**Intro**

* ***How it helps***

Have you ever looked at the trail map of a mountain and you see all the runs but you just don’t know which one is right for you? Have you ever arrived at a new mountain and had no idea what run is right for you. SnowWizard is the solution. You might be a great skier but you feel really tired, so you don’t want to be pushed too hard; SnowWizard will recommend some runs which match to your skill and energy levels. It displays the runs suitable for you and displays them on an interactive map.

* ***Code – small***

My mentor and I coded the entire app by ourselves. We used Adobe Dreamweaver to code the app. The language that I had to learn was HTML or Hypertext Markup Language. HTML is used in 99% of modern programming. Hypertext means it is worked on the internet and markup means it describes the visual structure. CSS stands for Cascading Style Sheets and it decorates the HTML. We chose this language because it is the most commonly used language and my mentor is very good with this language.

* ***How it works***

Since we coded the app we had to think of the formula of skill and energy to get us the recommended runs. It took us a while to think of a solution but we found one. Wherever the skill is that is where a marker is set and when the energy is in the centre there is an equal radius on either side and whatever runs are in that radius will appear on the map. If the energy is at the top it will only show runs above the set marker because the radius is only above. It’s the opposite if the energy is at the bottom of the scale.

* ***Why I made it***

I made the app because I have been in the situation of not knowing what run to do at an unfamiliar mountain or even when I ski at Buller I do the same runs and having the app can help me do another run I would not think to do. At some unfamiliar mountains, you have green blue and black runs but you don’t know which the best runs are for you. Maybe you want an easy black run so you try to find an easy looking one off the trail map and then half way down you get stuck because it is way too hard.

* ***Mentor***

My Mentor is my uncle. He works at the NAB bank and helps write the code for the website. He has gone through almost every step of the journey with me and he has been great. He wanted to not just have a good time with me making this but he wanted to give me an experience as if I was working as a coder for a job. He taught me how to use Agile Development which I will go into more details later on.

* ***Inspiration***

My inspiration for the app and especially the name was my dad. When my brother and I were little he would always tell us stories of the wise wizard of the mountain. We were totally convinced that the wizard of the mountain was real. Dad told us how he has met him before and how he told dad some tips to stay safe on the mountain which dad told us.

* ***Why Mount Buller***

I chose Mount Buller because that is the mountain I feel the biggest connection with. I have grown up always going there and I know the mountain very well. From my good knowledge of the mountain, I could easily make the app because I knew everything I need to know.

**Main**

* ***Design***

A big part of this app was designing everything. All of the runs, pages logo and map were all designed by my mentor and I. We used google earth to find a bird’s eye view photo of the mountain and we screenshotted a picture of the mountain. We opened the image in Photoshop and turned the opacity down so we could see half blank half screenshot. We drew the mountain on top of that screenshot with all of the contour lines as well. For the runs we did the exact same thing but looked on trail maps to see what runs we were getting and we drew these on illustrator. The pages were designed in the actual code CSS files. Background images were put in as well. For the design of the logo, we looked at many previous existing photos of wizard hats and designed our own on Illustrator and Photoshop. We did the same for a wizard but we didn’t end up using him.

* ***Code***

The app was fully coded by ourselves. We used many analogies to help us understand all of the code better. One that helped me out a lot is the analogy of the house. In the house, the JavaScript is the walls and backbone of the house. All of the wirings of the lights and heaters and everything is the source code and the interior design of the house is the Cascading Style Sheets (CSS). The Decision Engine makes the wiring of the house work. Everything that you can see in our app we designed. Some images that we made and some are the code that we put into the computer and gave it direct commands. This is what we did for most of it because of the background image, map, runs, and logo are the only images showing.

We had to split up the code into all of its different parts. Especially the JS, CSS, Source code and Decision Engine because it makes everything way easier to find. By doing this we had to cut the code out of Dreamweaver and make a new text file in my folders on my computer. We then had to make a link to it from the source code. We ended up with eight different documents because even in css and js you split bits up because they do different things and it makes things way easier to find.

* ***Parts of the app***

On the brochure, I divided my app into 6 main parts. Three from the parameters screen and three from the map screen. The three from the parameters screen were the logo, parameters, and buttons. The logo combines a wizard hat with snow to put a picture to the name. Also, the story of my dad and the wizard of the mountain comes in for the name of the logo. The parameters are Skill and Energy. Skill outweighs energy but energy makes a difference. The buttons on the parameters screen are “Go” and “Show all runs”. The “go” button displays results to suit your skill and energy. The “show all runs” button displays all of the runs on the map.

On the map side of the app, it is broken into buttons, runs and road/carpark. There are two types of buttons, a back button which takes you back to the parameters screen and zoom buttons. Runs appear for your level when you hit “GO” but all runs display when “show all runs” is pressed. The colour of the run determines what difficulty they are. The road and carpark give bearings of where the village is. The car park is where most people arrive at the resort so it helps them know where they are when they arrive.

* ***Agile Development***

Agile development has a set of rules to guide project development. Here are the following guidelines:

Iterative development – from a very basic solution (MVP) until time/money runs out.

Embracing change, allowing great new ideas for the entire project.

Breaking the project into smaller tasks, and using each to determine velocity.

Reliance on good tools.

Story- A chunk of development that delivers some positive outcome to the app. Each story will have number, title, story, points, and description.

Velocity- the speed at which the project is progressing. This is measured by the rate of story points being completed compared to the time left. If 36 points are done, and 50% of the time is left, you know you can do another 36.

MVP – Minimum Viable Product. The basic, working app at the end of iteration 1. This may not be very useful but it works.

Agile tools – Code repository: an online place where you back up the code. Kanban wall: wall or web page where stories are listed as tickets. Stories are moved from left to right as they progress. We used Trello for our Kanban wall.

* ***Presentation***

When we thought about presenting the app we thought and thought. We can’t just plonk the phone on the table and say there we go. It is very lame and we can’t attract people over. We decided to make a brochure which breaks down the components of the app. It shows all of the apps main features and it looks really good too. It is easy to understand and it portrays the idea of all features. We also made a big cut out of the parameters screen. We used Photoshop to place the parameters screen screenshot in a high-resolution iPhone picture. We printed this at Officeworks in A3 and got a foam core board as well. I pasted the A3 onto the foam core board and cut it out with a knife. We got a Lightning cable to HDMI so we could show what is happening on my phone on the big screens. Also, a scrapbook was made to show people the steps in more detail.

* ***Excel***

This was the first time I really used excel other than making a graph and I learnt so many things about it. It can write the code pretty much for you for the given data if you tell it what to do. We stored all of our data in excel sheets. The data was ID, name, difficulty, colour, code, and description but that is not ready yet. Without using this tool it would have been a very long and slow process.

* ***How I will make money out of it***

I am hoping to put the app on the app store because I want to make some money out of the app. I need publicity and I am in contact with the owner of Georges Ski hire and thinking of doing a deal with them to advertise. I might also get a license with Mount Buller and they could put it on their website. I don’t want to fully sell SnowWizard off because I think it has potential to do great in the long run.

* ***What we are still working on***

Before we release the app we still have one iteration to complete. In this iteration, we want to have descriptions of all the runs and put the chairlifts on the map. I have already started writing all of the descriptions and I am nearly done. It is easy to make the chairlifts as well because all we need to do is draw over the bird’s eye view map.