

GUI – Group 41

Assignment 1

Part 1:

Our weather app is going to be primarily based around runners. Our primary stakeholder is therefore going to be amateur runners in the UK who run for exercise and to keep themselves fit. These runners would exercise like this regularly therefore it is vital that they know what the weather is going to be at the time they are going to be running that day. These times may change day to day so our plan is to implement a function where the user can enter the times they wish to run, then get a weather prediction for those specific times.

Runners are a specific group of people because they perform tasks that most of the general public do not do and they wear clothes and accessories that are specific to themselves and no other group. Additionally, they typically would not have anything to protect them from the elements therefore it is vital and warranted that a weather app be created for them; to ensure they can prepare for the weather ahead as they run.

Runners are also knowable as it is usually quite easy to identify them on a day to day basis when people are on the go. Most people would see runners outside everyday when they are going about their daily business. Amateur runners are also normal people therefore they are quite a big target audience (as opposed to professional runners) and are easy to locate. This means that when we perform our data collection techniques, we will be able to find a good sample size from this group and extract the relevant information necessary from them to create our app. Furthermore, there has already been many reports and papers about amateur runners so there is a good amount of information already known about them.

In the UK, it is known that there are now more than 10.5 million runners that run an average of at least 1-2 times per week. Over half of these people do at least a third of their running outdoors. Additionally, these numbers are on the rise. Furthermore, the UK has very changeable weather so it is very important that the runners can pre-empt the weather to plan ahead. This is a significant amount of the population that run on a regular basis outdoors. As a result, this justifies the need for a weather application as runners need to know the weather they are going to be running in, so they can plan their route, clothing and prepare for the run in general. This may make the runners feel more confident when they go running as they know what the weather will be and it is not unexpected.

As mentioned before, the clothing of the runners is different from the general public as they need light and flexible clothing to run efficiently and not get too hot. This means the weather will affect them even more as their clothing is not as protective. Additionally, they will not be looking at their phone regularly whilst running so it is vital they know as much information about the weather predictions as they can prior to their run. This ensures they can pre-empt the weather to prepare with extra clothing or cancel their run. In the event that the weather changes whilst they are running, the runner will need to be notified. The best way to do this is to create a push notification that tells the user that the weather is changing. This will be in the form of a vibration as the phone will be in the runner's pocket.

This will prompt them to take their phone out and check the change and then change their route or plan accordingly.

Runners are a very big target audience and based on the data we have found, it is clear that they need a weather app to support their running activities to facilitate forward planning. As the running population is ever increasing; the fact that – through this app – runners will be able to know the weather before they run, this will entice more people to take up running. Runners are an interesting group of people to target this app at as they are constantly working to make themselves fitter and improve their health. This is very admirable and inspirational if we take into consideration the juxtaposition of this activity with the obesity that plagues our society. This app will help improve the lives of millions of people.

Part 2:

Primary Stakeholder: Amateur Runners

Amateur runners will be the primary stakeholder for our system as they will be the group that use the system. These are people who run on a regular basis to keep fit and healthy. Runners are dependent on the weather and this may dictate their plans for running. Therefore, their decision for the duration of their run (or to not run at all) depends on the weather. As a result, they will need a weather app to get constant weather updates and to ensure they feel comfortable and confident for their run.

Secondary Stakeholder: Family and Friends, Personal Trainers

Family and friends may have to change plans as the runner may change their running times due to the weather. Due to this app, the user may decide to run more often, thereby increasing their fitness level. This will have a positive effect on relationships between the user and friends and family and may encourage them to use the app themselves. If the weather is good, the user may decide to run rather than spend time on a personal trainer therefore the trainer will lose members and revenue.

Tertiary Stakeholder: Competing Apps, Health Services, Equipment Suppliers, Advertisers

Competing apps would be secondary stakeholders because runners who traditionally use other apps may change to our app because it is more specific to their needs. This will affect the relevancy of this app and therefore may reduce its number of users and popularity. As a result of the success of this app, people may be encouraged to run more due to knowing the weather. This will result in people being more fit and having less health problems. Due to this, there will be less strain on health services. Users may run more as they can preempt the weather, therefore their sportswear may wear out quicker so they would need to purchase more clothing. Additionally, as there would be more runners, there would be more demand for sporting equipment so this would benefit these suppliers. If the app proves to be successful, advertisers may want to invest in it.

Facilitating Stakeholders: Us – Designers and Developers of System

We are the designers and developers of the system. A few of us are runners and we know the struggle of unpredictable weather which sometimes puts us off running. As a result, we

have motivation to produce this system and understand the problems of runners. With regards to the system, we have considerable programming experience so we would know how the back end of the app would work. We would also test the app (as runners) to ensure it works as desired. We could also change some aspects of the system as a consequence of system. The design and success of this application also affects us as the grade we receive for this coursework will dictate the grade we get for this year overall. As a result, it is vital that we achieve as high a grade as possible.

Part 3:

- a) The data gathering techniques we will be using are questionnaires and interviews. We have chosen to use questionnaires as they are an easy way to gather information from a large number of people. It is also time efficient as we distributed it electronically therefore it was convenient to access and complete. Additionally, it is easy to obtain large amounts of quantitative data to analyse. We have chosen to use interviews as we can probe the interviewee more and ask open ended questions. The interviewer is also able to adapt the interview to obtain rich data on a specific topic.
- b) Our raw data and results can be viewed on the last few pages of this document. With regards to the questionnaire, we gathered data from over 20 people to draw conclusions as to how we can build our app to solve these problems.

Over 80% of people said that the weather affected their decision to run or not. This shows that for most people, the weather plays a vital role in deciding whether or not they should run. As a result, the app we are proposing will be relevant and useful. Almost 80% of people said they wear sports outfits which are more vulnerable to bad weather. This means they are more dependent on weather and it affects them more than other parts of the population. Almost 50% of people said running is their main sport activity meaning that it is important they know the weather beforehand, otherwise they may not exercise at all that day; and part of the purpose of our weather app is to make people run more often.

Almost 40% of people said they do not use a weather app before they run so our app will be get these people using an app so they can preempt the weather easily. Additionally, over 90% of the people that do use a weather app use it on a mobile device prior to going out for a run, which confirms our idea to make it for mobile devices as it is more portable and more people use it. This means that the need for and the usefulness of a weather application on a mobile platform is very high, and features could be added to make application more helpful. The question was specific to whether or not people checked the weather before their run however, so from the questionnaire we could not make a concrete conclusion about whether there was a need for a weather application that notifies people of weather changes while they are running. Hence, we needed a method that allowed us to adapt our questions based on the respondents' answers. For this reason, we decided to

interview a number of people in order to gather more targeted data.

The results of the interview showed that although some people do not mind the weather conditions whilst they are out for a run, these same people agreed that using a weather application would be more convenient. A respondent also mentioned that it would be helpful to have an application that allows the checking of the weather during a run in an easy manner. This was followed by the fact that no current application offers this feature, making it more difficult to have knowledge of weather changes. This was followed by a question regarding a notification system, and whether it would be helpful for the app to notify users of potential weather changes during their run. The suggestion of this feature was positively received, with the interviewee stating that this would be helpful and it would also need to show when the weather change would be occurring during their run.

From the results, we can also conclude that people use a phone to check the weather - one interviewee mentioned that this was due to the fact that it is very easily connected to the internet and can also be conveniently used outside. It also helps that most people have their phones with them on a day to day basis.

Gaps in Research

Upon analysing the results of our data (both questionnaire and interviews), we realised that there was an important question that went unanswered. One of the aims of our project was that we wanted it to help people live a healthier lifestyle by making it more convenient for them to check the weather, both before and during their run. We also wanted to make sure that if the application helps users, they would let others around them know that this application is useful to entice them to take up running.

Since we wanted to have clear data on these issues, we decided to conjure another (short) questionnaire that asked two questions based on what we wished to find out. These questionnaires were distributed to same people the original one was handed out to. This was to keep results consistent as the same people would be answering them and hence there would be no respondent bias. This also helped to keep the sample size the exact same.

The data we have gathered shows that just above 80% of the respondents would have liked the availability of an application that allows them to see how the weather would be like for the duration of their run. This confirms and aligns with our original plan as we wish to design our application in such a way that users will be able to enter when they are going out for a run, and the application would display the weather for that time period.

Our data also shows that almost 70% of the respondents would recommend such an

application to a friend or people they know. This was a positive result to see, as we wish to improve the lifestyles of people by encouraging them to run more, as this weather application can aid running by allowing users to easily plan when they wish to run, based on the weather conditions.

Part 4:

Requirement 1:

As this application is intended for users on a mobile platform, users should be able to access the application on mobile devices exclusively. This is due to ease of use whilst running as mobile devices are portable and the majority of people have them on their person when they are out.

Requirement 2:

Before they go on a run, users should be able to input the duration of their run in the application. This will have its own dedicated section (tab) within the application. This is to ensure that the application knows between exactly which times the user will be running. This links to the next requirement.

Requirement 3:

Once the user has given the duration of the run - as per requirement 2 - the application will then give a prediction of the weather based on the times they gave for their current location. This prediction will be given in the form of the weather each hour (all displayed at once). This is to ensure the user can preempt the weather and is given enough time to forward plan and prepare for their run.

Requirement 4:

The application should update the weather data as the user is running, using the built in GPS on the mobile device. This is to ensure the application knows where the user is so it can give accurate and reliable weather information whilst the user is running, not just before the user begins their run.

Requirement 5:

Whilst the user is running, the weather data will update using the GPS function - as per requirement 4. If there is a major change in the weather (e.g. it was sunny but now it is predicted to rain), the user should be alerted via a notification on their mobile device.

Requirement 6:

The notification (as in requirement 5) should come in the form of a vibration which will alert the user to let them know there has been a significant change in weather and to prompt them to stop running and view the change. A vibration must be used as the user will be

running so will not know if a change has occurred by just looking at their device, as the device will be tucked away in their pocket.

Requirement 7:

As per requirement 5, after receiving the notification, the user should then be prompted to stop their run briefly to check the weather and the significant change that has occurred. This will be in the form of a push notification as all the relevant information should be displayed in a brief manner as the user will be viewing it whilst running so they need to see it quickly.

Requirement 8:

User should also be able to enter the conditions they would like to run in - such as temperature - into the application. This feature will be on a separate tab that the user can access to specifically enter the requirements and conditions they would like to run in.

Requirement 9:

As per requirement 8, once the user has entered the conditions they would like to run in (such as temperature), the application will then process these conditions and subsequently output the best time to run for that particular day; meeting the requirements entered by the user. This will effectively give the sunniest hours in the day, when it is suitable to run.

Requirement 10:

As the application is not exclusively for runners, people may also want to check the weather if they are not running. The user will therefore be able to open the application and, on the home screen, the current weather will be displayed based on their location. The application will also display the prediction of the weather for that day in hourly installments.

Requirement 11:

Users should be able to press a refresh button provided by the interface in order to update the weather information given. The application would subsequently provide the weather conditions for their current location. This will allow users to make a judgement of whether they should continue their run, change their route, or return home as soon as possible, basing their decision on the situation and the weather prediction.

Requirement 12:

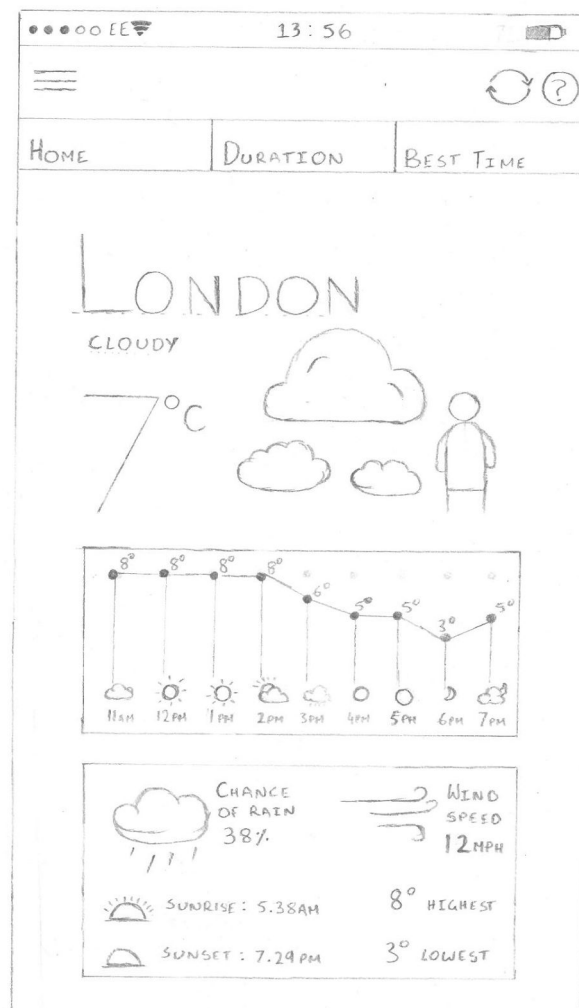
As this is a mobile application that displays weather data, the phone always needs to have a constant connection to the Internet, in order to retrieve information about the weather. If this connection is interrupted, users will no longer be able to manually update their location or receive notifications about upcoming weather changes.

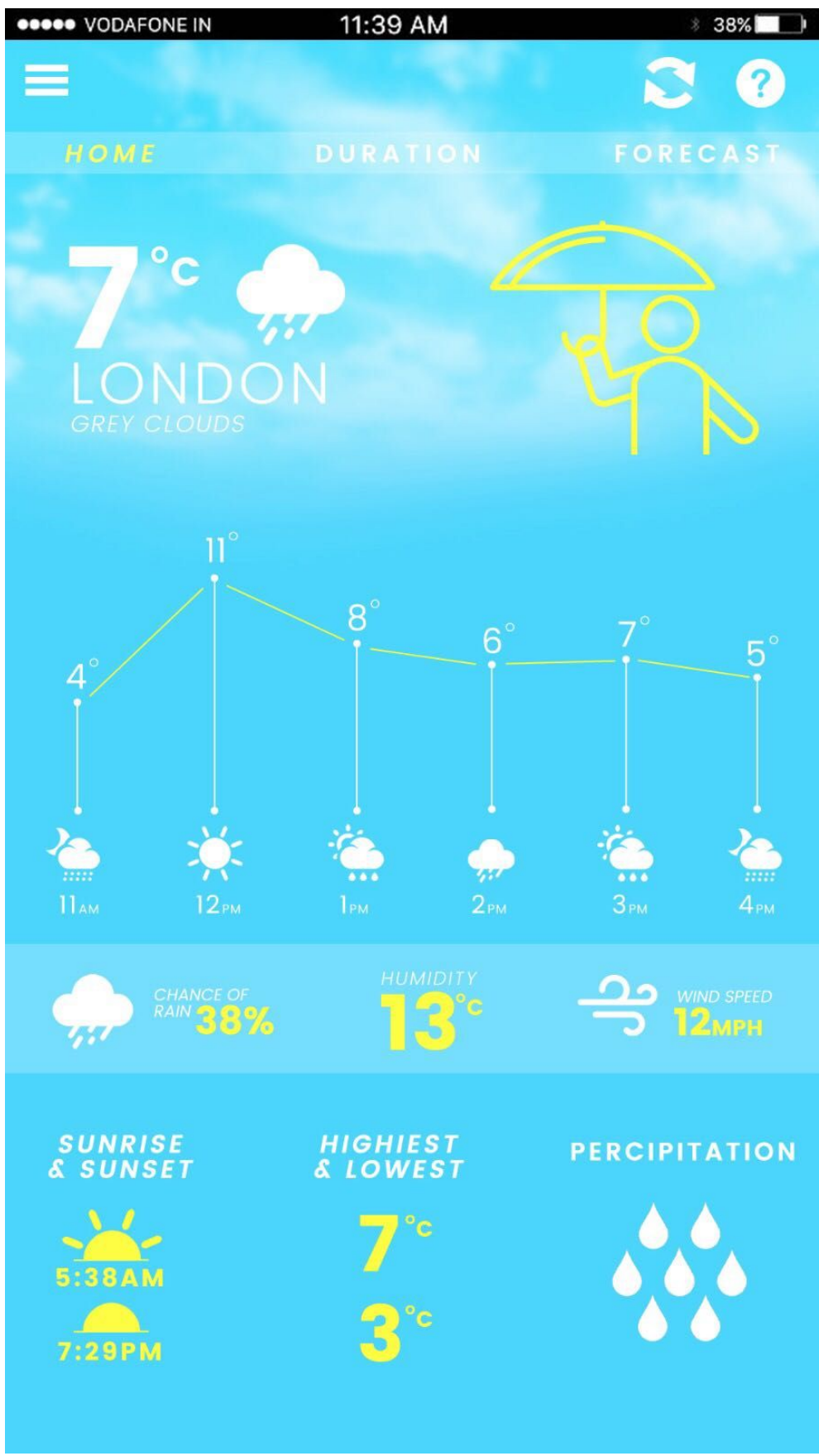
Requirement 13:

The interface will provide a help button, in the form of a question mark positioned in the center of a circle. Once clicked, users will be able to learn how to use the application and understand how it works. This button will always be available in the case users forget how to use a function of the application.

Part 5:

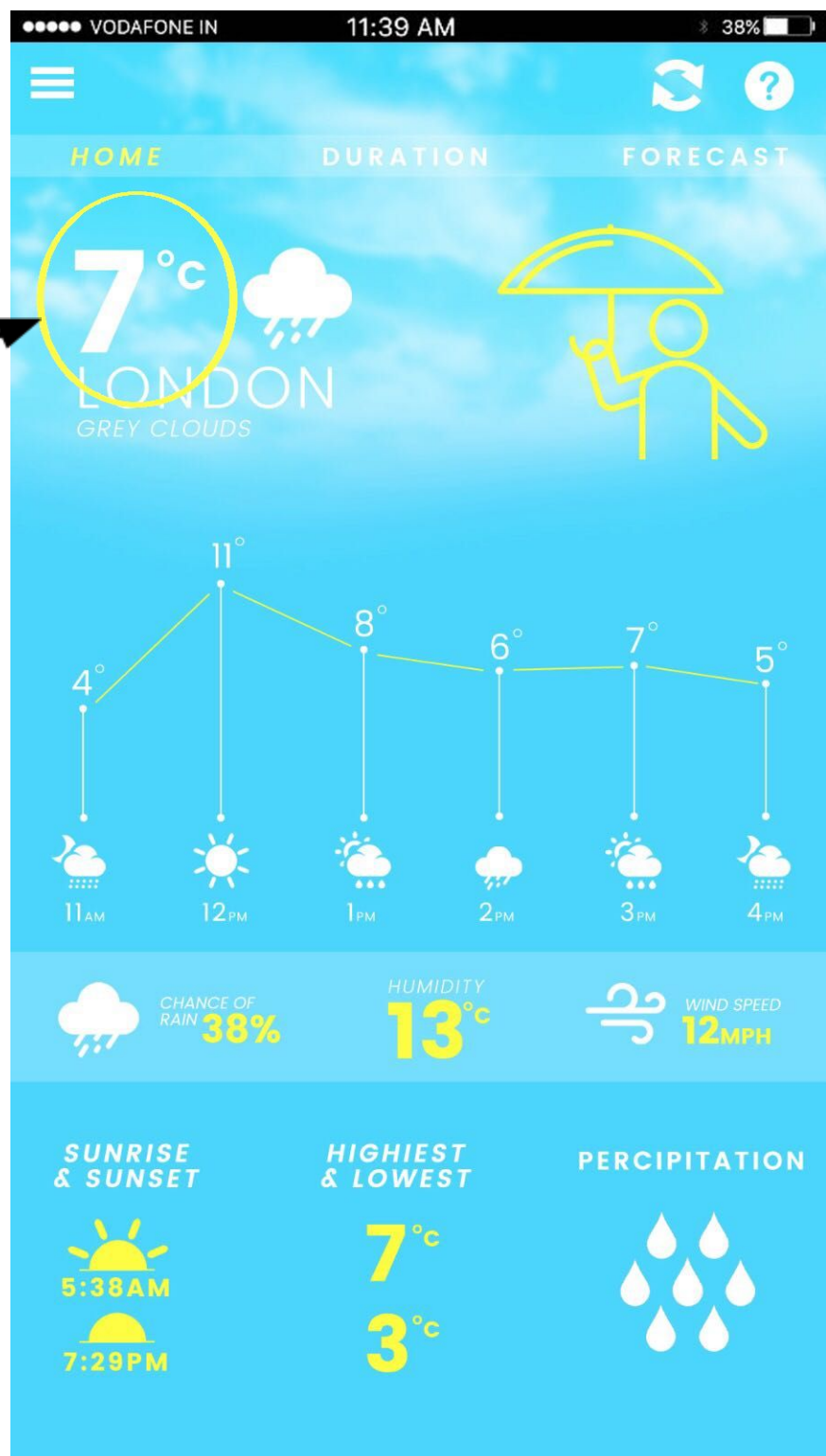
- a) Our primary stakeholders are amateur runners, who are most likely going to own and be carrying mobile phones while running. We know this as our survey showed that a large percentage of people check the weather using their phone. This is logical as mobile phones tend to be smaller, lighter and hence, more portable than the average tablet and runners like to carry as little weight as possible. As phones are smaller than tablets, it will also make it easier for runners to carry them as there is not much space for items when wearing sport attire. Additionally, most people carry their phones with them on a day-to-day basis, not their tablets, so it makes sense to create the application on a mobile device. Furthermore, not all tablets are designed to have roaming data functionalities, so our app would not be able to update weather while on the go using all tablets. All these factors have led us to choose the mobile phone platform instead of tablets for our app.
- b) We created a lo-fi design prototype first to flesh out our ideas and see exactly how the application would look on paper. Once we did this, we decided to create a significantly improved lo-fi design prototype after this to show our ideas in more detail and give a more realistic idea of how the front home page of our app will look like. This will also give an idea of how it will actually look like in real life once the implementation has been done.





- c) The first step is the user will unlock their phone and locate the app in their app draw. The user will then click on the app to open it and today's current temperature appears in the upper left corner of the screen alongside a brief description of the weather such as "grey clouds" shown in the concept image. There will also be an hourly forecast towards the middle of the screen that depicts the predicted weather for the rest of the day.

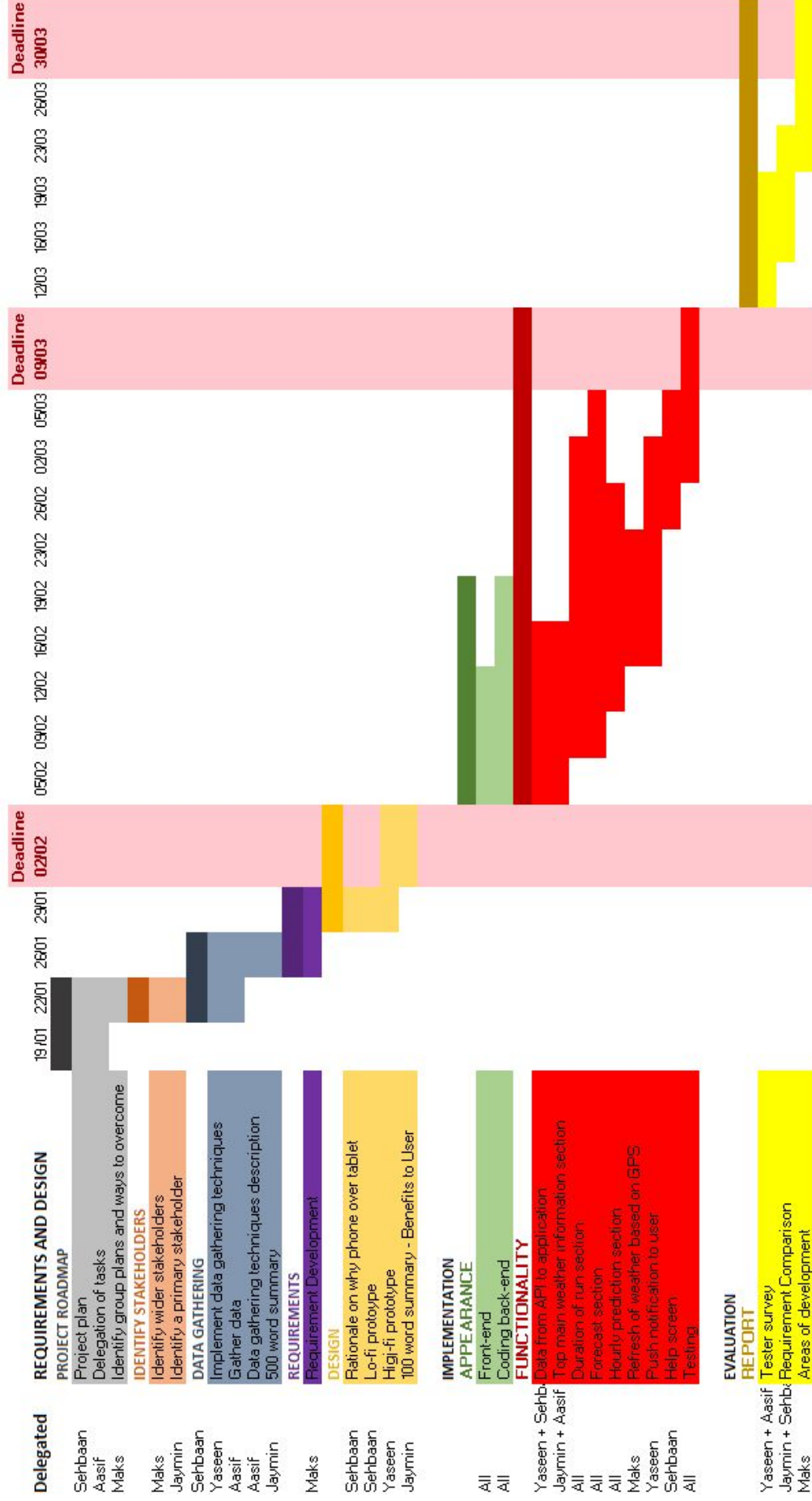
This is the screen that appears when the application is opened from the app draw (home screen). To find today's temperature, the user just has to look at the top of the screen to find today's temperature.



- d) Our app has all the main functionalities of a weather app with added features to satisfy the needs of an amateur runner. One feature we included is 'Duration' which enables the user to select the duration of time they are running, during this time the app will update the user on any significant weather/temperature changes to come; it will do this in the form of a push notification/vibration. This will allow the stakeholder to decide if the conditions are still suitable to run in. Another feature we included, allows the stakeholder to input the temperature they would like to run in, and the application will then display the optimum time of day to run. This will give the stakeholder the chance to run in the best conditions and will benefit their confidence as they will feel more comfortable running in ideal conditions.

Part 6:

Below is a roadmap designed on Excel which shows all the tasks that we need to complete and that have been proposed on previous sections. It also shows the delegation of tasks between all group members. We have also included deadlines for each task to be completed by so we know exactly when the work needs to be handed in. Delegation of roles are important as this means we do not overburden one person with excessive tasks - rather the work is split up between several people which lightens the load for everyone and helps to develop a better end product.

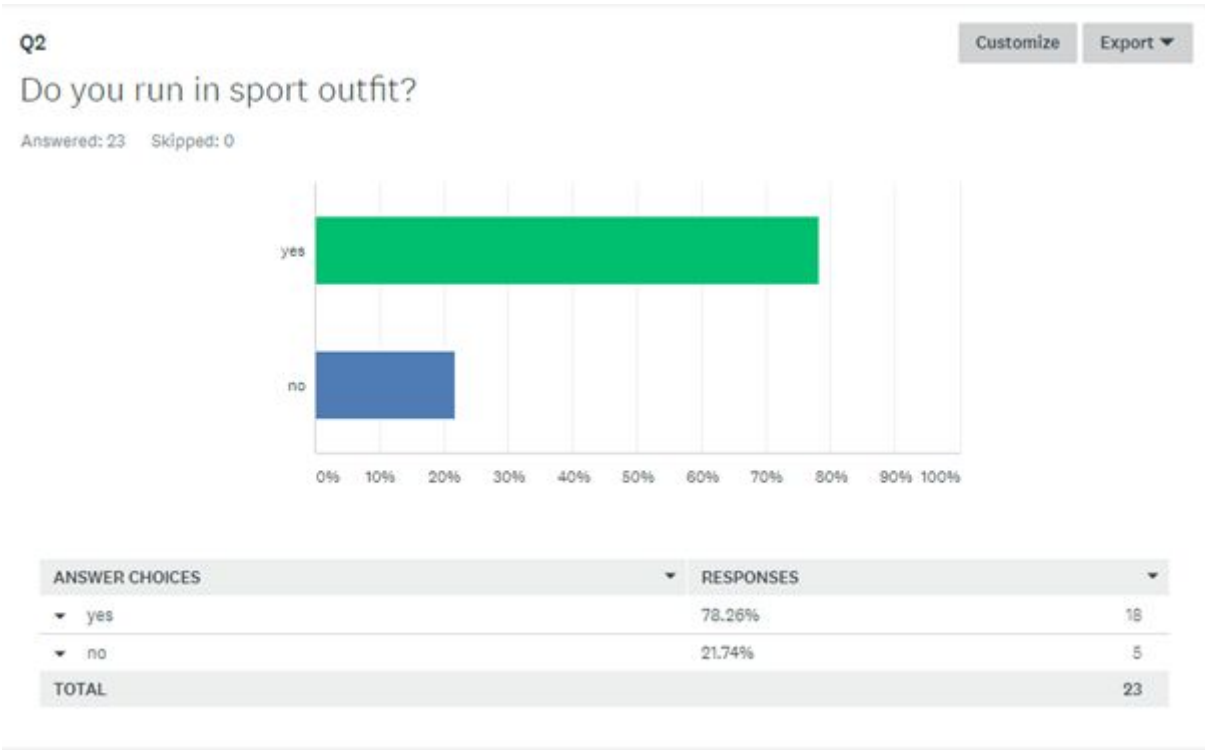


Problems we have already had are the design of the lo-fi and improved lo-fi home page for the application and finding extra functionalities to add to the app specifically tailored to runners. To overcome the problem of creating the designs for the home page, we brought in the help of a friend to teach us how to design prototype application interfaces on Adobe Photoshop. After learning this skill, we applied it to the design of our prototype homepage interface. This enabled us to create an extremely realistic improved lo-fi prototype. To overcome the problem the problem of trying to add extra functionalities to the application, we used the data gathered from the questionnaires and interviews we conducted to deduce what extra functionalities could be added. By doing this, we could meet the needs of the end user and also increase the functionality and usability of our app.

Looking ahead to the implementation of the weather application, we may encounter problems when coding some of the functions and none of us have any experience in coding mobile applications. Additionally, it may be hard to realise and abide by the requirements and interface we created in the previous sections. Furthermore, as it is such a big task and there are many delegations of roles, we may encounter communication and contribution issues. To overcome the problem of coding, we will endeavour to watch online tutorials to learn specific concepts that can be applied to our application. We could also request help from teaching assistants and lecturers in the university itself. To overcome the problem of of abiding by the requirements, we will try not to be overambitious and requirements may be harder to implement in reality; therefore we may adapt our implementation to make it more suitable to create. To overcome the problem of communication and contribution issues, we plan to hold regular meetings in person and online to ensure we are all on track and keeping to deadline. We will also ensure tasks are delegated equally and no one feels they have too much or too little work to complete.

Data Gathering Results

Questionnaire:



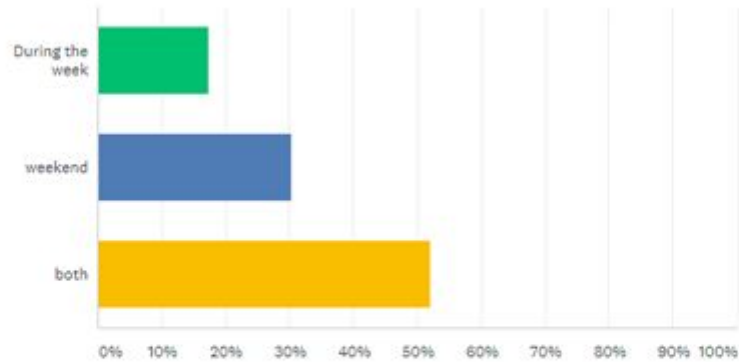
Q3

Customize

Export ▼

When do you prefer to run?

Answered: 23 Skipped: 0



ANSWER CHOICES ▼

RESPONSES ▼

▼ During the week

17.39%

4

▼ weekend

30.43%

7

▼ both

52.17%

12

TOTAL

23

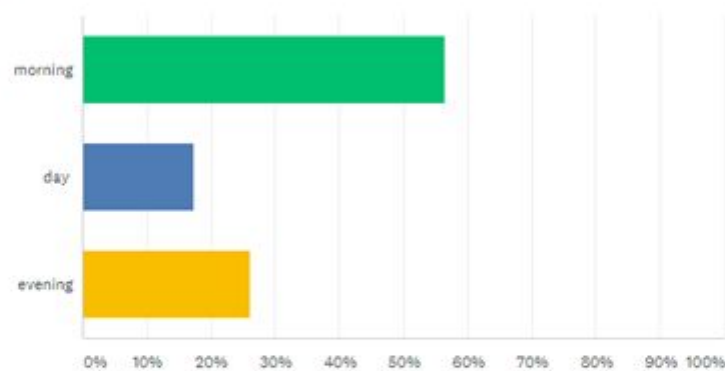
Q4

Customize

Export ▼

When do you prefer to run?

Answered: 23 Skipped: 0



ANSWER CHOICES ▼

RESPONSES ▼

▼ morning

56.52%

13

▼ day

17.39%

4

▼ evening

26.09%

6

TOTAL

23

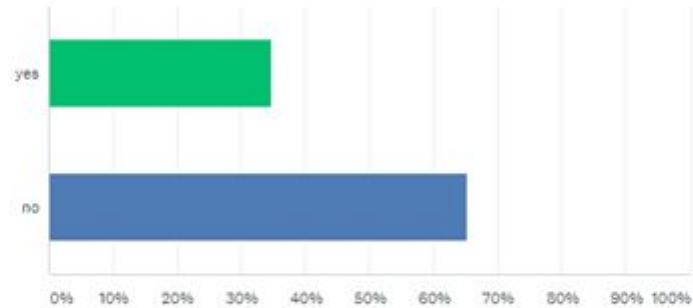
Q5

Customize

Export ▼

Do you require new sport cloth often?

Answered: 23 Skipped: 0



ANSWER CHOICES ▼	RESPONSES ▼	
▼ yes	34.78%	8
▼ no	65.22%	15
TOTAL		23

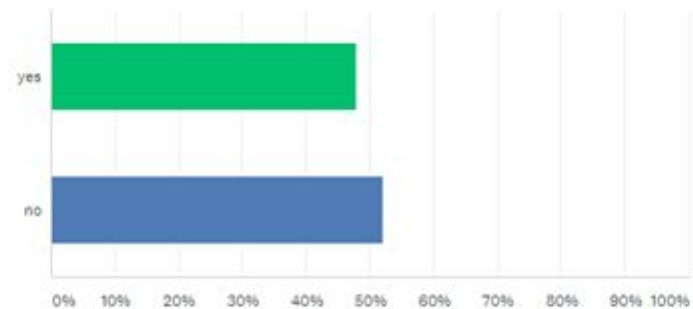
Q6

Customize

Export ▼

Do you consider running your main sport activity?

Answered: 23 Skipped: 0



ANSWER CHOICES ▼	RESPONSES ▼	
▼ yes	47.83%	11
▼ no	52.17%	12
TOTAL		23

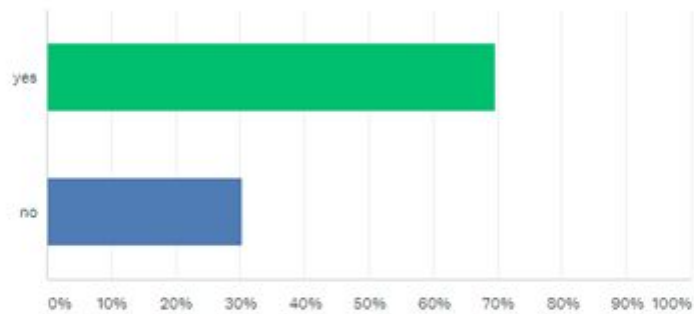
Q7

Customize

Export ▼

Do you consider yourself healthy?

Answered: 23 Skipped: 0



ANSWER CHOICES ▼	RESPONSES ▼	
▼ yes	69.57%	16
▼ no	30.43%	7
TOTAL		23

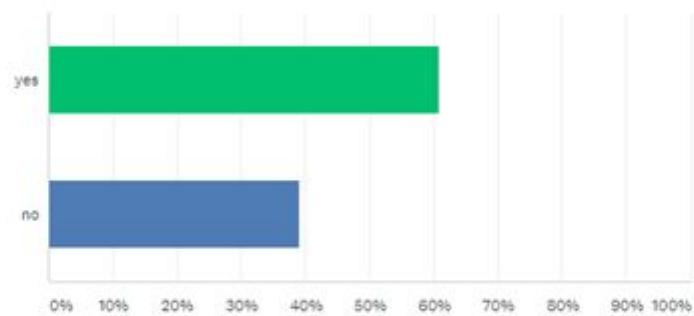
Q8

Customize

Export ▼

Do you usually use a weather app before you go for a run?

Answered: 23 Skipped: 0



ANSWER CHOICES ▼	RESPONSES ▼	
▼ yes	60.87%	14
▼ no	39.13%	9
TOTAL		23

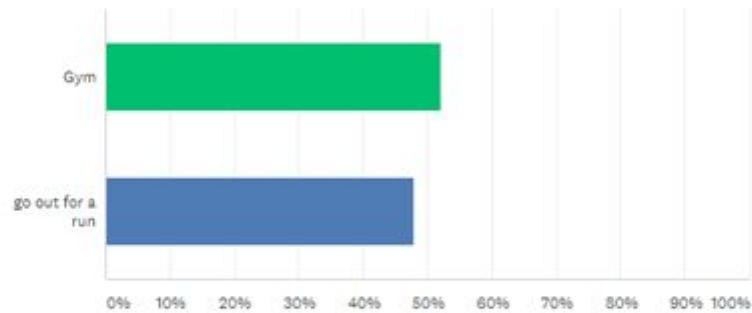
Q9

Customize

Export ▼

What is your preferred place of training?

Answered: 23 Skipped: 0



ANSWER CHOICES ▼

RESPONSES ▼

▼ Gym

52.17%

12

▼ go out for a run

47.83%

11

TOTAL

23

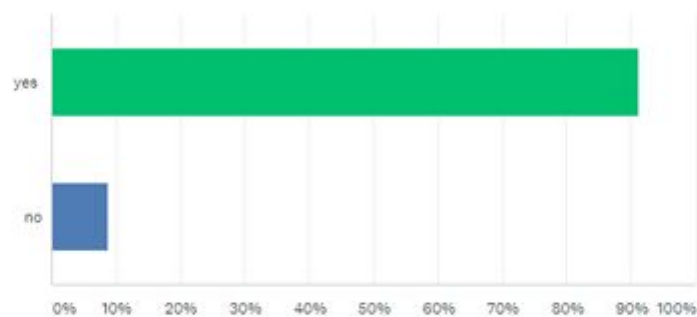
Q10

Customize

Export ▼

DO you use a phone app to check weather

Answered: 23 Skipped: 0



ANSWER CHOICES ▼

RESPONSES ▼

▼ yes

91.30%

21

▼ no

8.70%

2

TOTAL

23

Additional Research Questions:

RESPONDENTS: 23 of 23

SAVE AS ▼

QUESTION SUMMARIES

DATA TRENDS

INDIVIDUAL RESPONSES

Page 1

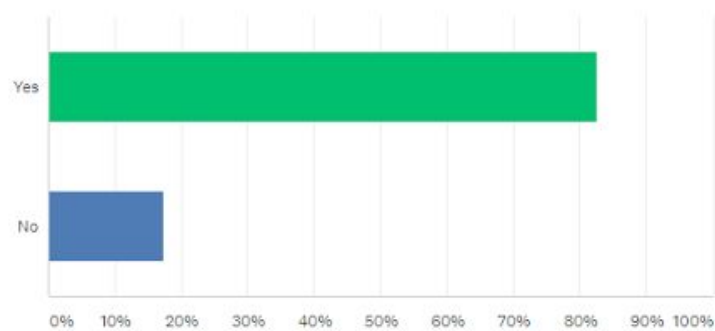
Q1

Customize

Export ▼

If there was an application that allowed you to check the weather for the duration of your run, would you use it?

Answered: 23 Skipped: 0



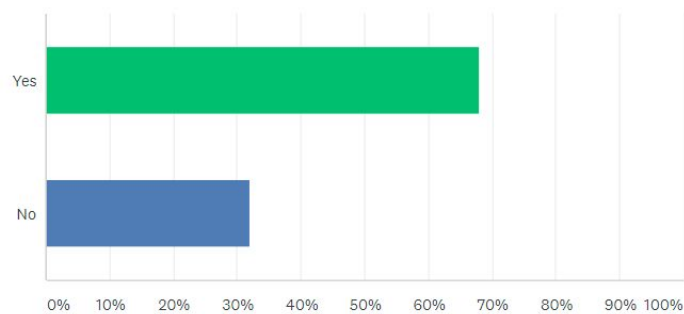
Q2

Customize

Export ▼

Would you recommend this app to a friend?

Answered: 25 Skipped: 0



ANSWER CHOICES ▼

RESPONSES ▼

▼ Yes

68.00%

17

▼ No

32.00%

8

TOTAL

25

Interviews:

Interview 1:

1. When you run, are you affected by weather or not?

Weather does not bother me at all. I run every morning in any weather, any time of the season. It's a part of my lifestyle and I try to keep running every day.

2. Do you run in a sports outfit?

Of course, only in sports clothes.

3. When do you prefer to run?

It doesn't matter whether it's the weekend or not – my rule is to run every day.

4. What time of day do you prefer to run?

I run in the morning. It became a part of my morning routine - but if I absolutely can't run in the morning, I'd do it in the evening.

5. Do you require new sport clothes often?

No, I don't. I only buy new clothes when my current outfits are no longer in a wearable condition.

6. Do you consider running your main sport activity?

Yes, I would say so. I sometimes exercise in the gym but when I do, it's not for long. But when I'm running, I can go for 2 to 2 and a half hours every day. Due to that, I think it's my main method of exercising.

7. Do you think you have a healthy lifestyle?

Yeah, I think I'm a very healthy person. I don't eat junk food or drink fizzy drinks. Plus, I cook myself healthy food and salads, on top of doing regular exercise.

8. Do you usually use a weather app before you go for a run?

If I open my phone before going out I might check it, but in reality, I rarely do that since the weather doesn't bother me unless it's a health hazard.

9. If the weather turns out to be bad on a day you've already started running, would it affect your run in any way?

Most of the time, it wouldn't affect my run, but if there's a potential weather warning, I'd stay at home if it has the potential to be a health risk.

10. What is your preferred place of training?

I barely go to gym and prefer running just outside in park more.

11. Do you use a phone app to check weather?

I don't use it but if I did, I'd probably check it on my phone or iPad. It would be pretty handy on days where I don't run due to the weather being a health risk.

12. Do you think it would save time and make your running experience more convenient if you checked the weather before you went out on a run?

Definitely. I don't use them much because I usually run regardless of the weather, but it could save time and make my life easier. An app that lets me know if the weather is changing while I'm out on a run would be very helpful since I'd be able to change my route if necessary.

Interview 2:

1. When you run, are you affected by weather or not?

Oh yes, I am a very weather dependent person. If it's raining or snowing outside; basically any weather condition other than sunny I won't go out for a run. Only if it's good weather.

2. Do you run in a sports outfit?

Yes, apart from my t-shirt. It can be any t-shirt that I wear not specifically a "sport" one.

3. When do you prefer to run?

I try to run 6 times a week, however, it all depends on the weather and when I have free time. I also never run on Sundays.

4. What time of day do you prefer to run?

It really doesn't matter for me as long as the weather is good. For example, if in the morning the weather is horrible but by evening the sky is clear, I will go for a run in the evening and vice versa.

5. Do you require new sport clothes often?

Not really only if I really need something new then I will buy otherwise no.

6. Do you consider running your main sport activity?

Not at all, running is just my side exercise that I do. The main one is swimming for me.

7. Do you think you have a healthy lifestyle?

Of course, I regularly exercise and try to eat healthy most of the time.

8. Do you usually use a weather app before you go for a run?

I always check weather before going out to know what to wear. Also, if the weather is going to change for the worse anytime soon, I probably won't go out.

9. Do you usually check what the weather will be like for the duration of the run?

I would want to know what the weather is going to be like whilst I'm running but there's no way to check if the weather will change whilst I'm out there at the moment.

10. Would it help to have a notification system to alert you when there is a change in weather whilst you are running?

Yes, this would be an extremely useful feature to have but I would have to know when the change is occurring so I can then stop and check what the change is.

11. What is your preferred place of training?

Neither gym nor running. I prefer swimming over any other sport activity. It's my main thing and I love sticking to it.

12. Do you use a phone app to check weather?

I usually use my default phone app but if I can't find my phone, I'll use TV to check.

Interview 3:

1. When you run, are you affected by weather or not?

Not really, I run in any type of weather as long as I feel good. If I get a headache from weather changes or in general I don't feel that good, I won't go for a run, that is the only condition.

2. Do you run in a sports outfit?

Yes, I do. In a full sports outfit.

3. When do you prefer to run?

I only run during the working days. Saturday and Sunday, I skip.

4. What time of day do you prefer to run?

I run twice a day, once in the morning and again in the evening.

5. Do you require new sport clothes often?

Yes, I do. I always check new sports clothes so I can be up to date with new releases and I usually buy new stuff.

6. Do you think this is due to the weather as well?

Yes, it's probably partly due to the weather as this causes increase wear in my clothes.

7. Do you consider running your main sport activity?

I don't do anything else really so I think running is the main thing for me.

8. Do you think you have a healthy lifestyle?

Well I try but it doesn't really work often for me. Sometimes I can eat healthy, but other times I will go to McDonalds so I'm not really good at maintaining a balanced lifestyle.

9. Do you usually use a weather app before you go for a run?

I don't usually think about the weather when going on a run but maybe this will improve my mood if I do use one because then I will choose to go running when the weather is nice.

10. How would you use the weather app?

I would probably use it just before I go on the run so that I know exactly what type of weather it would be as I am running, I would like to know the weather for the whole time I'm running though.

11. What is your preferred place of training?

I don't like the gym, it is too crowded for me and too small. I think I will stick with running outside as a preferred place.

12. Do you use a phone app to check weather?

I don't use an app like this at the moment, but I think I would like to use one because then I wouldn't get ill so often after running in bad weather.

13. If you did decide to use a weather app, what device would you most likely use it on?

If I used it I think I would use it on my phone over any other device. I always have it with me and I use it to check anything online so probably would use it to check weather as well.