Data collection

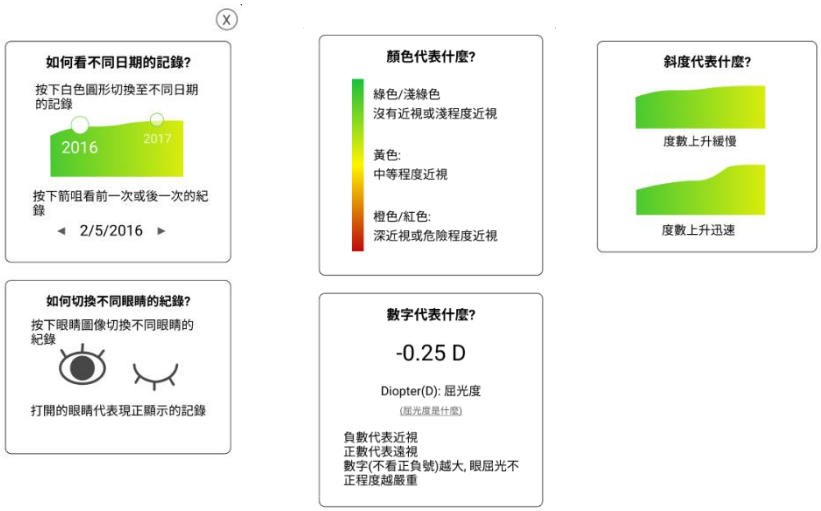
Normal users:

This function help users record their eye check-up record so that they can have a long-term record of their eye health. This function also explains their eye check-up record with text and an area chart.

Components:

1. Tutorial page
2. View control
3. Area chart
4. Explanation
5. Detailed prescription and eyeglasses prescription
6. Data input

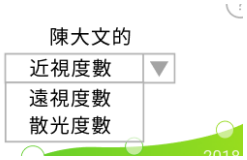
1. Tutorial page



This tutorial teaches users how to use this function, like how to view record from a different page and how to read the area chart.

2. View control

- Drop down menu



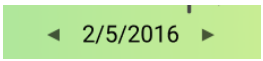
Users can choose to view record of myopia, hyperopia and astigmatism

- Eyes Button


Users can click on the eyes to view record of another eye. If left eye is open, the screen is currently showing the record of left eye, and vice versa.

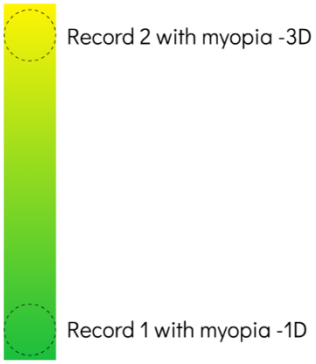
- Date switch

Users can either click on the white circle or the arrow sign to view record from a different time. The non-transparent white circle is the currently selected date.



3. Area chart:

- The colour



The colour of the area chart encodes the degree of refractive error with a continuous colour scale (Table 2.1a-c).

The area in between two records is filled with a gradient.

Judging from how rapid the colour change from record to record, users can understand their refractive error progression.

(Table 2.1a)

Condition	**Range (Spherical)**	**Colour range**
No to low myopia	-0.00D to -3.00D	#00CA51 to #FFF503
Moderate Myopia	-3.25D to -5.75D	#FFF503 to #FF5D02
High Myopia	Above -6.00D	#FF5D02 to #C40205

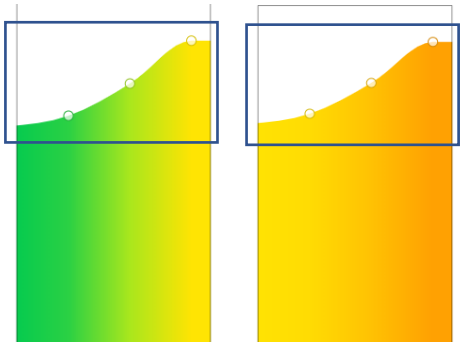
(Table 2.1b)

Condition	**Range (Spherical)**	**Colour range**
No to low hyperopia	0.00D to +2.00D	#00CA51 to #FFF503
Moderate hyperopia	+2.25D to +5.00D	#FFF503 to #FF5D02
High hyperopia	Above +5.25D	#FF5D02 to #C40205

(Table 2.1c)

Condition	Range (Absolute cylinder error)	Colour range
No to low astigmatism	0.00D to 0.75D	#00CA51 to #FFF503
Moderate astigmatism	1.00D to 1.75D	#FFF503 to #FF5D02
High astigmatism	Above 2.00D	#FF5D02 to #C40205

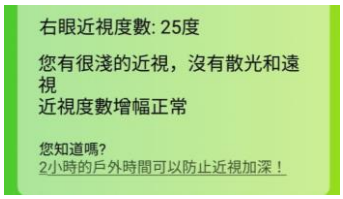
- The slope
  This graph is not decided to read exact prescription but to view the overall trend and the change of prescription from record to record. The slop is of relative scale. The minimum and maximum point depends on the range of user-input records.



The curve on the left has a range from 0 to 2. The curve on the right has a range from 2 to 4. If the rate of change between every record is the same, the slope and position of the graph will be the same and within a fixed area of the screen.

By combining colour and curve, users can understand the seriousness and the progression rate of their refractive error from this area chart at a glance.

4. Explanation



The explanation mainly explains the degree, seriousness and progression of refractive error with short sentences.

Based on the current situation, it will provide a link to a related article which encourages users to prevent or slow down refractive error progression or informs the risk of high refractive error.

5. Detailed prescription and eyeglasses prescription

- Detailed prescription

This function is designed for users who want to view the original prescription. They can also use this function if they want professionals to view their record when they are doing eye check-up.

- Eyeglasses prescription

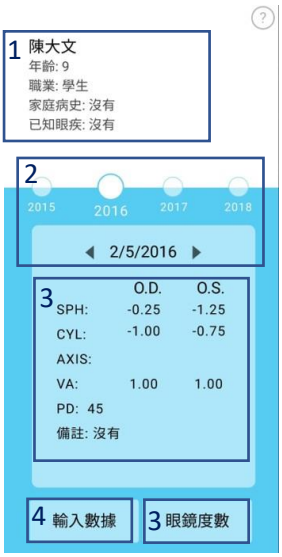
Users can view their eyeglasses prescription and the usage time.

6. Data input

Users can input their prescription data here. A remark field is added to increase the flexibility. It can be used to as a reminder or a comment.

Professional users:

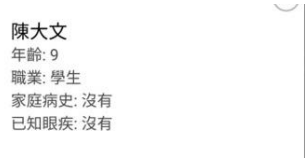
This function helps professionals build a long-term record of their customers. They can then make a more comprehensive analysis of the eye condition of their customers.



Components:

1. Personal information
2. View control
3. Detailed prescription and eyeglasses prescription
4. Data input

1. Personal information



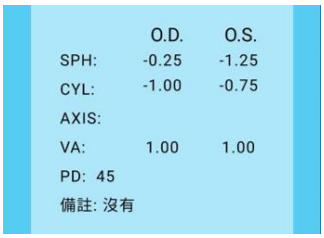
The information include name, age, occupation, family medical history of eye disease (if any) and known eye disease (if any). This information can help professionals make a more comprehensive analysis. Age and occupation change the interpretation of the record. There are more than 350 hereditary eye diseases, by listing the family medical history, it can alert professionals to pay attention to early symptoms of the disease, inform customers of the potential risk and the prevention measures.

2. View control

Users can either click on the white circle or the arrow sign to view record from a different time. The non-transparent white circle is the currently selected date.

3. Detailed prescription and eyeglasses prescription

- Detailed prescription



The prescription follows the notation used by professionals.

- Eyeglasses prescription

Users can view the eyeglasses prescription and the usage time of their customers.

4. Data input

Users can help their customers input data which will be updated to normal users' account. Remarks provide flexibility to professionals to input additional information.

Ask a professional

"Ask a professional" is a function for normal users to ask professionals questions and get advice from them. They can also view other users' questions and the corresponding response from professionals.

- First page

Users can view other users' questions here. They can click on the question to view the response from professionals.

- View response

Users can view the profile (name and qualification) of the professionals and their response here.

- Write a question

Users can write their own questions here. They need to fill in the title and the content of their questions here. If the users want, they can disclose their eye check up record to professionals to provide additional information for them to answer their questions. As the response will be posted publicly in the application, a disclaimer is showed to warn users not to put any sensitive or personal information in their questions.

Feedback

We have contacted Mr. Dick Lo, an optometrist, with WhatsApp call on April 4th. The feedbacks collected are as follows:

Data recording and presentation:

- Data recording convention for opticians starts from right eye's data. It is advised to follow this convention in both professional and normal users' side.
- The graph is not meaningful to professionals, as they are used to looking at numbers. However, it is useful for normal users to understand.
- Apart from recording and presenting the degree of refractive error in diopter, visual acuity should also be recorded.
- One mistake was pointed out in the figma prototype where it states that 0.25D means no myopia. It should be explained as mild myopia.
- Threshold on defining abnormality in the rate of increase in refractive error was suggested, >0.75 increase per 6-month for kids under 12, >0.5 increase per 6-month for adults.
- It was advised to control myopia progression within 0.5D per year.

Response:

We agreed to follow the data recording convention and his guidelines. We will correct the error in data explanation. We will advise our users to control myopia progression within 0.5D. We will remove the graph for professional's side, instead, we will display detailed records of users for professionals.

Education:

- Self-eye test minigame: It would be better to randomize the answers which could make it more interesting as a game.
- Eye exercises: It is suggested that we shall include focus shifting exercises as well. To illustrate, it is an exercise to look at distant objects for 20 seconds, followed by repeating the step with nearby objects.
- Professional Articles: Instead of having a direct, real-time inbox function. Mr. Dick would like to have a forum like platform to collect questions from ordinary users and answer them in a week's time. He also mentioned that totally 3 opticians could help on this part.
- Achievement: In order to motivate our users, Mr. Lo is willing to provide 100 digital coupons which is giving out free lens for each coupon.

Response:

We will try to implement Mr. Lo's suggestions on our apps like randomising the game answers and including focus shifting exercises. For professional articles, we will develop more detailed workflow and prototype to showcase the interaction process between the professional and ordinary users' side. For instance, we shall collect and filter users' questions at the beginning. Then we shall transfer some filtered questions to professional side. We shall be able to post both the questions and answers on the forum in a week's time. For achievement part, since we now have granted the support from Mr. Lo. We shall come up with a detailed achievements list soon to make sure we spend the coupons wisely.

General advice:

- It is suggested to grow our user base before we find more professional users. On finding professional users, it is suggested to approach small glasses shop owners first.

Response:

Our future apps development shall be more user-oriented in order to better promoting our apps in coming future.

We have contacted Ms. Kelly, a social worker from The Hong Kong Federation of Youth Groups, with WhatsApp call on April 24th. The feedbacks collected are as follows:

- We need to specify the content for parents from different age group as they have different needs. (For parents with kids from 3-5-year-old, they are not that aware of their kids' eye health; For 6-8-year-old, most parents start to be aware of their kids' need in glasses or other methods)
- Partnering with only 1 optometrist is not enough, parents would like to have eye doctors to support our application.
- For the "Ask a professional" part, we could include some video featuring some interviews with professionals in which they answer questions from parents.
- For the articles, it would be more relevant to local parents if we could include some information from different universities or some local news.
- Include some warnings (Red flag) after some self-assessment of children's symptoms, and warn them to take action or observe closely.

Response:

We will change our target audience to parents with kids from 6-8-year-old at the first stage, as they care about their children's eyes health and would be easier for them to accept and try our application. We will then expand our application to also target parents with kids from 3-5-year-old in the future. We will ask more professionals

(including eye doctors and optometrist) in the summer to help answer questions in the "Ask a professional' part. We will prepare more local information in the articles. We will discuss the possibility to include a "self-assessment" function in the future version of the application.

Long-term implementation plan

In the long-term, we would like to expand our target audience to include parents with kids from 3-5-year-old. We will keep on maintain and updating the application. We will find more sponsorships or donation as rewards in the achievement. In order to increase the number of users, we will promote our app on social media such as Instagram and Facebook. We will then manage these social media account by posting updates about our application and sharing eye care related news.