



# MealMinder

## 36105: iLab Capstone Project

Group Number: 1

Web Application: [mealminder.streamlit.app](https://mealminder.streamlit.app)

Group members:

Michael Yaputra 24619001

Monali Patil 14370946

Thi Minh Tu Pham 24703872

Anika Chauhan 14188775

Nyan Paing Htun/Tyler 13053107

Yuquan Liew/Johnny 14111102

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# 1. Background context and market opportunity

Chronic diseases driven by poor nutrition present a challenge to healthcare systems worldwide. Conditions like diabetes, cardiovascular disease, and certain cancers are heavily influenced by dietary choices, leading to significant health burdens and economic costs.

In Australia more than 7% of diseases are due to poor diet, which is also a leading risk factor for the top 41 diseases in the country. A study found that dietary risk contributed 62%, 41%, 34% and 22% to coronary heart disease, type 2 diabetes, stroke and bowel cancer respectively (*Australian Burden of Disease Study 2015: Interactive Data on Risk Factor Burden, Dietary Risk Factors*, 2020). Policy makers and society are aware of the overall health and financial burden poor diet has on a population.

According to the Australian Dietary Guidelines, 3 out of the 5 guidelines state that choosing nutritious foods from the 5 food groups with limiting intake of saturated fat, salt, added sugars and alcohol is crucial to a healthy well being. The most effective way to ensure adherence to the guidelines is to actively track one's diet.

However, research shows that there are multiple challenges people experience with food journaling (Cordeiro et al., 2015). Some notable examples are:

- Effort required to journal is tedious
- Forgetting to journal
- Home-cooked meals are more difficult to log than fast food
- Stigma and emotional consequences of judgement

A solution is required to eliminate these obstacles for users and help healthcare providers discover trends using extensive population data. This gap in the market inspired the development of the MealMinder app. MealMinder distinguishes itself by using AI to transform nutritional tracking, offering the following features:

- Estimate nutritional content using generative AI from just the dish name
- Deliver accurate insights with a convenient and user-friendly design
- Personal and customisable meal recommendations
- Modern database designed for big-data, security and privacy

## 2. Project objectives

### Raise nutritional awareness

MealMinder translates complex nutritional science into easy-to-understand information. This helps users see how their food choices impact their health and make better decisions for their well-being.

### Streamline tracking for sustained engagement

MealMinder makes tracking meals fairly easy. Its AI technology figures out a dish's nutrition based on the dish name! This means no more searching for ingredients, making it simple to track their diet long-term.

### Deliver actionable, personalised guidance

MealMinder is like a personal health coach. It learns about the users' goals and preferences to suggest recipes that are perfect for users. This directed guidance helps them reach their health goals and lasting healthy changes.

### Enable informed decision-making

MealMinder shows nutrition trends in individuals' eating habits. This helps users understand their diet and pinpoint areas where they can make improvements for better health.

### Empower user

MealMinder puts users in charge of their health. It gives them simple tools to track their food and personalised advice to reach their goals, empowering them to make lasting, healthy changes.

### 3. Scopes

Develop user-friendly tools to interpret complex nutritional information.

This involves intuitive visualisations, summaries, and comparisons to established dietary guidelines. We developed a clear and easy-to-use interface for entering meals, focusing on simplicity and minimising manual data entry.

#### Robust ingredient database and historical nutrient tracking

We built a comprehensive database of foods and their nutritional values by leveraging reliable datasets provided by the Australian government. We enable users to access their historical nutrient intake data from the database and gain personalised insights.

#### Ingredient estimation

Our app utilises OpenAI to estimate ingredients based on simple dish names (user input) as opposed to providing a whole list of ingredients manually

#### Informative charts

The app developed intuitive charts, and graphs that display historical dietary intake, highlighting trends, deficiencies, and successes.

#### Secure authentication

Given the confidential nature of personal nutrition data, we implemented robust login systems with options for authentication.

#### Early health issues detection

We also enable users to detect health issues by incorporating external survey data and users' historical nutrition data using Classification (Random Forest Algorithm).

## 4. Data description

We incorporated three main data sources in our projects:

### Recommended nutrition intake

[The Eat for Health program](#) offers current guidance on the quantities and types of foods essential for maintaining health and overall well-being based on an individual's age and gender. We employed this data to give recommendations on the nutrition intake to our users.

### Nutritional components of ingredients

The [Australian Food Composition Database](#) (formerly NUTTAB) serves as Australia's primary nutrient reference database. It includes primary food data for basic foods items such as flour and milk, through to mixed dishes such as pizza and cake. Each food item is accompanied by a comprehensive dataset for 54 essential nutrients. This dataset is our main source of truth for calculating the nutrition components of each meal provided by users.

### Health-related telephone survey

[The Behavioral Risk Factor Surveillance System \(BRFSS\)](#) is an annual CDC telephone survey collecting health data from over 400,000 Americans. It focuses on risk behaviours, chronic conditions, and preventative service use, and includes 330 features derived from participant responses. We used this dataset to train our machine learning model for predicting users' diabetes risk.

## 5. Data science methods and techniques

The project employs various data science methods and techniques including data processing, recommendation systems, visualisation tools, interpretability techniques, and machine learning, to address the problem statement effectively, providing users with valuable insights and functionalities through the application.

### Data collection and preprocessing

Data collection involves retrieving information from various sources, such as user input in the Streamlit application, OpenAI APIs, and databases. Data preprocessing techniques are applied to ensure data quality and suitability for analysis. This includes cleaning data to remove inconsistencies and errors, encoding categorical variables for model compatibility, and performing feature engineering to create new features or transform existing ones. Numeric inputs like weight and height are checked for outliers and inconsistencies. Categorical inputs like smoking status and alcohol consumption are converted into binary values (0 or 1) to facilitate modelling.

### Recommendation system

Our app offers a recommendation system powered by OpenAI algorithm to provide personalised dietary recommendations tailored to each user's profile and daily nutrient goals taking into account user preferences, dietary restrictions, nutrient intake requirements, and health objectives. Additionally, there is integration with external Telegram Bot API service enabling functionality to send meal recipes.

### Visualisation and interpretability

Altair and Pandas are used to provide data visual representations that help users gain insights into their health status and track progress over time. For instance, nutrient intake data is visualised using bar charts to compare actual intake with daily recommended intake levels. Heatmaps are used to visualise historical nutrient intake trends over time, gain nutritional excessive and deficiencies insights and accordingly help make informed dietary decisions.

### Machine learning model

The application incorporates a machine learning model to predict users' risk of developing diabetes based on their information, health history, lifestyle choices, and dietary habits. To implement the diabetes risk prediction, the Random Forest algorithm is deployed, due to its robustness, ability to handle complex datasets, and capability to provide accurate predictions. The model is trained on data with labelled outcomes to learn patterns and relationships between input variables and diabetes risk.

Model performance is evaluated using an F1-score and confusion matrix. These metrics provide insights into the model's predictive power and generalisation ability. Hyperparameters of the random forest model are tuned using the randomised search. This involves systematically searching through a predefined grid of hyperparameters to identify the optimal combination that maximises model performance.

## 6. Tools and programming languages used

### Programming languages and tools

- Python (data analysis, AI integration and software development)

Python is the primary programming language that we used throughout the project for data preprocessing, model and web application development. We also developed some decorators to handle exceptions raised during their execution and display user-friendly error messages on the UI while logging exceptions for debugging purposes without duplicating our code.

For better scalability and future integration, we tried to follow Object Oriented Programming principles and make the app as modular as possible. Each feature is modularised in their own module, enabling future extension when necessary.

- Streamlit (front-end development)

Streamlit is employed for developing the front-end interface of the application. We decided to use Streamlit for its ease of use and the variety of supports for data applications.

- DuckDB (secure, embedded database)

We utilised DuckDB, an open-source, secure, embedded database as the backend database for our project. It is used for storing user information, meals consumed, historical nutrient records, and other relevant data.

### Machine learning libraries

- OpenAI (generative AI for recommendations)

OpenAI API (GPT 3.5) is leveraged for providing meal ingredients and their weights as well as personalised meal recommendations. The model is trained on large datasets, which makes it a good candidate for many tasks in our app involving giving personalised recommendations or extracting information from text input. This significantly improved users' experience by simplifying the steps they needed to take.

- Scikit-learn (predictive modelling)

We used the Random forest algorithm provided by Scikit-learn, a popular machine learning library, to predict users' risk of developing diabetes by analysing their BMI, smoking habits, physical activity levels, health history, and dietary habits. The trained model is then serialised using libraries like pickle to save it to disk. This allows for easy storage, retrieval, and deployment of the models within our application.

## 7. Framework adopted

### Monolith architecture

Our app utilises a monolithic architecture, where all its components—frontend (Streamlit), backend (implemented in Python and hosted on Streamlit Cloud), and database (DuckDB – an embedded database) – are tightly integrated into a single codebase and deployed as a unified entity.

While this simplifies initial development and deployment, it may pose challenges as the app grows. Modifications to one part may impact others, potentially leading to longer development cycles. Scaling the app involves scaling the entire monolith, which can be inefficient. Despite these limitations, our app's monolithic architecture allows for straightforward management and operation, making it suitable for its current scale and scope.

### RESTful API

Our app employs a modular architecture, utilising various APIs to integrate with external services like Telegram or OpenAI. Each API serves specific functions, enhancing the app's capabilities and user experience. For instance, we used Telegram API to allow users to receive personalised recipes through text messages, while the OpenAI API is utilised for extracting information from users' input.

### Continuous integration

Our app uses GitHub for source code control, enabling efficient collaboration and change tracking. Integrating CI/CD automation in the future will streamline our current development workflow, enhancing deployment efficiency.

## 8. Ethical considerations

### Privacy and data security

Acknowledging that health information is sensitive and confidential, we developed a secure login system to keep users' personal information private and ensure the protection of users' privacy and data security.

### Avoidance of misinformation

Our app uses dependable and evidence-based nutritional data sources provided by trusted sources such as the Australian Government. This ensures that the nutritional analysis and recommendations provided to users are accurate and reliable.

### Accuracy and transparency

We are committed to continuous improvement of our predictive models and recommendations to improve the accuracy of any predictions or suggestions given to our users. Transparency about data sources and algorithms used is also our top priority. Thus, we made our codebase public on [GitHub](#) and open for any auditing and contribution from the community.

## 9. Findings from the project

### Misconception of food nutrition contents

MealMinder's analysis of user-tracked meals could reveal significant variations in nutritional values based on preparation methods. For instance, an individual might find that a seemingly healthy grilled chicken salad ends up with surprisingly high sodium content due to store-bought dressing or marinades. These findings might emphasise that seemingly small ingredient substitutions or additions can have unexpected consequences.

### Connection between nutrition and chronic diseases

Extensive study has found a correlation between nutrition and the development, progression, and treatment of chronic diseases such as diabetes, cardiovascular disease, obesity, and some types of cancer. According to a study by Australian Burden of Disease, 62%, 41%, 34% and 22% to coronary heart disease, type 2 diabetes, stroke and bowel cancer respectively. Thus, understanding the intricate relationship between nutrition and chronic diseases emphasises the importance of encouraging healthy eating habits, the impact of dietary choices on health, and so, our app provides people the tools and resources they need to make informed decisions about their nutrition and overall well-being.

Additionally, it recognises that nutritional needs may vary based on individual factors such as age, gender, and underlying health conditions. Hence, personalised nutrition approaches are increasingly being adopted.

### Need for social feature and recipe sharing

The integration of sharing recipes on telegram facilitates community engagement, knowledge sharing, inspiration, peer support, and enhanced user experience within the application. It empowers users to connect with each other, discover new culinary ideas, and support each other in adopting and maintaining healthy eating habits. Social features and recipe sharing can create a supportive community within MealMinder.

# 10. Project delivery outcomes and values added

MealMinder is a web app that allows users to gain better insights into their dietary habits. The app features user-friendly interface and graphs, summarising complex nutritional data into easy-to-understand information.



Figure 1: Auto-estimating the nutrition component of the dish with just the dish name

The web app focuses on simplicity by minimising user input to ensure effortless tracking. It provides a deeper understanding of how their diet aligns with the official nutrient guidelines and offers recipe recommendations to help bridge the gap.

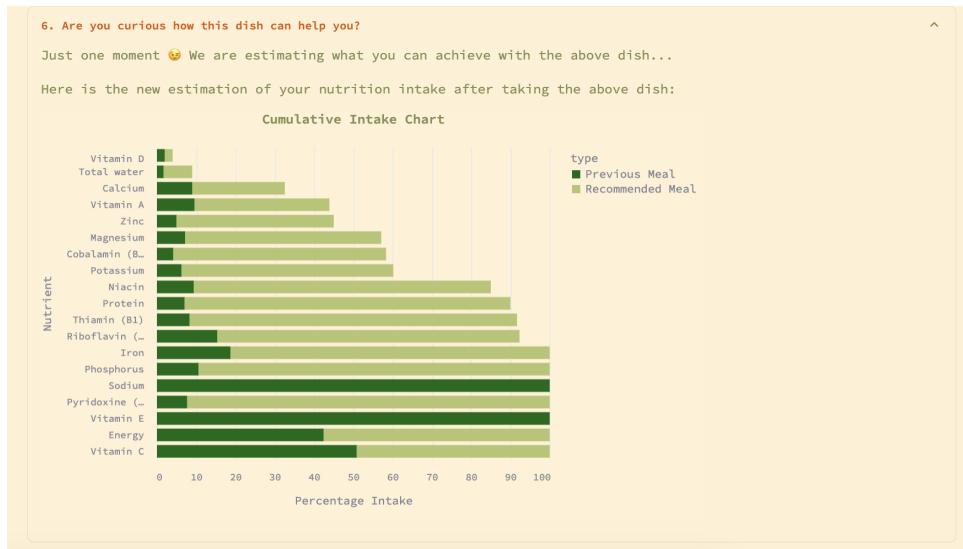


Figure 2: The stacked bar chart visualising what the user can achieve after consuming the recommended meal.

Over time, users can visualise their dietary patterns through historical tracking. This enables them to identify trends, mark dietary goals, and pinpoint areas for improvement. The app leverages user history with external health data and survey responses to provide a personalised health risk assessment, highlighting potential risk factors for diabetic conditions.

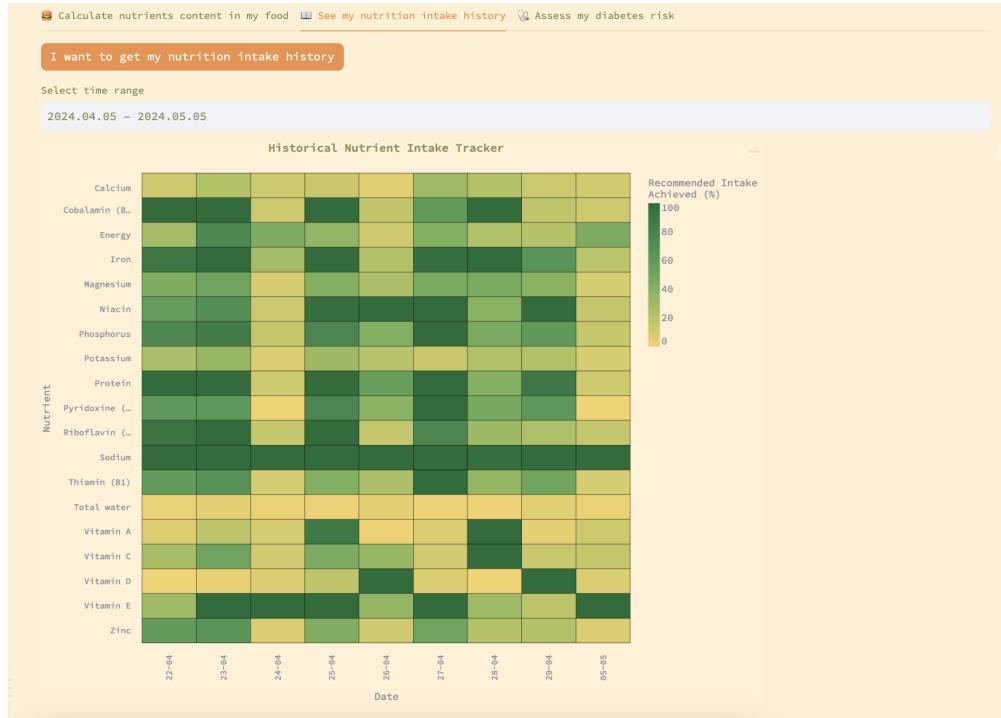


Figure 3: The heatmap showing users' historical nutrient intake. This data is accessible anytime.

Secure authentication provides a crucial layer of protection for personal data, ensuring users can focus on their health goals with confidence.

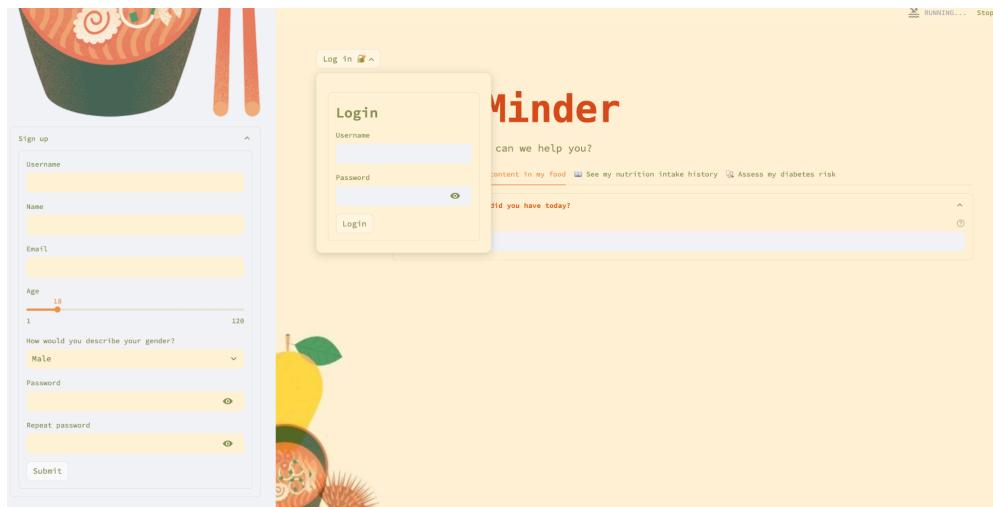


Figure 4: Users can register a new account and login at any time.

Recipe recommendations are being derived from users' missing nutrients, preferences, dietary restriction and available ingredients at home. The recommendations include detailed ingredients and cooking instructions which can be easily forwarded to the users' phone.

5. Here's a yummy recommendation for you

Here is a Japanese dish recipe that aligns with the specified nutrient amounts:

Dish Name: Teriyaki Salmon Bowl

Ingredients:

- Fresh Salmon Fillet: 200g
- Soy Sauce: 20g
- Mirin: 20g
- Sake: 20g
- Brown Sugar: 5g
- Fresh Ginger (minced): 5g
- Garlic Clove (minced): 5g
- Sesame Oil: 5g
- White Rice (cooked): 200g
- Spinach: 100g
- Carrots (julienned): 50g
- Avocado (sliced): 50g

Recipe:

1. In a bowl, mix soy sauce, mirin, sake, brown sugar, ginger, garlic, and sesame oil to make the teriyaki marinade.
2. Marinate the salmon fillet in the teriyaki sauce for 30 minutes.
3. Heat a pan over medium heat and cook the salmon for 3-4 minutes on each side until cooked through.
4. In a separate pan, sauté spinach and carrots until wilted.
5. Assemble the bowl by placing cooked rice at the bottom, followed by sautéed spinach and carrots, sliced avocado, and cooked teriyaki salmon on top.
6. Serve hot and enjoy your nutritious Teriyaki Salmon Bowl!

This dish provides a balanced blend of flavors and nutrients that meet the specified requirements. Enjoy your meal!

7. Lets send this tasty recipe to you

If this is your first time with us, please search for `@meal_minder_bot` on Telegram and say hi so that we can reach out to you 😊

Let us know your Telegram user name to receive this recipe

`tototus`

Sending you the awesome recipe 🍽 ...

✉️ Message sent successfully!

Figure 5: A personalised recommended recipe can be sent to users' Telegram accounts for their convenience.

# 11. Challenges and solutions

## Addressing ingredient mismatches and ambiguity

User input about meals can introduce errors due to ingredient variations or lack of specificity. For example, a user simply entering "chicken sandwich" leaves considerable room for interpretation regarding the type of bread, toppings, and preparation methods – all of which dramatically impact nutritional value.

**Solution:** Allow users to adjust estimations, enabling the app flexibility to accommodate their preferences for input meals.

## Streamlit execution optimisation

Streamlit's architecture can cause performance issues in apps with multiple features, as the entire app re-runs with each user interaction.

**Solution:** We employed caching techniques to strategically store frequently used data within the app. This avoids unnecessary computations, significantly boosting performance and ensuring a smoother user experience.

## Expanding the ingredients database

The huge variety of global cuisines makes it difficult to ensure the app's nutritional database covers all dishes.

**Solutions:** Open-AI API handles a wide variety of cuisines and can estimate the ingredients within a dish. The app design allows users to add new ingredients and review them before being calculated as nutrients. However, there is still a lack of information on some ingredient's nutritional contents hence our persistent problem of expanding the nutritional database.

## Collaborative code management

In a project like MealMinder, there are multiple contributors where ensuring seamless code collaboration is crucial. Without robust tools, there are risks of conflicts, overwrites, and difficulties in tracking changes.

### **Solution:**

- Version Control System (VCS): we implemented a centralised VCS like Git to manage code changes, track revisions, and enable efficient branching and merging. This simplified our collaboration and enabled safe modifications.
- Defined workflow: we established clear guidelines on branching, code reviews, and merge requests to maintain code quality and minimise conflicts.

## 12. Recommendations and next steps

### Gamification

Explore the implementation of gamification techniques (e.g., progress tracking, achievement badges, personalised challenges) to enhance user retention. This can make the app more interactive and engaging, which ultimately promotes healthy habits in a fun and intuitive way.

### Community building and knowledge sharing

Utilise social networks to enable recipe sharing, discussions, community support, and the exchange of health-focused content. Furthermore, with the contribution of the big open-source community, our app's functionalities can be substantially extended. This enhances user loyalty by positioning MealMinder as a central hub in the health and wellness space.

### Wearable device integration

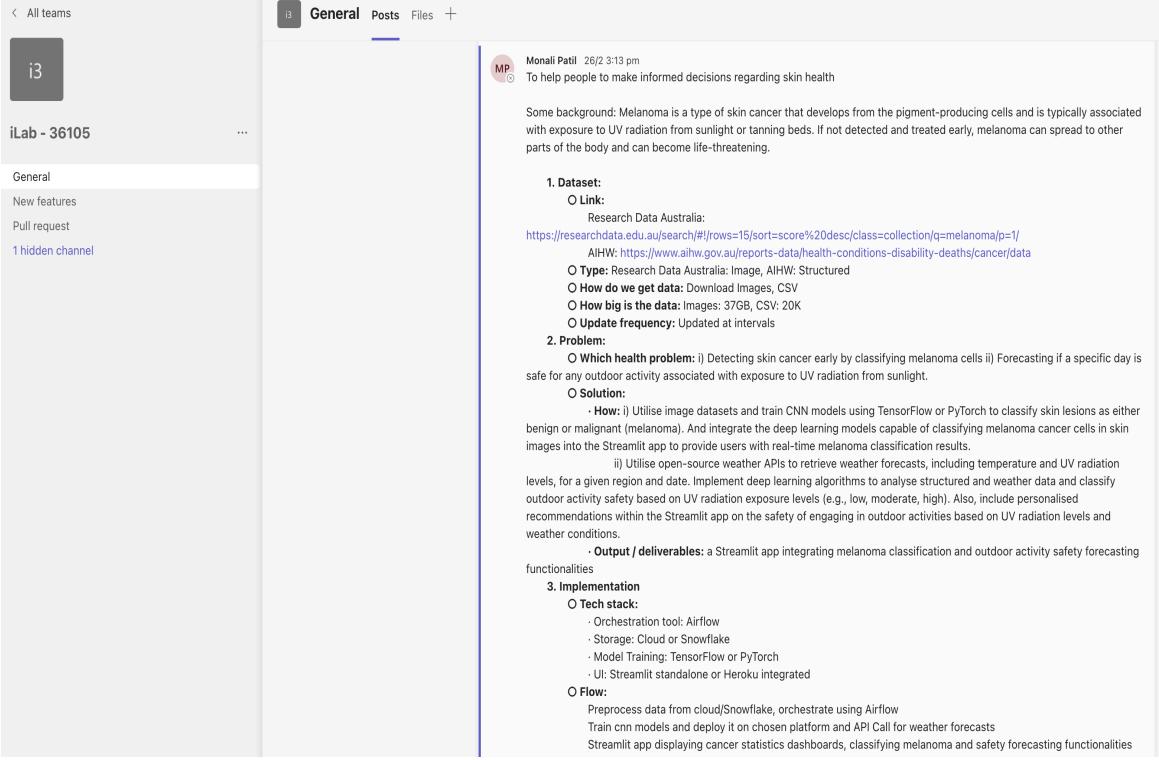
Wearable devices have become popular, which is a big opportunity for Meal Minder to approach a much bigger customer base. Therefore, collaborating with key players in the wearable technology industry to enable data synchronisation to provide a more holistic view of users' health is one of the next initiatives we plan to make.

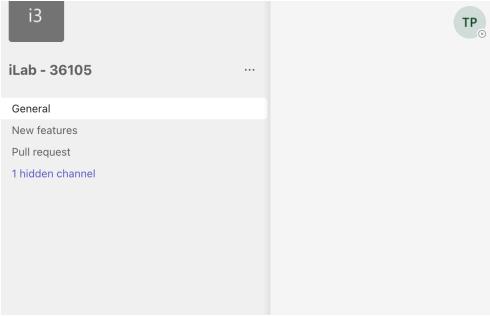
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# Monali's Project Contribution

To achieve project objectives, learn and enhance my skills, I actively participated in every stage of the project from finalising the project to integrating the nutritional data and OPENAI API with a personalised recommendation feature, building a recipe recommendation module based on user input, dietary restrictions, developing visualisation graph for it, exploring streamlit interface options, preparing pitch and presentation, and writing a report detailed below.

Ideation	I investigated a few different choices that were relevant to the subject's problem description, brainstormed these solutions, and ultimately settled on the Mealminder concept.
	
Generative AI API	Collaborated with a team member to create a function that invokes the OpenAI API. I successfully integrated it into our app, which extracts user input, generates customised recommendations, and estimates nutrition content.



Thi Minh Tu Pham 15/3 11:56 am  
**Any meeting today?**

Hi General, today is the deadline for a bunch of tasks 😊  
 Do we meet today to get updated on the project and discuss any issues with combining our tasks in the main app?

[Collapse all](#)

Anika Chauhan 15/3 3:34 pm  
 AC Hi Tu  
 I can't meet today due to an event, but I'll be collaborating with Monali for the prompt 3 code which should be ready by tonight

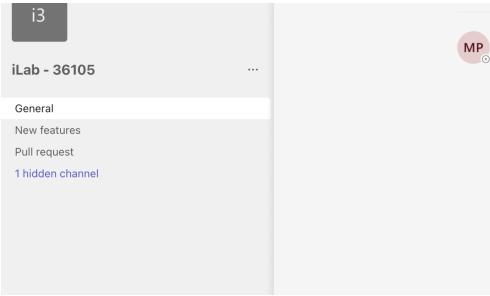
Thi Minh Tu Pham 15/3 6:11 pm  
 TP Me and Monali will meet at 8pm for a quick call. Feel free to join if you can make it but this is optional

Scheduled a meeting

**Catchup on the project**  
 Friday, 15 March 2024 @ 8:00 pm

**Catchup on the project started**

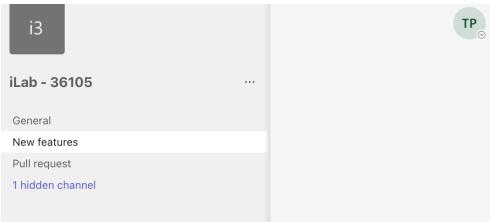
<p>Recipe recommendation and Compare user's nutrient intake vs recommended intake</p>	<p>Explored a suitable method with a team member to integrate with external data contained in our database to compare and display a bar chart indicating nutrient intake acquired from daily recommended nutrient intake, which is determined as a percentage.</p> <p>I effectively build a recipe recommendation feature based on users' input of culinary preferences, dietary restrictions, and prior outstanding nutrients intake/values, enhancing user engagement by around 50%.</p>
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Monali Patil 15/3 10:02 pm  
**Dish Recommendation**

Hi Everyone, I have pushed the dish recommendation to branch [https://github.com/phamthiminhtu/iLab/tree/dish\\_recommendation](https://github.com/phamthiminhtu/iLab/tree/dish_recommendation)  
 Please review it. It looks like this:





Thi Minh Tu Pham 6/4 2:59 pm Edited  
**What left to be done - 20240406**

- Authentication
  - Register + login + logout Nyan Peing Htun - Due day: 7th April, Pair Michael Yaputra
  - Forget password: SKIPPED because of its complication
- Authentication: add login/ register message for tab 1 and 2
  - The current 1 meal nutrition + historical data
- Enable users to manually adjust ingredients' weights - Due day: 7th April Michael Yaputra
- Get dish recommender to work Monali
  - Monali returns ingredients + weights + recipe - Due day: before Mon 8th
    - Monali will do the calculation - Due day: 14th April
- Calculate the nutrition after suggesting recommended dish
- Restructure the layout for the UI Yuquan Liew - Due day: 14th April

```
monalipatil@Monalis-MacBook-Pro ilab % git push origin feature/dish_recommend
Enumerating objects: 17, done.
Counting objects: 100% (17/17), done.
Delta compression using up to 12 threads
Compressing objects: 100% (8/8), done.
Writing objects: 100% (9/9), 8.50 KiB | 1.21 MiB/s, done.
Total 9 (delta 7), reused 1 (delta 1), pack-reused 0
remote: Resolving deltas: 100% (7/7), completed with 7 local objects.
To github.com:phamthiminhtu/ilab.git
  0281233..4e7ee46  feature/dish_recommend -> feature/dish_recommend
monalipatil@Monalis-MacBook-Pro ilab %
```

```
monalipatil@Monalis-MacBook-Pro ilab % git commit -m "Dish recommendation and nutrients calculation after recommendation"
[feature/dish_recommend cc17a7a] Dish recommendation and nutrients calculation after recommendation
  Committer: Monali Patil <monalipatil@Monalis-MacBook-Pro.local>
  Your name and email address were configured automatically based
  on your username and hostname. Please check that they are accurate.
  You can suppress this message by setting them explicitly:

    git config --global user.name "Your Name"
    git config --global user.email you@example.com

After doing this, you may fix the identity used for this commit with:

  git commit --amend --reset-author

  7 files changed, 132 insertions(+), 109 deletions(-)
monalipatil@Monalis-MacBook-Pro ilab %
monalipatil@Monalis-MacBook-Pro ilab % git push origin feature/dish_recommend
Enumerating objects: 21, done.
Counting objects: 100% (21/21), done.
Delta compression using up to 12 threads
Compressing objects: 100% (11/11), done.
Writing objects: 100% (11/11), 5.28 KiB | 1.06 MiB/s, done.
Total 11 (delta 9), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (9/9), completed with 9 local objects.
To github.com:phamthiminhtu/ilab.git
  4e7ee46..cc17a7a  feature/dish_recommend -> feature/dish_recommend
monalipatil@Monalis-MacBook-Pro ilab % git status
On branch feature/dish_recommend
nothing to commit, working tree clean
monalipatil@Monalis-MacBook-Pro ilab %
```

## Visualisation

I integrated the nutritional intakes from consumed and recommended meal with the visualisation function to display a cumulative nutrient graph.

8 April 2024

Monali Patil 7/4 10:42 pm Reviewing Pull Request (Visualisation, Login and Dish recommendation)  
Hi General, Could we have a call tomorrow morning (anytime before 12:30 PM) to review the latest pull requests. Please lets do to together so we can discuss through, consolidate it and get it ready for the demo.

Monali Patil 13/4 6:34 pm Hey, Tu Let me give it a try. Thanks!!

Anika Chauhan 14/4 2:48 pm Hi **Monali Patil** **Thi Minh Tu Pham** which is the latest branch for the dish recommender code? Is it the feature/dish\_recommend?

I need to make the stacked chart

Monali Patil 14/4 3:13 pm Edited Hey **Anika Chauhan** I pushed it to the feature/dish\_recommend yesterday while working but its not latest. I'll upload the latest once I finish working by eod today. In between stacked chart you mean chart from second tab - Historical tracked?

Anika Chauhan 14/4 3:14 pm No the stacked chart is on the first page. After the dish is recommended

Monali Patil 14/4 3:16 pm There is some confusion. I worked on it.

Anika Chauhan 14/4 3:17 pm We discussed it in the last meeting no? that I will be doing the visualizations

Monali Patil 14/4 3:24 pm I have done the calculations as discussed and reused the same earlier (users\_recommended\_intake\_chart)function to show the bar graph after dish recommendation. If you want, you may write another function for this visualisation.

Michael Yaputra 14/4 3:57 pm Edited Hi Monali, yes you're right, Anika is writing another function for the visualisation, you just need to provide the calculation output to her

She is working on 2 graphs in tab#1 and 1 graph in tab #2

See more

1

Edited

I believe she is asking for the latest version so she can test out her chart using your output from dish recommendation

Monali Patil 14/4 5:02 pm Hey **Anika Chauhan** I'll push the latest in some time.

## User interface

Explored different interface designs for our app and collaborated with team to finalise and organise the streamlit app.

Michael Yaputra 20/3 4:08 pm Edited Front end design  
Hi Team General,

Maybe we can start putting some thoughts into how the UI is going to look like? If possible, I think we should update our UI before next week's presentation with Ardy. I played around a little bit with UI but design is not exactly my strong suit haha.

See more

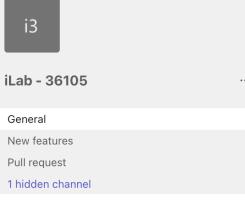
App Gallery - Streamlit  
Streamlit is an open-source Python framework for machine learning and data science teams. Create interactive data apps in minutes.  
streamlit.io

1

Collapse all

See previous replies

Monali Patil 20/3 5:48 pm This gallery is nice. There are some cool designs we can use or take inspiration. Hi **Michael Yaputra** the above looks uncluttered, stylish but background is dark. We can use the same layout and change it to some subtle colour. I will try to search some ideas for design.



Thi Minh Tu Pham 22/3 8:21 pm Edited

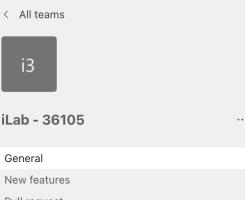
**To discuss**

Drafting a few bullet points to discuss in our next meeting:

- High priority:
  - Fix the full page reloading bug
    - Short term: putting everything in form @Tu @Monali @Nyan
    - Long term
  - Merge what we are having and resolve conflicts
    - Improve the UI
    - Authentication flow
    - Decide the flow to recalculating nutrition after recommending dish
    - Get the customized date record from user for historical data @Tu

**Pitch, Presentation & Report**

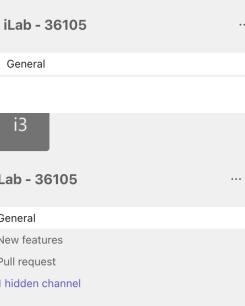
I collected and shared notes from regular meetings with mentor, prepared pitch, and its presentation. In the report, I wrote the technical aspects, namely “Data Science methods and techniques”, “Tools and programming language used”. Also addressed “Ethical Consideration” and contributed to other sections.



Monali Patil 11/3 7:13 pm

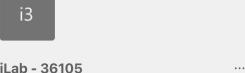
Hey guys, below are pointers for the Final Presentation suggested by Ardalan:

1. Problem statement
2. Our team
3. Objective
4. Data
5. Process
6. Solution
7. Demonstration



Monali Patil 18/3 11:26 am

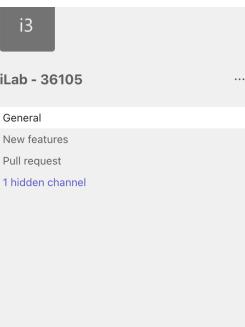
Hey Tu, I checked the comments and we will discuss it in the class today and merge it for the demo. Hi Nyan Paing Htun I will help with the demo.



Monali Patil 18/3 8:06 pm

**18th March: Today's Discussion with Ardalan and Suggestion**

- Name of the App is good and title slide is nice.
- PPT Background -> follow the white background (White for app)
- Background slide
- Skeleton of the slide should be done.
- Add Team background photo, skills
- Target Audience slide -> corporation slide then add. Tailor according to the audiences.
- Demonstration
- Use cases
- Future directions



Monali Patil 8/4 9:08 am

**Today's (8th April) Session with Ardy**

Hi General,

For today's session Ardy wants us to do a mini presentation -> 5 slides (1 minute each) and go through Idea, the background, potential data, outcomes to achieve.

[See less](#)

[Collapse all](#)

Thi Minh Tu Pham 8/4 9:14 am Edited

Monali Patil 8/4 9:27 am Edited

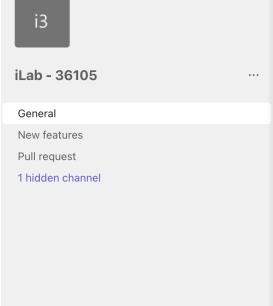
He mentions in his mail about the sessions and he has mentioned above points for today.

Nyan Paing Htun 8/4 11:34 am

Which email did he mention the slides Monali?

Monali Patil 8/4 4:02 pm

Hey Tyler, its in the 8th April evening, same mail for today session.



18 April 2024

Monali Patil 18/4 6:36 pm

**Project Pitch**

Hi General, for the upcoming Pitch session scheduled on 22-April, I have put together the presentation slides and drafted a script to help us in structuring our pitch effectively. Feel free to review and modify the contents.

Pitch Presentation: [https://docs.google.com/presentation/d/1hhohT1GBbgRYNzKH8CqYktxi5AUJMFvA\\_f9pY2xeIQs/edit#slide=id.g2ca0ccc955\\_0\\_0](https://docs.google.com/presentation/d/1hhohT1GBbgRYNzKH8CqYktxi5AUJMFvA_f9pY2xeIQs/edit#slide=id.g2ca0ccc955_0_0)

Pitch Script: <https://docs.google.com/document/d/1H5iBSQyQT8HnaSmn2wpWh9nhbdr5wr14VdhtLHxiHs/edit#heading=h.77g2yftocial>

Topics to cover in the Pitch:

- Introduction
- Problem Statement and Solution
- App Features
- Tools and Technology
- Market Opportunity and Conclusion
- Q&A
- Thank you

## Proposed structure

**Report: length: 13-16 pages**

- Background context
  - 1.5 page
  - PIC: ?
- Project Objectives and Scope
  - 1.5 page
  - PIC: Tyler
- Data Description
  - 1 page
  - PIC: Tu
- Data Science methods and techniques
  - 2 pages
  - PIC: Monali
- Tools and/or programming languages used
  - 0.5 page
  - PIC: Monali
- Framework adopted and ethical considerations
  - 1.5 pages
  - PIC: Monali, Tu
- Findings from the project
  - 1 page
  - PIC: Tu, Monali
- Project delivery outcomes and value added
  - 2 pages
  - PIC: Monali, Tyler
- Challenges and solutions
  - 1.5 pages
  - PIC: Tyler
- Recommendations and next steps
  - 1.5 pages
  - PIC: ?
- Appendix (for code, visualisations, and other material requiring an extended number of pages)

**Personal Contribution** (approx 250 words) + Evidence

Overall, my contributions to the project enhanced the functionality and user experience of our Mealminder app. I gained significant experience in building an AI-powered health-aligned product and collaborating effectively with a multiskilled team.