Abstract

This report will discuss the very common issue of injuries, focusing mainly on gym based injuries. Moreover, it will delve deeply into the reasons behind these injuries, discussing the causes of gym based injuries. Additionally it will explain how injuries are a great hindrance in progression at the gym and ultimately prevention to gym attendees achieving their goals.

This report will then introduce MotionFit to the reader. MotionFit is a new and innovative solution to the problem of gym based injuries that will immensely enhance progression at the gym by eliminating or at least minimising the occurrence of injuries by targeting their main causes. It will discuss and illustrate MotionFit through the use of different design artefacts. It will explain to the reader the design process and the different methods that were used to design this product.

The final design of MotionFit will be discussed at great length to provide the reader with a very informative overview of the product, what it consists of and how it works. Lastly, the product will be evaluated with potential users.

Introduction

Fitness and healthy lifestyles are becoming more and more common in todays society as people are becoming more motivated to hit the gym to get fit and reach the lean body they desperately want. However, many can’t afford to get a personal trainer so most stick to what they know. The issue thus arises of gym based injuries. The most common cause of injuries, especially regarding gym exercises is lack of proper technique. This lack of proper technique is caused by multiple things, including absence of knowledge or simply having too many things to think about whilst exercising.

Without the knowledge of the proper technique for exercises undertaken at the gym, it’s a fairly difficult task to obtain proper technique. When lifting heavy weights, if the exercise is not undertaken using the correct technique, not only will the exercise be less effective, but it also implies that stress is being applied to unwanted places and thus can cause injuries. Furthermore, even if one knows the proper technique for the exercise, sometimes there may be too many things to think about – body angle, feet alignment, hand position and grip – and this can cause improper technique and thus injuries.

Studies have shown that one of the biggest hindrances to fitness progression for gym attendees is injuries. Injuries certainly prevent the attendance to gym whilst experiencing the consequences of the injury, be it a torn muscle or a sprained joint. Moreover, attendance can sometimes cease as a result of injuries due to the fear of encountering injuries again.

The goal is to design a product that enhances progression at the gym by eliminating or at least minimising injuries. Injuries disrupt the workout flow, certainly physically but also mentally. Simply minimizing injuries at gym means that an attendee is able to exercise constantly, without disruptions and thus maximise their progression towards their goals.

Design Process

Arriving to a final design for a product involves undertaking the design process. The design process used to derive the final design of MotionFit involved the use of the following methods: Personas and Extreme Personas.

Personas

Personas is a very effective method that is widely used in the design process to instigate some initial ideas. I decided to come up with two personas to help me brainstorm some ideas for the product; the two personas are John and Ben.

John

John’s persona is explained in Figure XYZ. John could be stereotypically categorized as a jock as he has always been involved in sports and enjoys playing them regularly. However, he has never joined a gym for fear that upon getting injured, he might not be able to continue playing sports, whether it be short term or long term. A small muscle tear in his calf muscle and he would be unable to play most sports for at least a couple of weeks.

John feels like he isn’t educated enough about how to workout properly at the gym and thus would feel vulnerable to injuries if he commenced undertaking gym activities. A lot of his mates attend gym but he doesn’t feel like going with them as he would feel like he will annoy them with all the help he will need.

John needs a product that is able to educate him quickly and effectively about the techniques of different types of exercises. He requires a centralized source of data which contains a vast amount of information on how to exactly execute an exercise without applying too much stress on the body and thus avoid injuries. Apart from reading information about the techniques, seeing the particular technique visually through a video would be extremely beneficial to John.

Furthermore, John would certainly require this information wherever he goes. He would need it handy so that if he is at the gym and needs to remind himself on the technique of a particular exercise, he would be able to simply view on, be it on his phone or on a tablet. He wouldn’t want to have to remember it all and go to the gym trying to recall exactly how each part of the body should be positioned to execute the exercise in the most effective manner, not only to maximise results but also to minimise the likelihood of injuries.

Ben

Ben on the other hand is a regular gym user and his persona is described in Figure XYZ. He has been attending gym for a while now and is fairly informed on the proper techniques for most of the exercises he undertakes at the gym. However, even whilst knowing the proper technique, he has still managed to injure himself three (3) times throughout his five (5) years attending the gym. Certainly poor technique is not the only cause of injuries at the gym, he might be overworking his body or maybe he isn’t taking the time to warm up and cool down before and after his workout causing his body to be stiff when he starts his workout. Nevertheless, having the knowledge of the proper techniques for exercises is sometimes not enough to conclude that the proper technique is being executed constantly and this is many times the case.

Even with full knowledge of the correct technique, it is possible to have very improper technique. This can be caused by many things, muscle fatigue is one of these. When muscles are fatigued they cannot withhold the same amount of force and for this reason the stress is then applied on a different part of the body and thus proper technique is lost. In addition, some techniques can be fairly complex. Techniques involve body alignment, body angles, hand positions, fluid motions and much more. At times, there are just too many things to think about especially while you are struggling to lift heavy weights, the attempt to execute the correct technique is very likely to fail.

Simply providing a product that contains a centralized source of vast amount of information regarding the proper techniques for exercises won’t appeal much to Ben. As was motioned, Ben is very much aware of the proper techniques he needs to execute at the gym to avoid injuries and maximise his results. What Ben needs is someone or something to inform him if he is not executing the technique correctly, be it because his body is fatigued or because there were just too many factors to think about in the technique.

The product could include sensors which you attach to your body when exercising. These sensors would then track your movements as you exercise and communicate them through to the device. The device would then store the information passed through from the sensors. With this information, the device could be able to inform the user on their technique and how to improve on it to maximise results and more importantly, minimise the likelihood of injuries.

Adding this very enhance feature into the product would certainly benefit Ben. He could use it to pin points the places where maybe he is constantly lacking technique and help him to focus on those whilst exercising. The device would show him exactly what the issue is with his technique and assist him on how to solve the issue.

Extreme Personas

When brainstorming extreme personas, I found that the most interesting one to use for the design process was the geek/gamer persona. The geek/gamer is certainly a very interesting extreme persona for this type of product as they would be one of the least likely users of such a product. Stereotypically a geek is usually a gamer and a gamer is usually a geek, so I decided to combine the two into one, combine their characteristics, goals and needs and see what possible solutions would arise from this exercise.

Geeks are usually very intelligent and keep to themselves. Furthermore, geeks usually have a particular field of study which they are very interested about and undertake a lot of personal study and research in that area. Geeks are not very sporty as they do not have time for sports and don’t find them amusing. Their free time is otherwise spent on video games, thus arising the correlation between geeks and gamers. Gamers therefore, enjoy playing video games on a regular basis. Most of the time, especially nowadays, the games are conducted online where games from all over the world can compete against each other. Competition and the want to have the most awards and the best score become very important to them.

Using these characteristics and needs of this extreme persona some very interesting ideas arose. Applying the gamification concept to working out at the gym gave me a lot to think about. It was important to ensure the gamification still benefitted the user by providing information about the proper techniques for exercise to minimize injuries.

After some brainstorming for gamification ideas to apply to the product, I concluded that adding some type of scoring system to the technique checker would certainly add some attraction to geeks and games. These scores could then be uploaded and a ladder could be compiled, showing the top scoring users. This would certainly add further motivation to system and also attract geeks and gamers to possibly start using the system and commence working out themselves as now there is a gaming and competition aspect to the system.

Final Design Solution

Evaluation

Conclusion