera, and NiCole Keith

SUMMARY:

Health Organization recommended following an online exercise class as a strategy for staying active at home during shelter-in-place restrictions. As a result, industries most tied to health, fitness, and recreation have developed online exercise programming to help while emerging work determinants among the general population affected by the pandemic, empirical investigations on how these determinants affect populations that have been economically and socially marginalized are scant and unclear based on available evidence from the scientific literature. No studies are demonstrating whether earlier successful interventions are also effective during the COVID-19 pandemic. Hence, identifying interventions that have worked to reduce physical activity disparities in the past, followed by evaluation of these approaches for adoption in the current climate, could prove useful. Over the past 2 decades, there has been a dramatic increase in the number and types of factors influencing physical activity behaviour and social-ecological models enable a better understanding of these multiple factors. These models, when applied to understanding physical activity participation, have received empirical support as correlates of physical activity have been identified on multiple levels. Findings from multi-level studies are informative as identifying strong correlates of physical activity behaviour at different levels provides insight on how to design future interventions. For instance, change at the individual level might include facilitating planning and time management skills to engage in physical activity. Effective interventions focused on the individual level include those that have been adapted to the needs and preferences of groups that have been marginalized. For instance, delivering home-based physical activity programs in Spanish and providing suitable exercise equipment to older adults have shown promising results. Changes at the social level involve creating community groups that help instil safety, motivation and continue to improve our understanding of physical activity behaviour and its individuals and families move more at home. Unfortunately but predictably, most of these online programs require a monthly subscription. While the overwhelming majority of US households have internet access and a broadband subscription, access to broadband internet decreases by approximately 23% for those with an income of less than $25,000. Unstable internet connection has also been noted in low-income households. The lack of accessibility of these online exercise programs may also be an issue for individuals with disabilities and low-income families where physical space may be limited. For example, Ranasinghe and colleagues provided strategies for increasing physical activity during the pandemic by identifying an active space within the household to use available equipment for exercise. Low-income families were less likely to have exercise equipment in the home, and excess movement in close quarters may be burdensome to other members of the household. Thus, internet accessibility and space restrictions may limit the ability of low-resource communities to use newly developed online resources to engage in physical activity during the pandemic.

Paper 10:

Physical Fitness and Exercise During the COVID-19 Pandemic: A Qualitative Enquiry (2020)

By: Harleen Kaur, Tushar Singh,
Yogesh Kumar Arya and Shalini Mittal

SUMMARY:

SARS-CoV-2 causes COVID-19 characterized by the major symptoms of fever, dry cough, myalgia, and fatigue. Currently, there are neither vaccines nor clinically proven effective therapeutics. Convalescent plasma and anti-viral drugs have shown some promise in treating COVID-19 patients, but their widespread use awaits statistical rigour. Behavioural strategies of social distancing and hygiene are currently the best and only methods to limit the spread and reduce morbidity and mortality. As this virus strain is novel to the human immune system, we are dependent on aspects of our innate immunity to deal with the initial infection. Like most viral infections, if we survive the infection, over the course of weeks we develop antibody and cell-mediated immune responses specific to the virus. In most instances, this exposure-related 'training' of our immune systems offers us long-lasting protection from re-infection or, if we are re-infected, disease symptoms are much milder. However, we currently do not know if our response to SARS-CoV-2 is sufficient to be protective and long-lasting. Along with tests for the presence of viral particles and plasma antibodies, a clear need exists for research related to vaccine development and research to determine whether our immune response is adequate to protect us. The public health recommendations to prevent SARS-CoV-2 spread have the potential to reduce daily physical activity. These recommendations are unfortunate because daily exercise may help combat the disease by boosting our immune systems and counteracting some of the comorbidities like obesity, diabetes, hypertension, and serious heart conditions that make us more susceptible to severe COVID19 illness. Exercise affects the immune system and its anti-viral defences. 1 in the respiratory tract, have shown that moderate exercise, performed before or after infection, improves morbidity and mortality to the infection. Conversely, preclinical studies have also shown that intense exercise leads to poorer outcomes in response to respiratory viral infections. Follow-up studies have elucidated some understanding of the mechanisms responsible for these observations. Animal experiments administering influenza and herpes simplex viruses An early epidemiological study suggested that intense, prolonged exercise was associated with an increase in upper respiratory tract infections. This work led to the concept of the inverted J theory, where moderate exercise reduces, and prolonged, high-intensity exercise increases susceptibility to infection. Many studies since have supported the theory concerning individual immune parameters including those specific to viral defence. For example, salivary lactoferrin and its secretion rate increased for up to 2 hours after moderate exercise. Mucosal lactoferrin is important because it can prevent DNA and RNA viruses from infecting cells by binding and blocking host receptors. Conversely, low levels of secretion rates of salivary immunoglobulin A, which can bind to viruses and inactivate them, is associated with upper respiratory tract infection in some athletes undergoing intense training.

Comparison Table

S.No	Paper title	Author's Name	Year	Approach used	Finding
1	Continuity and Discontinuity of Sport and Exercise Type During the COVID-19 Pandemic	Noora J. Ronkainen, Arto J. Pesola, Olli Tikkanen and Ralf Brand	2021	Aware people regarding exercise at home to overcome physical and mental problems.	Lockdown imposed drastic changes in people's daily lives, with possible physical, social, and psychological consequences. So exercise is best option to overcome these.
2	COVID-19 lockdown impact on physical activity and anxiety levels among physiotherapy practitioners, teaching faculty and students in Mumbai	Farzan Kamdin, Kruti Khemani, Annamma Varghese	2021	Utilize the emails and social media platforms for practitioners, teaching faculty and students.	A recent study amongst physiotherapy professionals and students inferred self-reported reduction in physical activity and energy expenditure, during the COVID-19 lockdown period.
3	The Impact of COVID-19 and Homeschooling on Students' Engagement With Physical Activity	Astrid Roe, Marte Blikstad-Balas and Cecilie Pedersen Dalland	2021	Use of digital technologies to continue the studies an learning of students.	A pedagogical implication from the work is that teachers should consider providing their students with more digital workout sessions and instructional videos, as well as using apps and tracking devices that document students' degree of PA.

4	Effectiveness Of Online Learning and Physical Activities Study in Physical Education During Pandemic Covid-19	Rohmad Apriyanto, Adi S	2021	To stop transmission of coronavirus, people find online learning is best option.	Online learning is becoming popular these days because everything has to be at a distance. Besides preventing the transmission of the coronavirus. WhatsApp group and google form are platforms that are often used because students are very familiar with them.
5	Impact of COVID-19 Pandemic on University Students' Physical Activity Levels	Alejandro López-Valenciano, David Suárez-Iglesias, Miguel A. Sanchez-Lastra and Carlos Ayán	2021	To take all measures to protect students from virus.	This review aimed to analyse if the PA levels of university students changed during the confinements and their adherence to the current global PA recommendations
6	Mental Health and Physical Activity: A COVID-19 Viewpoint	Sunday O. Onagbiye1, Zandile June-Rose Mchiza, Ezihe L. Ahanonu, Susan H. Bassett and Andre Travill	2021	Increase use of different exercises and yogas for improving physical and mental state.	The WHO were promote physical activities to maintain health by engaging in physical activity for at least 150 minutes of moderate-intensity aerobic physical activity, or at least 75 minutes of vigorous-intensity aerobic physical activity throughout the week.
7	The COVID-19 pandemic and physical activity	Jeffrey A. Woods, Noah T. Hutchinson, Scott K. Powers, William O. Roberts	2020	Do exrecises and practices to increase you inhalation and exalation power because this virus affects lungs mainly.	Although the main risk of COVID-19 is to cause injuries to the upper and lower respiratory tract and lung, other organs are not necessarily void of this viral infection.

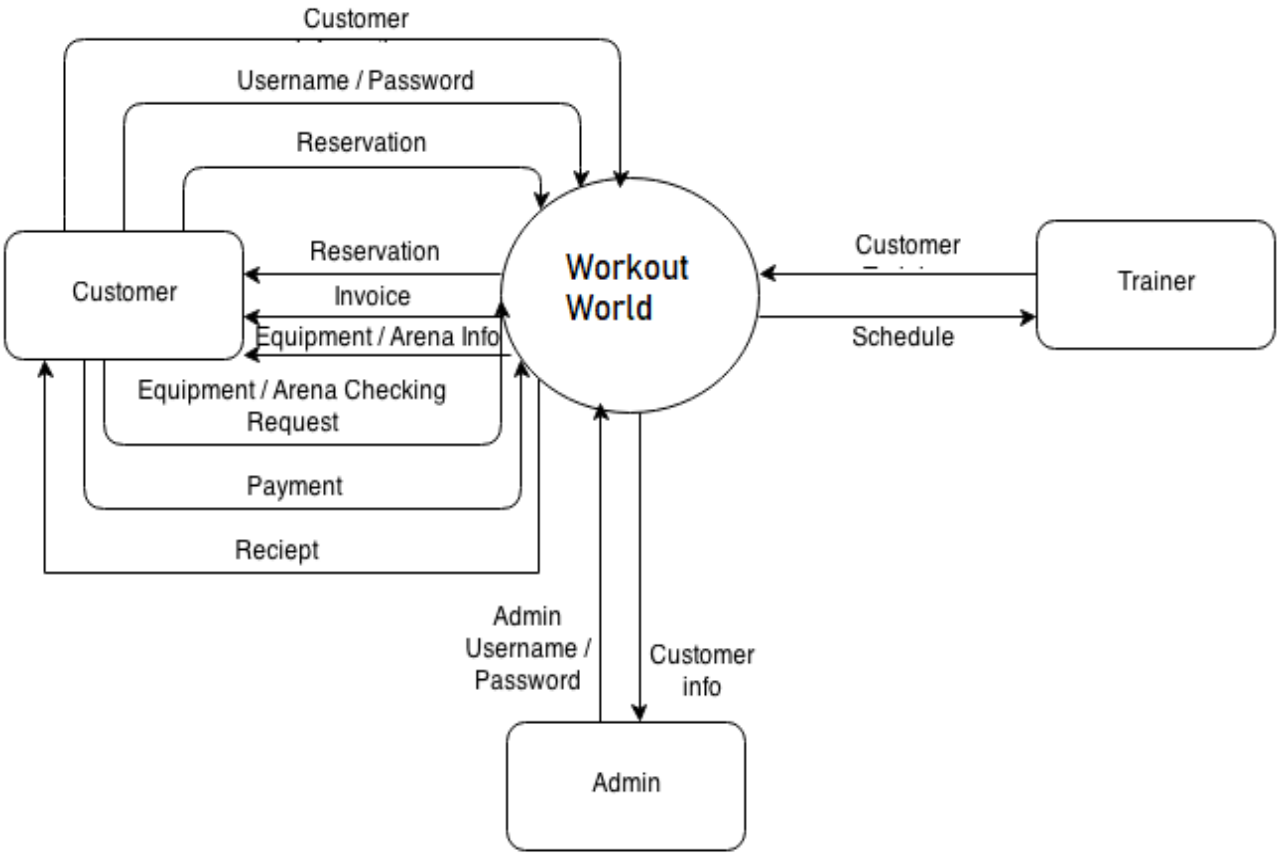
8	Physical Activity Protects Against the Negative Impact of Coronavirus Fear on Adolescent Mental Health and Well-Being During the COVID-19 Pandemic	Laura J. Wright*, Sarah E. Williams and Jet J. C. S. Veldhuijzen van Zanten	2021	Closing of gym and other physical activities affects adolescents suffers from various difficulties.	According to data collected, physical activity was one of the few reasons adolescents could leave the house. Furthermore, data from May to July 2020 indicate that more adolescents were being active outdoors in 2019.
9	COVID-19: Implications for Physical Activity, Health Disparities, and Health Equity	Rebecca Hasson, James F. Sallis, Nailah Coleman, Navin Kaushal, Vincenzo G. Nocera, and NiCole Keith	2021	Health Organization recommended following an online exercise class as a strategy for staying active at home during shelter-in-place restrictions.	Over the past 2 decades, there has been a dramatic increase in the number and types of factors influencing physical activity and social-ecological models enable a better understanding of these factors.
10	Physical Fitness and Exercise During the COVID-19 Pandemic: A Qualitative Enquiry	Harleen Kaur, Tushar Singh, Yogesh Kumar Arya and Shalini Mittal	2020	Increasing immunity power through adding some supplements in diet and some changes in daily routine.	Exercise affects the immune system and its anti-viral defences. In the respiratory tract, have shown that moderate exercise, performed before or after infection, improves morbidity and mortality to the infection.

CHAPTER 4

Proposed Approach

In the software quality plan we will use the following SQA Strategy:

- In the first step, we will select the test factors and rank them. The selected test factors such as reliability, maintainability, portability, etc, will be placed in the matrix according to their ranks.
- The second step is for identifying the phases of the development process. The phase should be recorded in the matrix.
- The third step is that identifying the business risks of the software deliverables. The risks will be ranked into three ranks such as high, medium and low.



CHAPTER 5

Conclusion

Our project is only a humble venture to satisfy the needs to manage their project work. Several user-friendly coding has also been adopted. This package shall prove to be powerful in satisfying all the requirements of the school. The objective of software planning is to provide a framework that enables the manager to make reasonable estimates made within a limited time frame at the beginning of the software project and should be updated regularly as the project progresses

Future Scope

In a nutshell, it can be summarized that the future scope of the project circles around maintaining information regarding:

- We can give more advanced software for Gym Website including more facilities
- We will host the platform on online servers to make it accessible worldwide
- Integrate multiple load balancers to distribute loads of the system
- Create the master and slave database structure to reduce the overload of the database queries
- Implement the backup mechanism for taking backup of codebase and database on regular basis on different servers

The above-mentioned points are the enhancements that can be done to increase the applicability and usage of this project. Here we can maintain the records of Gym and Trainer. Also, as it can be seen that nowadays the players are versatile, i.e., so there is a scope for introducing a method to maintain the Gym Website. Enhancements can be done to maintain all the Gym, Trainer, Member, Facility, Fitness classes.

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Research Paper on Physical Activities for Fitness

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Abstract:

Workout World is a beneficial website for people as well as businesses. Workout World motivates users to engage with a variety of activities and offers to spend their money sensibly on their physical health. In this pandemic situation, people are willing to do gym workouts by seeing online portals. To provide an online gym, this particular website works on it and here people can shop for different types of gym equipment. We designed a website using HTML5 and CSS3. This website should handle all the required details simply and accurate information of all the users. Once the user logs in, they can see the payment option after billing users can unlock the full video access and shopping of gym equipment is free for all users. This project will use MySQL and full-stack used for the virtual gym website.

1. INTRODUCTION

The present scenario is very hectic and time-consuming and also it is very costly because it involves many limitations in this system. The organization is not capable. Also, there is a problem with paperwork as all things are kept in a single register. Due to this, the time for recording details of every member and employee is large. The report generation is not so easy. The big problem of the project is to style and change a user-friendly system that is simple to use and economical electronic system. The matter must develop an associate correct and versatile system which will eliminate knowledge redundancy, additionally to produce higher graphical interface. The website should also take the safety of the security of the record data by using login & PIN.

Since the introduction of lockdown in the country the government had imposed, online systems were lifesavers. And it has become an absolute necessity to have a virtual gym management system so that users can watch workout videos and get online mentorship which will help them stay fit from the comfort of their home, as and when they like to do it.
It also offers shopping of fitness equipment (using affiliated links to other shopping websites) so that anyone who visits the site can see our curated collection of fitness

equipment and visit them without registering on the website.

The information about the many things confined in this project are like members, admin, equipment of gym and videos can catch by just a few clicks unlike the paper documents required the reading for such data. It helps in generating the groups according to their preference of selecting or if they want a particular video. It helps easy to generate the information of various sessions performed in the gym which are like paying the amount. It can be kept and later calculated and those who did not pay the fee cannot get the sessions. It also helps the users in dropping the carbon footprint as the amount of paper used in the company decreases. This also helps in keeping the regular width of the supervision system as if there is a case where the administration involves more than one person to manage the gym.

1.1 EXISTING SYSTEM

In the gym management system, if we take this method and accompany the proposed it's far behind. Every single adds the prevailing is manual and done on paper. There could be a computer used somewhere for the work but it's not doing exactly it's supposed which is decreasing the physical work. Entering everything manual to the PC by creating a file isn't exactly what we are talking about in automation.
The existing structure requires tons of manual work which outcomes in taking longer than it should. The processes like updating and matching data also are done manually within the existing structure that's not automated and again time-consuming process. If anybody types wrong details it will take so much time to find and Humans are prone to errors and can mistakes often without it has some integral programs which can take check the input and save it from inaccuracy. It is constantly useful to read and recognize the problems of the existing system, which will help in finding out the supplies for the new.

2. REQUIREMENTS

1) Software Requirements: Xampp

2) Operating Systems: Windows

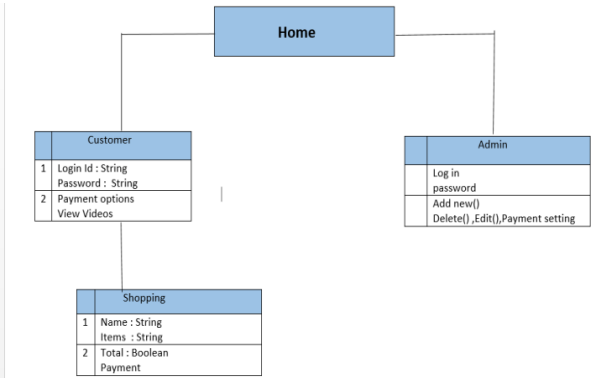
2.1: Screens

1) End-user
- View personal details
- View payment details
- View videos of the session
- Edit his details

2) Admin
- View user details or update
- Add videos and categories

1.2 PROPOSED SYSTEM

Gym software will help the user to log in and signup in a user-friendly way and provides an easy to the user interface after that user can directly store information in the database. Gym management saves time by providing some procedures.
- Add thumbnail images
- Add new payment details
- Edit his details or update



2.2: Productivity

Subsequently, the portal is attached to the Xampp MySQL server so all the data is in cloud storage, so we need to start the server when we need to run the portal on the browser.

2.3 Reliability

The website is privacy secured and do not merge with other details. No one cannot log in without their unique id and must they need to signup if their details do not validate.

2.4 Flexibility

It will run on any website but the user must and should need to accept the policy of the portal and it is very attractive to users to visit.

3. EXECUTION

3.1 Admin

Admin and user can create an account for user and Admin can have all access of classes. Admin can add, edit and delete the user details and Reports are visible directly when any customer creates his account or his payment details of shopping, and admin can add thumbnail images and add videos of gym training and here shopping is available for all customers or users after payments user can get mail or popup message to him and admin can maintain screens very well here in order attract users using images and thumbnails.

3.2 User

Users can create their account by providing email, password, date of birth, contact number, and address or when user contact admin they can also create the user account and after signup user will be directed to the payment page in this, they can see different available membership plans for Ex: Monthly, yearly.

After payment, they can access all training videos of a gym and motivational videos and if they want users can buy the equipment of the gym and mainly here users get more benefits. Whenever a member needs to buy equipment or a thing online, he will not get any trial when compared to offline but here is what will happen after his session videos are over, he will buy the same equipment online and customers are getting some type of demo of that item.

1. Body workout Session

2. Motivational Session

3. Shopping

When the user is done with his transaction, he can see all session videos. In the Body workout session user can get all the videos of gym training, in this, he gets how he can do push-ups and drills. Whenever he faces any issues, he can mail to admin or owner and he can get all motivational videos to groom himself.

4. INPUT DESIGN

User authentication is extremely common in current web applications. It is a security mechanism that will restrict unknown access to users and here builds a registration process that permits users to make a replacement account by filling out an email, password, and getting in touch with details. After creating the table, we created a PHP code to attach to the MySQL database server and in PHP Xampp server got to start MySQL and Apache.
When the user able to signup he must give his basic details and then, they can log in easily. If someone not providing his details those columns show a mistake to users or if the username entered by the user is already

taken by another user, these are the validations used here mainly because these situations occur
online whenever when a user creates his account. during this online payment gateways add for purchasing gym equipment and selecting online packages of gym training, to try to all this admin payment configuration admin integrated with PHP applications by minutes using extensions or manually and these all are found in built-in PHP libraries and use packages to develop. Thumbnails are inserted here for videos of the gym this may help users to understand a fast view and in websites using those thumbnails images to ascertain content. Users can do shopping also hereafter his log in successfully
In the categories there are three sessions in those two are for gym training. Using these two sessions users will be pumped and continually users get some videos on the portal these are all uploaded by admin within the website. When the user got to see those videos in future so he can add all those videos into the user playlist from the playlist he can see all. If there any errors occur user can contact with admin regarding his issue and in his profile section there's cancellation available to cancel membership, here validations are used for cancellation and the user got to give feedback when he cancels the membership. It eventually creates a singular id or case id for that specific event to take care of traffic in data, during
this data won't merge. within the reports section, admin gets a date, purchase details, paid amount, payment method to urge all this here PHP Report Generator is employed and it'll give rapid values in pace by using data.

5. OUTPUT AND ADVANTAGES

Output is going to be produced after successful payment is done and whenever shopping is completed. It reduces the time and price for users and these are the main uses for members and which meet the desires of the user and presents the result clearly to them. Mainly here user results are processed and communicated to him in his profile section.
It is more important and direct source information to the user and user can take the decision to himself to cancel his membership in his profile section and it is more reasonable when to compare to offline and we some advantages here to remember:

1. Easy to understand and use

2. More private when compared to offline

3. Less cost and reduced time

4. Customized plans

5. Flexibility in Schedule

6. Updates available for users

In this admin can add new categories and users have access only readable here. If future any reasonable lists or categories are available admin can add them using the create category button. Basically, in this category admin can add more videos in every session but he cannot do because if the admin can add all users cannot get which video he needs to see so by week after week these are all updated for the users. This procedure is helpful for the user to do workouts

Whenever anyone creates or update his details like
Email and purchases admin can view all this. It gives reports admin frequently. If payment is done at a particular date admin needs to see it so the admin can view it by using the search button in that section and can log in easily by using credentials but the user it will take time because his data need to retrieve from the backend database reports.

6. **CONCLUSIONS**

Nowadays every person is willing to do a gym online so this website helps them the most. In this pandemic situation some people are unable to go outside because of lockdown so using this platform user can get benefits and it was secure and safe compared to outside situations. The shopping portal is also useful for those who need to buy equipment and those items are available at cheap rates so everyone can afford them easily. No paperwork needs and no need to remember all the payments and personal details, this all can treat the system employing a database and therefore the gym management has performed all right to satisfy all the specified things we would like in the gym.
The gym outside mainly requires proper equipment, maintenance and variability in structure and no need lots of crowding these all-user need but when it comes to online user will only prefer particularly and maintain the durability and here prime concern for users is security so the online gym will not reveal his data and requirements provide very well to users. The payment can be modified according to different rules and guidelines by admin as required and admin may also inform users about the changes in rules by putting up notifications in the system. Hence the system saves time, effort, and cost. Every project needs to allow application development for further enhancement and the projector system is so flexible to allow any changes need for the future development of a program.

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