Progress Monitoring Web Application

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Contents

1   Introduction

This dissertation will cover the whole process behind the building of the progress monitoring web application. The application will allow a user to track their current and goal weight, goals, and fitness log. The application will focus on these three main points only to not distract the user away from their progress with other features, such as social media sharing. While some may argue that people want to share their progress with their friends on social media, this application focuses on the user and the user alone. More information on these choices can be found in the design section of the paper. The literature review chapter will focus on current fitness progress monitor applications that are already available for use. It will discuss both the good and bad points about each application and what this application will do differently. The design chapter will also cover the reasoning behind most of the design choices that were made during the planning of this application. For example, which font was chosen and why. The design chapter will also cover some development choices, such as the data structure design. After that, the development chapter will talk through the development process. It will go into detail about which tools were used and why, the problems and challenges that were faced during development and how they were over come, and also deployment of the web application to the internet. Following the development chapter will be the testing chapter. This will go over the testing methodologies behind the building of the application and why they were used. It will also cover how bugs and errors picked up by the testing were overcome. The evaluation chapter will cover what the outcome of the product was like compared with the original idea. It will also cover feedback from users about their and how that feedback will be acted upon. The conclusion will wrap up the paper with what knowledge has been gained from this build, what would have been done differently, and also possible future outcomes from the product.

2   Literature Review

2.1   Introduction

It is known that being overweight can be a risk to your health (?). This, along with other factors, is driving a percentage of the overweight population to try and lose weight. Most people give up on weight loss due to lack of motivation and that is what my application is going to try and fix. By allowing users to track progress through an easy to use web application, that accessible anywhere via the internet, it will help keep the user motivated to keep losing the weight, and also keep the weight off once they have reached their goal weight.

There are already a number of weight tracking, fitness, and calorie counting applications out there on the market. Some of them offer all three of these services and a lot of other features, while other are more stripped down and only offer one or two. My application will focus on two or three areas too keep the user on track and not confuse them with things they do not need to worry about. The areas that my application will be focusing on are weight,

goals and a fitness log.

2.2 Related work

This section will analyse a number of related websites offering a similar service to my one. It will give a brief explanation about the service and a break down of the good points and the bad.

2.2.1 Fitocracy

The first application is Fitocracy (?), a web and mobile application to monitor fitness. It is heavily featured, which is a plus for some people, but others can find it distracting. One of its main features is its social network site. It has a social network backend that will let you follow your friends and give them kudos for completing certain exercises. This feature is excellent as it gives what is called a feedback loop. This is commonly used in mobile application today by having the ability to login with a social network and share progress to that social network. A social network backend is a great motivational tool but due the aim of keeping my application as simple as possible, I will not be implementing this. Fitocracy is very motivational based with things like challenges, quests, duels, and leaderboards all creating feedback loops you are getting constant rewards and recognition of your achievements. Again, my application will be staying very minimal so I wonâĂŹt be implementing such massive features. Instead, my application shall just have goals, which will create a small feedback loop, giving the user motivation and recognition of their goals. The main downside to Fitocracy would be the overwhelming number of features. It has so many features and options all packed into the one screen it is very over whelming and not a nice experience to use. This is the basis of my application. To be stripped down bare of the nonsense that surrounds such applications like Fitocracy and focus on a few key points.

2.2.2 Fitbit

Fitbit is one of the biggest fitness apps out to date. What makes it so special is that you can purchase a wristband that monitors your activity and sleep, and then wireless syncs with your statistics with your Fitbit account. This is one of many items, known as wearable technology, that can track your activity. Others include the JawboneUp (?) and the Nike+ Fuel Band (?). This allows for less manual data entry. It counts how many steps youâĂŹve taken, how many calories burnt, and how many hours sleep. Its downside is that you can only specify certain exercises. For example, working out in the gym, you canâĂŹt tell it how much you are lifting, so it canâĂŹt give you an accurate reading on how many calories you have burnt.

Fitbit focuses on balancing your caloric intake and expenditure to help you hit your goal weight. After inputing your details and your goal weight, it will give you a calorie intake goal. It then balances your caloric intake, by tracking your diet, and your caloric expenditure, by

tracking your activity. It will then match the two and show you your calories in versus out. Focusing on calories in versus calories out is another big way to lose weight. By decreasing your caloric intake and increase your caloric expenditure, you will lose weight.

Fitbit is very a well designed web application. ItâĂŹs taking the popular minimalist and flat design approach. It has a really clean dashboard that consists of six cards with information right there on them. If you click on one of the cards, you will see a modal pop up with more information on that card. In the bottom right hand corner of the pop up is an arrow, clicking the arrow will take you to even more information about that specific element of the application and this page will also allow you to enter data. This is a really efficient way of laying out an application as it give the user all the information on the first page, and more information and the ability to change that information is only two clicks away.

2.2.3 Nike+ FuelBand

The Nike+ FuelBand app is a little bit different from all of the others. It uses its own measurement (Nike+ fuel) to monitor your activity. You set yourself a goal and then as you move throughout the day, your fuel will go up. It connects to your mobile device via bluetooth so you can see your stats on the mobile application, and that syncs the data with their servers so you can see even more data on the web application. Their main goal was similar to mine, to keep the user motivated to get out and get exercising. They use the NikeFuel as a measurement as itâĂŹs a universal way to measure all kinds of activity (?). You can also add your friends and see how theyâĂŹre doing with their goals. This adds yet more motivation by being able to compete with your friends. The ability to connect with your friends is a great motivational tool but it takes away from the simplicity that my application is aiming for.

2.3 Conclusion

To conclude, my website will follow a similar simple, easy to use, design to Fitbit, but with a more focused aim on motivating the user to get back into the gym. Out of the two main types of wait loss, it will focusing on the fitness side. The decision was made to not implement both sides because to split the focus over two things would break the motivation from one focus to another. Also, the implementation of having calorie tracking would either be a big thing with a database of good types and their caloric value or having to have the user enter both the food type and then the caloric value of that good type. This can lead to an incorrect caloric reading.

After seeing some of the over complicated fitness applications with very poor user experience, the applications design was to be kept as simple as possible. Cutting down on user options and features while maintaining core, desirable, features is how it this will be achieved. Being a content driven application, the information needed to be readily available on the first page that the user sees, so that if they just wanted a quick view on how they're

doing it would all be there as soon as they open the page.

3   Design

Franco (2002) states that the concept of minimalist architecture is to strip everything down to its essential quality and achieve simplicity. The design of the application was to follow this simple rule. The bare essentials were the only things that needed to be displayed the user. The set up of the website is to have three blocks displayed in the centre of the screen, laid out on a 6 column grid. Grid design is important in web design as it add continuity to each page. Each page will have the relevant information in a similar position to the last, allowing the user to be able to extract the information more quickly. A grid layout also makes it easier to design for other devices. Walkers & Digital (2013) found that their mobile traffic was up to 29% in Q2 2013. From this, we can see that more and more people are browsing the internet from the mobile devices. 43% of this traffic was from iPhones, so as web designers we need to make sure that our web applications look as good on a 320px width devices as it does on a laptop monitor. This leads to the design of the application being based on a 6 column grid. This was for two main reasons: the first reason to keep consistency through the sizing of different areas of the website and the second being it makes it much easier to scale the design down for mobile traffic. Due to the fact that mobile traffic is increasing, and also that my application will mainly be used on mobiles, responsiveness was very important when design my application. It need to have the same feel on a 1920px screen as it would on a 320px mobile device screen.

Simple designs were sketched up in a notebook to get a feel for how each of the pages would look on both a normal monitor and a mobile devices. After sketches were complete, they were then drawn up in Sketch (Coding 2013) where colour, text, and images can be added to get an even better feel for how the application is going to look and work. Once colour could be applied to the design, user ability could be thought about. Colour blindness affects 1 in 12 men and 1 in 200 women (ColourBlindAwareness n.d.). If the design was not to cater for their needs then that would be a percentage of the population that cannot use my application. Colour should never be the primary cue for information. During the design process, changes were made so that any occurrence where colour was the primary cue would also have a visual cue, for example: when the user checks off a goal, the text will have a strike through it as well as turning red. Also, a large percentage of the population have a visual impairment. A few steps were taken to keep the site safe for the visually impaired. The font size and weight is kept at a easy to read level so that it is not taking up to much space but still easily readable. Also, the colour of the font has to contrast with that of its background. From a previous design, the background of the cards and headers was too dark and the font colour was too light which would be quite difficult to read for a visually impaired person. Since then, the background colour has had its alpha reduced and the colour of the text has

been made a darker shade of grey. As for the typeface, I went with Helvetica as san-serif fonts are easier to read for the visually impaired. Where there is any large amount of text that the user will need to read, a line height of 1.5 will be used to make it easier to read for visually impaired people. Also, using ARIA HTML5 landmarks, such as header, footer and nav tags, will increase the usability of my website on screen readers.

Most of the design for the application was drawn up, but some of the easier designs were made directly in the browser. This was to speed up the process by cutting out unnecessary tasks. As opposed to the original plan, development begin during the design stage. This was because there was enough of a design to begin developing some of the application. Once development was underway some things had not been designed yet, for examples; the forms for signing in and out. There was a clear vision of what the forms should look like, so instead of wasting time making the wireframe and mock up of them, they were just designed on the fly, in the browser. This allows for rapid prototyping of the applications looks and lessens the work load on the design front, and even if the design does not work there is no reason why another design cannot be drawn up and implemented.

As well as design the application, the design of the backend will need to be done before development takes place. For the backend, Ruby on Rails (Hansson n.d.) will be used. Reasons for this will be discussed in the development chapter. A number of attributes will be store about the user and will be split up over a number of tables all with a one to many relationship with the user tables. The other tables will be current weight, which will store the current weight of the user, goal weight, which will store the goal weight of the user, fitness log, which will store information about what exercises they did and how they did, and the goals table, which will store the user?s goals. All of these will link back to the user?s ID. Originally, there was going to be a user?s weight table, which store both the current and goal weight but it was moved to two different tables because it?s unlikely that the user will be updating the goal weight as much as they were going to update their current weight. All of these tables will have depend upon their user, so if the user is removed from the database so will all their data.

4 Development

This chapter will discuss the development stage of the production of the progress monitoring web application. It will cover a number of topics, from development tools used during this stage to development methods uses whilst building this application. It will also walk through, step by step, of the building process highlighting problems and how they were overcome.

A number of tools were used during development, some were used more and others

but all of them played a key role in development. The main tool that was used is Sublime Text 2 (Skinner n.d.). This was the text editor that was used to build both the static mock up of the site and the full functioning web application. Sublime Text was chosen because of it's vast amount of plugins. This makes it very versatile and efficient when it comes to building productions applications. There were a number of other editors considered for the job, for example; Vim (Moolenaar n.d.) was going to be chosen on due to its rapid development capabilities from all of the navigation being done on the keyboard. But it was not chased due to the steep learning curve as this would eat into development time. The time investment into learning Vim would probably not be beneficial to such a small project but will be a consideration for future projects. The second main tool that was used was iTerm 2 (Nachman n.d.) using the oh-my-zsh (Russell n.d.). Using the command when building a Ruby on Rails application is absolutely necessary. It's used to generate controllers and models, start the Rails server, interact with the database, and a number of other key features. The terminal emulator is not really that important but the use of the Zsh shell was very useful to the development stage. It has a number of excellent features like displaying the current Git (Torvalds n.d.) branch that I was working in and if there was any changes that haven't been committed and also highlighting in the terminal. Seeing as a lot of the time was spent in the terminal, it was important to make that time as productive and as efficient as possible.

5 Testing

6 Evaluation

7 Conclusion

8 Bibliography

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