**Page 1:**

Hi everyone, today I’m going to introduce a program called “time turner”.

**Page 2:**

First of all, can you recall last time you hope to have superpower to manipulate time, or to have a time turner that magically turns the time forward or backward, so you can better arrange your daily routine?

For example, imagine you are playing on your phone in the night. You check the time, it’s 11 pm, and you think “it’s not very late, I can play a while longer.” And then at 12 o’clock, “still not too late, continue to play.” 1 o’clock, “emmm, a little bit late, but I still feel okay.” Same happens when it’s 2 o’clock, 3 o’clock, 4 o’clock, now you realize “oh God, it’s really late, how I hope I can turn the clock back so I can have a long night to sleep.”

Well, it’s not entirely impossible. Actually, you can just think about time as a roll film: every second, it rolls forward a little bit. All your actions and activities are like a frame on the timetable. You arrange your daily schedule according to your temporal perception, which means what you **think** is the current time, but this does not necessarily have to be the same as the real time as defined by the rest of the world. You can have a fake clock, a “time turner”, that is specifically designed to display a timetable that creates a temporal illusion.

To understand it in an easier way, still think about the previous example. If the time that you are constantly checking is the time displayed by our time turner, which is carefully designed to have a five times faster time rate when you are playing on the phone. Therefore, when you **think** you spend five hours playing on the phone, the real time only passes **one** hour. Which means, when you think “oh God, how I hope the clock jumps back” at 4 am, the real time is actually 12 o’clock, so now you can enjoy your long night’s sleep in real time. Therefore, by using our “time turner”, your wish of manipulating the time actually comes true, to some extent.

This scribble of comic also shows a second usage of our time turner, which is to manipulate the **order** of the displayed time instead of the **speed** of the time rate, so that the total length of time remains the same, but you can work in a more comfortable schedule which seemingly align with your original timetable and factually align with the timetable of the rest of the world.

**Page 3:**

The main purpose of the time turner is to help people adjust their daily routine, especially for night owls to shift their sleeping time to night-time, so that it would be easier for them to coordinate time and meetings with other people.

We conducted a user-study to test out the performance of our time turner on a typical “night owl”, and the result is visually presented in this diagram. The first black line marks the real time, the second is the original timetable before the experiment, the third is the ideal targeting timetable, and the last line is the average result of timetable during three weeks’ experiment.

We can see that the sleeping time, plotted in blue, shifts forward 4 hours, and the working hours also shift to mostly mornings and afternoons, suggesting that this “time turner” is a promising tool to help people adjust their daily routine.

We also design the tool to be highly personalized. So any user can input their own old timetable along with ideal timetable, and the time turner will automatically show a “manipulated” time. All you need to do is to really believe the time.

We hope to use this tool to help more people to live a healthy life. Thank you.