# Project Description – Matthew Ahearn

## Timeframe

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| --- | --- | --- | --- | --- | --- | --- | --- |
| Week | All | Matthew Ahearn | Victor Van der Meer | Kanav Atri | Connor Abdulai | Mark George | Quentin Schuster |
| 1 |  | Explore possible tools and technologies | Write report section aims  Set up team GitHub profile | Write report section team profile | Write report section tools | Explore possible tools and technologies | Further research into project idea |
| 2 |  | Write report section Timeframe and risk | Write report section tools and technologies | Investigate tools for prototype | Write report section Topic  Write report Section Motivation | Write report section Roles | Write report section scope and limits |
| 3 |  | Learn mit app developer | Learn mit app developer | Determine preferred coding language for combined prototype | Write report section Landscape | Write report section testing | Learn mit app developer |
| 4 |  | Develop Health Tracker app prototype | Develop GPS tracker app prototype | Investigate sensor options for location, steps, heartrate and temp | Write report section skills and jobs | Compare API’s i.e thingSpeak and Arduino for compatibility with app language | Develop geoalert app prototype |
| 5 | Reflect on Assingment 2 Feedback | Create Health tracker app prototype documentation | Create GPS tracker prototype documentation | Write report section plans and progress | Test Health Tracker app prototype | Test geoalert app prototype  Test GPS Tracker app prototype | Create geoalert app prototype documentation |
| 6 | Write group reflection | Assist as required for final report submission | Compile Presentation | Write report section plans and progress | Compile Presentation | Assist as required for final report submission | Assist as required for final report submission |
|  |  |  |  |  |  |  |  |
| 7 | Submit group feedback | Learn agreed coding language | Learn agreed coding language | Build prototype of PetFindr collar with location, step, heartrate and temp sensors | Build prototype of PetFindr collar with location, step, heartrate and temp sensors | Build prototype of PetFindr collar with location, step, heartrate and temp sensors | Learn agreed coding language |
| 8 |  | Develop combined app prototype | Develop combined app prototype | Build basic pet food database with some common brands and items | Investigate sensor options for barcode and water | Create small database of pet types with different outputs based on type breed and weight | Develop combined app prototype |
| 9 |  | Adjust app prototype to take data inputs from collar prototype | Adjust app prototype to take data inputs from collar prototype | Build prototype of collar with barcode and water sensors added | Build prototype of collar with barcode and water sensors added | Build prototype of collar with barcode and water sensors added | Adjust app prototype to take data inputs from collar prototype |
| 10 |  | Expand app to include water intake and food database, alter calorie input data to be collected from barcode scanner | Expand app to include water intake and food database, alter calorie input data to be collected from barcode scanner | Test collar and combined app | Test collar and combined app | Test collar and combined app | Expand app to include water intake and food database, alter calorie input data to be collected from barcode scanner |
| 11 |  | Create new app function that allows user to specify type, breed and weight of pet | Create new app function that allows user to specify type, breed and weight of pet | Test collar, app and database | Test collar, app and database | Test collar, app and database | Create new app function that allows user to specify type, breed and weight of pet |
| 12 |  | adjust output parameters for calories temp and heartrate to be based on type of pet | adjust output parameters for calories temp and heartrate to be based on type of pet | Create advertising and promotional material | Create advertising and promotional material | Create advertising and promotional material | adjust output parameters for calories temp and heartrate to be based on type of pet |
| 13 |  | Expand pet database | Expand pet database | Test collar and app on different pets | Test collar and app on different pets | Test collar and app on different pets | Expand pet database |
| 14 |  | Review and expand promotional material | Review and expand promotional material | Perform stress testing of collar – water, dust, bites, impact, temp etc | Perform stress testing of collar – water, dust, bites, impact, temp etc | Perform stress testing of collar – water, dust, bites, impact, temp etc | Review and expand promotional material |
| 15 |  | Review bugs from testing | Review bugs from testing | Additional testing on new pets | Additional testing on new pets | Additional testing on new pets | Review bugs from testing |

## Risks

There are two primary forms of risk for this project, those being software risks and hardware risks.

The first software risk we will encounter is difficulty for our team in learning to use the programming languages, API and other software we will need to use to create the project. Using mit app inventor for the initial prototype will alleviate this risk in the early stages as it is intended for use by beginners and has dedicated tutorials aimed at newer programmers. However mit app inventor has some limitations for example the apps can’t run continuously in the background. We will need to move to more advanced programming language and platforms as the project progresses and our ability to learn these may be roadblock. It is possible we will need to adjust the scope of the project to accommodate our abilities as we continue.

Lack of uniformity in our devices will also pose challenges. Some of us are using Android devices and others use apple. This means that we will need be careful to select languages that work in both environments and make time for testing both settings. We have attempted to allow for both additional coding and testing time in the timeline. On the plus side this challenge means we need to build cross platform functionality into our project from an early stage rather than trying to port it later, which may well save us time in the long run.

Selecting the correct sensors will likely be a significant challenge. We need to ensure that they have API support that we will be able to use in our application and are also robust and effective on a variety of different pet species. It is very likely that will we need to experiment with several different sensor and as such significant time has been devoted to investigating sensors and testing the combined functionality of the app and collar.

We will also need to be mindful that the nature of the product will expose it to some stressful environments. The PetFindr will regularly get wet, muddy, exposed to dust, subjected to impacts and possibly bite force as well as see a variety of temperature and humidity. For this reason, we have included dedicated stress testing in the timeline.

Finally, it is worth noting that the PetFindr project is ambitious in scope with its range of sensors and functions. To help give the best chance to meet these objectives we have split the group into a hardware and a software team to allow us to develop specialisation and maximise our efficiency. It is recommended that whenever the software team present a new update of the app to the hardware team the group compare our actual progress with expected progress from the timeline and consider adjusting our scope to ensure we have a minimum viable product at the end of the fifteen weeks.