FitterBit

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# ABSTRACT

FitterBit is a simple web application targeted at runners of all levels. Its goal is to let runners track their own statistics to improve their results and to look at friend's runs. As long as the users use tracking technology that outputs .gpx files for their runs, they can use FitterBit to its full potential. When a user accesses FitterBit, they will be shown the various stats of their last run as well as look at the route they've taken. They can also look at their own previous runs and view the data relating to these. Users can look at the runs their friends have shared, to both follow how they are doing and look into new routes they may want to run. The application has not been fully implemented, with some features incomplete, but still displaying in the way we had imagined. The application was still well received and rated well, especially on its design/ease of use and practicality.

# INTRODUCTION

As part of our coursework for the Interactive Systems Honours course, we were required to design a web application that worked with gpx files to provide information to the user. We started by brainstorming to find an idea for a useful, but also somewhat simple application, as the time allocated to create the application would not allow for very complex ideas to be implemented. A few ideas were explored: one was to draw the route from multiple gpx files on a map, and change the color scheming of the route according to the speed of the runner. With enough gpx files, you could then see which streets you have stopped or slowed down on and which were faster, allowing you to create more efficient routes for yourself. Another idea was for a personal trainer type of application. Here, the user would upload a number of gpx files and the application would analyse them and then give the user advice according to his/her own goals (e.g. if the user decided that he wanted to be an “all around good runner”, the app would suggest him/her to run more sprints if he mostly ran long distances). This, however, seemed outwith the scope of the project and also required more gpx files than we had access to. In the end, we ended up opting for a less original, but more feasible idea – a simple social stat tracker application, where you upload your gpx files and display them on a map and could also share your data with friends and see your friends' data. This application would fulfill the role of both the aforementioned applications, as the user could look at their friend's routes and see how they went and also analyse their own data. It also did not require many gpx files to be useful. User personas were then created to better understand the requirements of users. After that, it was decided that Callum and Peter would focus on the project's functionality, while Lukas would work on the visual aspect, with a high degree of flexibility. The app was developed to most of its requirements and was rated well by users on Friday the 24th of November, despite missing a key feature at the time.

# Project Concept

Our web application's main aim is to allow runners, who use wearable technology to track their stats, to upload their gpx files and view these in a user friendly way. Users will be able to view their most recent run on Google maps, as well as see statistics such as speed, distance, time taken, heart rate and elevation about this run. Users can also view past runs under 'Your Activities' as well as their friends runs under 'Friends Activities'. Users are also able to view their statistics over all the runs they have uploaded to see whether they are improving upon previous runs. While not currently implemented, in future iterations we would look to fully implement user profiles to accurately keep track of all uploaded files from a particular user. This would also allow us to implement privacy settings to choose whether you want to share runs as well as be able to add friends to view their runs.

## Implementation

The technologies we used included Javascript & jQuery for parsing the gpx files, plotting the points on the map, displaying the data and creating graphs for the 'Your Stats' page. We used html and css to create the layout and design of the website, and implemented bootstrap to ensure the website is responsive. We made use of the Google Maps API as well to allow us to plot and display the points. We did not use any databases or web frameworks as we felt this was out with the scope of the project; all code consists of linked html pages and javascript. This means that some of the statistics have been hard coded, but this allows us to demonstrate what we had planned to do.

We first started by parsing the file and simply printing the data on the screen to ensure we were parsing it successfully. Once we had managed to obtain all the data we felt was required we then went on to thinking about how to use this data to produce meaningful statistics such as average/top speed, time taken to run and average heart rate/cadence. We then moved onto creating a basic website to visualise the data and view the points on the map. We thought about a number of ways to show the points on the map, first starting with creating a marker for every recorded point from the gpx file then deciding to create a polyline which outlines the entire route and is much more visually appealing. We added in key markers at the start and end of the run to show exactly how the route was run.

## Peer Assessment

The peer assessment was positive regarding the idea of the application and rather good regarding user personas. However, it was negative regarding the format of our submission. A common theme of the feedback commented on the lack of content we provided with the user personas and storyboards. We were surprised by this feedback as the lab sheet stated this was to be a max of 300 words overall which is the exact amount we included. Some of the personas and user stories we reviewed were significantly longer than this. We would have provided much more detail if we had not felt constrained by this 300 word limit. One particular piece of feedback noted that graphs would be nice to show user statistics and we ended up implementing that as we thought it would be a good addition to the application. Two things we decided to not do were user settings and user login, as these would require a back-end, which was not required nor reasonably possible to implement in such a short time. However, if given more time, these would be included in a later iteration.

# Evaluation

We decided a Google form was the best option for our evaluation as this is a good way to obtain both qualitative and quantitative results. We used a combination of both computing science students as well as other relations from outwith the university. We started by getting participants to read the ethical guidelines before looking over the application so they knew what was involved. We then gave them a brief overview of what our application's purpose was and how we felt this would be useful to runners. After this we left the participants to freely move around the site in order for them to try and see how simple they found it to use. Finally we asked them to complete the Google form before giving them a debrief.

## Results

At the time of evaluation, the feature allowing a user to upload a gpx file had yet to be fully implemented, and did not function correctly. This is reflected in the results, but has since been amended. We had a total of 8 responses.

**Quantitative questions:**

*How often do you run?*

*- Never* **(87.5%)**

*- 1-2 times per week* **(12.5%)**

*- 3-4 times per week* **(0.0%)**

*- 5+ times per week* **(0.0%)**

*How did you find our web application to navigate?*

*- Very difficult* **(12.5%)**

*- Somewhat difficult* **(0.0%)**

*- Somewhat simple* **(50.0%)**

*- Very simple* **(37.5%)**

*Does the layout of the stats make them clear and easy to read?*

*- No, not at all* **(0.0%)**

*- No, not really* **(25.0%)**

*- Yes, partly* **(62.5%)**

*- Yes, definitely* **(12.5%)**

*Do you think being able to see your friends activities is a useful feature?*

*- Yes* **(75.0%)**

*- No* **(0.0%)**

*- Maybe* **(25.0%)**

*Do you think the markings on the map (start/end markers and full running path) are useful?*

*- Yes* **(87.5%)**

*- No* **(12.5%)**

*Do you think you would use this web app? (If you don't run, imagine what you would reply if you did.)*

*- Yes* **(25.0%)**

*- No* **(0.0%)**

*- Maybe* **(75.0%)**

**Qualitative questions:**

*Q1. What did you like about the application?*

*- “It's a good way of keeping track of your stats. Types of statistics are very clear. Overall stats of all GPX files uploaded is a good feature.”*

*- “The colour scheme is lovely.”*

*- “Simple and easy to use layout, not overloaded”*

*- “Being able to see how long other runs take sounds like a good idea”*

*Q2. What did you not like about the application?*

*- “Upload button doesn't work”*

*- “The stats look like buttons, no good. Also choose a different shade of pink, looks like it is the 'Paint' default pink.”*

*- “Your stats page is a bit empty, not very useful just now”*

# DIscussion

Overall, we feel the feedback is positive. The general layout of the website an the ability to navigate through it was well received. One reviewer stated that “*the stats look like buttons*”. This comment was taken into consideration, and the layout of both the 'Most Recent' and 'Your Stats' pages was changed. Previously, each statistic was contained within its own box. Several of these boxes together looked like individual buttons that some users assumed they could click on for information in greater detail. This was not our intention, so now all statistic share one large box. The choice of colours was heavily criticised. A pale pink was our first background colour with red text, but a majority of reviewers did not find this attractive. We opted to change to a more appealing and neutral colour scheme consisting of shades of blue.

After looking over our reviews, we understand that the questions we provided did not necessarily give participants total freedom to express their feelings about the project. This is something we would change if this step were to be performed again. However, the feedback we received was enough for us to continue making positive changes to look and functionality. There are obviously still a great number of features we could add to our website.

# Conclusion

FitterBit was developed as a stat tracker for gpx files generated by runners. It succeeds in meeting a good portion of its initial, ambitious requirements, which we judge to be a satisfying result considering the limited amount of time available for development. The feedback was relatively positive and the negative feedback helped us improve the application further. The project was a positive experience and we look forward to working on similar projects in the future.

# REFERENCES

No references were used during this report or project.

