

A Fatigue Management & Farm Safety Data APP // Concept only.

Name of App/Product/Service: (*Concept only*).

ESKYMATE.

{Esky – An insulated container that keeps things cool, (Mostly beers).

{Mate – each of a pair of things intended to complement or match each other}.

/ Eskymate /.

{A portable ‘self-care cooler’ for you and your family.}

OVERVIEW: What is Eskymate?

An aussie approach to managing fatigue, farm safety and data collection & representation for Australian farmers, land carers, people who live & work in rural or remote Australia and all the legends out there.

Eskymate is a simple self-assessment tool that can be used in 30 seconds for farm and agriculture safety, not just for the workforces but for the individuals and the families.

Eskymate focuses on three core features: Fatigue Management, Daily Farm Data reports and Farm Safety, while also acting as a vehicle for driving the user to online information such as Safety Data Sheets for info regarding general farm chemicals, proper storage of chemicals, child safety on the farm and other areas of farm safety.

MOTIVATION: Why Eskymate?

We all make it a priority when the boss is asking for a Safe to Work Sheet or Fatigue Management plan before you can start work, and of course you know the hazards and risks in your workplace, the safety rep makes sure you watch enough safety videos on company time, but what if you haven't been exposed to that industry or care within a work environment before, when someone isn't reminding you about YOUR safety.

What about the people who have been working from home for generations, cultivating, farming and providing for our people, our country and the world?

Who takes care for our dead-set legends in rural and remote Australia?

It's the families, wives, husbands, daughters and sons, the neighbours and communities.

That's a lot of people so they should be safe, right?

"ON-FARM deaths have remained steady at 33 for the six months to June 30 – a similar number to the 34 recorded for the same period last year, according to AgriFutures Australia's *'Non-intentional Farm Related Incidents in Australia 2020 mid-year report'*.

Since 2001, 1523 people have lost their lives on a farm due to non-intentional injury in Australia."

(Beef Central, September 14, 2020).

The above article is from BEEFCENTRAL.COM

<https://www.beefcentral.com/uncategorized/farm-deaths-and-injuries-continue-to-take-heavy-toll/>

The 2020 and 2019 figures from the [Safework Australia website](#) listed in the table below are based mainly on initial media reports and is a preliminary estimate of the number of people killed while working.

Industry of workplace	Preliminary worker deaths year-to-date, 3 December 2019	Preliminary worker deaths year-to-date, 3 December 2020
Transport, postal & warehousing	55	51
Agriculture, forestry & fishing	29	30
Construction	21	26
Public administration & safety	8	15
Manufacturing	10	12
Mining	10	5

(Safework Australia 2020).

This information does not directly show incidents caused or linked by fatigue in any way but take into consideration the integral connections between the Transport, Agricultural and Forestry Industries and their important roles that interact with your everyday life and wellbeing.

The below Statistics are for Victoria alone,

“Fatigue is a major cause of crashes in Victoria resulting in some 50 deaths and approximately 300 serious injuries each year.”

“A Federal Government inquiry, Beyond the Midnight Oil, in October 2000 reported fatigue related road accidents alone cost around \$3 billion every year.”

“Around 20% of fatal road accidents involve driver fatigue. According to VicRoads Road Accident Facts Victoria, 1998 Edition, about 30% of severe single vehicle crashes in rural areas involve the driver being fatigued.”

(The Australian Transport Accident Commission, TAC.

<http://www.tac.vic.gov.au/road-safety/statistics/summaries/fatigue-statistics>).

“Non-Fatal Injuries cost around 100 million in farm workers compensation”.

(From the front page of <https://www.farmsafe.org.au/>).

How can we not only support fatigue management but become involved in the wellbeing of our heroes who work tirelessly on the land the same way an employer manages the fatigue of an employee who transports it? But with a different approach, a more simplistic and care giving one.

DESCRIPTION: What does Eskymate do?

Who can help you keep track of your fatigue and wellbeing when it's not a requirement of your boss/supervisor and the only person who is still awake is a hard worked loved one? Eskymate, that's who!

You won't find Eskymate in every rippers home, but it will serve a purpose to those who may sometimes be overlooked.

Eskymate can.

- **Calculate an Individuals Fatigue-Likelihood Score** based upon their self-assessment test which can be completed at any time via a simple to use calendar app.

- **Generates visually appealing morning reports** of local Farm Data such as water levels in rainwater tanks, Weather/Fire Rating forecasts and a general mood/vibe and simple overview of expected daily tasks for the individual.

- **Sends report to other individuals** selected to receive them. The report is short and simple to understand.

- **Farm Safe & Family Ready** - Offers an easily accessible portal to online information regarding chemical safety and storage safety.

- **Emergency Contacts.**

- **Pop up notifications** – Show info regarding work areas or skills required. For example, if you are working in a fire danger area, are you aware of the closest fire extinguisher and have knowledge of how to use it?

- **Message board** - General notes, inspiration, thoughtful messages and reminders from loved ones pop up like a sticky note.

- **Thought provoking Pop-up reminders** – max 1 per day.

Examples(concept only),

When was the last time you ran the backup generator?

Are you aware of the issues drinking contaminated rainwater can cause?

When was the last time you gave the water tanks a clean out by qualified personnel?

Are the gutters leading to your house rainwater tanks clean and sufficiently flowing?

When was the last time you checked the tyres on your portable farm-based fire & rescue trailer?

Are the kids coming over this weekend, are you farm safe and kid wise ready?

Did you know you must alert your neighbours if you are using rabbit and pest bait?

The Morning Report!

The Morning Report is a simple, pleasing and easy to understand image-based report with icons, emoticons, values & percentages, general farm icons and machinery icons.

The report will include,

- The days Weather Forecast. (Pulled from internet).
- The days Fire Rating. (Pulled from the internet).
- An up-to-date water level reading of rainwater tanks.

Suggested questions to ask the user, (*Optional & concept only*).

- 1 How are you feeling, what type of Mood are you in?
- 2 Do you feel well rested?
- 3 How confident are you in overcoming hazards and risks of your first major task today? (*Displayed as a Hazard Rating scale*).
- 4 Where are you working today? (Drop a pin using a GPS application).
- 5 Anything you would like to say? (Text Box Max 25 words or 100 characters?), For example, “Hey love, all good the tractor actually started today!” or “Feel like crap dude, where’s the coffee?”
- 6 What do I feel like? Food, water, coffee, snacks, pick me up, fruit, sleeping.

Answers to questions are represented and viewed in a simple picture style report.

(*Concept only*).

1. 1 Represented by sequence of emoticon faces assembling in random generated format.
2. 2 Represented by sequence of emoticon faces assembling in random generated format.
3. 3 Represented by GPS coordinates picture with external link to google maps satellite.
4. Represented by sequence of emoticon faces assembling in random generated format.
5. Viewed as text format, emoticon of food, water, coffee, beverages, snacks, fruit and vegetable sleeping.

Calculated Fatigue/likelihood Score.

(Concept only).

A simple based image style report showing hours slept, hours worked, and hours rested for the week based on questions during the morning report.

This will be tracked by the usage of an in-app calendar with 3 simple colour coded hourly options – Green for 8 Hours and under, Yellow for 8 to 10 hours, Orange for 10 to 12 hours and Purple for 12 + hours. The user must input this information at their desired availability. Another option will be for sleep, Green for 8+ Hours, Yellow for 7.5 to 6.5 hours, Orange for 6.5 to 5 hours and Purple for below 5 hours. The user must input this information at their desired availability.

At the end of each week the report will collect the information from the in-app calendar and the morning reports to collate data regarding average weekly mood, average hours worked, and average hours rested (based of hours not worked)

- Note to be added that work doesn't end when the tractor gets turned off, it ends when you are safe, your farm machinery is safely stored away, you are washed and inside enjoying time with your family, this should be taken into consideration when collecting data, **allocation must be considered.**
- **Note to be added is that this is not a medical diagnosis only a care giving involvement for wellbeing.**

The purpose of this data collection project is to:

- Record the daily moods of the user.
- Record the daily level of the hazard rating.
- Record the weekly hours worked.
- Total the weekly hours, moods and hazard ratings of the user.
- Calculate a Fatigue-Likelihood Score.
- Display information in user friendly format.
- Record and use data for your well-being and fatigue management.
- Data can be used to track the user's fatigue, mood and hazardous tasks completed during these periods.
- Data can be interpreted/used by the user to think about self-care, their family's wellbeing, hazards associated around the work/home environment, ways to minimize fatigue etc in a completely new way of self-learning and acknowledge through self-care.

Who else can this information be sent to?

All the peers, your close relatives and friends, your co-workers, general farm hands and General Health Practitioners upon approval by the user.

TOOLS AND TECHNOLOGIES: How can we fabricate Eskymate?

I would like to learn how to use the RMIT App Tool with my team to develop this concept project.

I would also like to discuss with my peers more about some of the software for the project and how to fabricate some of the ideas in the project such as collecting and calculating data. I believe we will need to use programmes such as Photoshop and Illustrator to design the graphics side of the project.

Following this I have found a free to use website for Icons, Emoticons and other images from www.flaticon.com.

Some of the types of icons, emoticons and images we can use are;

- Mood Emoticons.
- Morning mood Icons.
- Australian Icons.
- General Icons.
- Food and Beverages Icons.
- Fruit and Vegetable Icons.
- Agriculture & Farming Icons.
- Water Level Icons.
- Laundry Icons. (clean or dirty)
- Farm Machinery Icons.

SKILLS REQUIRED: What needs to be learnt, obtained or outsourced?

I believe that for this type of project we will need skills in the following areas,

- Graphic Design.
- HTML and CSS.
- Knowledge and experience with open-source tools such as the RMIT App tool.
- Understanding of Software development.
- Knowledge and understanding of the legality of obtaining data.
- Have a basic understanding of how to plan, create and build software.
- Possess a strong interest in the welfare of other people.
- Have an understanding of algorithms.
- Being competent in seeking out other disciplines where you see fit and express your opinions to the team.

OUTCOME: What kind of impact could Eskymate have?

I believe that this concept project has the opportunity to become a reality, with further assessment and research taken into consideration from my team regarding the reason, purpose, feasibility, ethicality and thoughts about the features within the app, Eskymate may have the ability to reach an audience who can be greatly benefited by this tool and it may be a band aid for the greater impact that safety has on all of us but best we start by patching, best we start somewhere.

Although we may not be dissolving the entire issue of fatigue management or farm safety, my goal is to simply help dissolve a small part of it by offering a more family orientated, care-giving approach to fatigue management.

Furthermore:

Some questions I asked myself during the process of working on my concept project.

Can we possibly work with *Australian Pesticides and Veterinary Medicines Authority*?
(<https://apvma.gov.au/> - APVMA – App Store.)

Is this Ethical?

Is it an invasion of privacy, are we walking up the hill of discretion?

Is this overkill or is safety this important?

Can we work with raspberry pi for reading water levels inside tanks?

Links to further research and information.

Fatigue guidelines notebook pdf

<https://www.ohsbok.org.au/wp-content/uploads/2020/05/20-Fatigue.pdf>

TAC fatigue related Death stats

<http://www.tac.vic.gov.au/road-safety/statistics/summaries/fatigue-statistics>

News article from beef central about farm deaths

<https://www.beefcentral.com/uncategorized/farm-deaths-and-injuries-continue-to-take-heavy-toll/>

Resources for farmers and stats on farm deaths and injuries

<https://www.farmsafe.org.au/Resources-for-Farmers>

Kidsafe on the Farm Fact sheet pdf

<https://kidsafeqld.com.au/wp-content/uploads/2020/12/Factsheetfarminjuries.pdf>

Icon packs and Emoticon packs

<https://www.flaticon.com/packs/agriculture-and-farming-1?word=farm>

<https://www.flaticon.com/packs/australia-33?word=australia>

<https://www.flaticon.com/packs/agriculture-70?word=farm>

<https://www.flaticon.com/packs/emojis-61?word=mood>

<https://www.flaticon.com/search/?word=water%20level>