1. Describe an example of your leadership experience in which you have positively influenced others, helped resolve disputes or contributed to group efforts over time.

I remember that day vividly, waking up to the sound of my mother weeping. Turns out, my dad has been involved in a car accident, suffering eye injuries that the doctors in Indonesia recommended for his eye to be removed. However, my mom decided to take him to Singapore to get a second opinion. For half a year, this left 10-year-old me and my two younger siblings alone in Indonesia.

This descended our household into chaos.

Without someone to nag, my brother became addicted to games and my sister began to neglect her studies. Without my mom’s help in tutoring, their grades began to plummet.

Looking at the state of my household, as the eldest son in the family, I decided to take charge. Every day, I would nag my brother to limit his time playing games and nag my sister to complete her assignments.

However, all my efforts only resulted in my siblings hiding their bad habits from me.

So, I had another plan. Instead of forcefully nagging them, I chose the opposite approach: to become a good role model myself in order to motivate them to change their habits.

I began to discipline myself and studied harder. I began to use study techniques to avoid wasting time procrastinating when studying, such as the Pomodoro method where I would integrate 5 minute breaks for every 25 minutes of work.

As my siblings began to observe my diligence in studying and my use of different study methods, they began to ask me questions such as “how should I study for this subject?” and “what’s the best way to practice for this exam?”. To this end, I realized that in order to guide my siblings, I had to guide myself first. I had to become a good role model.

What was seemingly the usual eldest kid’s responsibility to lead, was able to not just help change my siblings’ study behavior, but also trained me to become a leader who leads by example. Through leading by example, I would be able to impact others through what I do.

2. Every person has a creative side, and it can be expressed in many ways: problem solving, original and innovative thinking, and artistically, to name a few. Describe how you express your creative side.

As the wires began to go up in flames and smoke began to emerge, I let out a frustrated sigh. Prototype no.13: Failure.

During the pandemic, people should avoid touching commonly-touched surfaces - one of which is door handles. However, it’s impossible for janitors to keep cleaning door handles after every touch. What if there was a device that could automatically sanitize them after every touch?

Firstly, through watching YouTube tutorials by Paul McWhorter, I designed the internal circuit. Next, I designed the chassis using CAD.

Finally, I had my first prototype. However, its large size and poor battery life made it an impractical product.

In order to make my prototype into a practical product, I had to find smaller and less power hungry components. Instead of an Arduino, I used a power efficient Attiny chip. Instead of using AA batteries, I used rechargeable lithium-ion batteries.

Unfortunately, after making these changes, nothing worked. The batteries kept short-circuiting and the tiny microcontroller was difficult to solder onto the board and program.

It’s a disaster. I wanted to give up.

After months of abandoning the project, my grandfather caught COVID-19. Seeing him in constant pain as he struggled to breathe, I remembered the reason why I started this project. Knowing that if this device could save the life of one person, all my efforts would have paid off.

Through weeks of testing and consulting an electrical engineer, I was able to pinpoint multiple faulty connections and miscalculations that caused overvoltage. After resolving those issues, the circuit began to function. With the product finished, I named it UVinci, a pun on the words UV-C and Vincent.

This project taught me that innovation is the result of failure after failure. Roadblocks are inevitable—what separates a good product from a defunct one is the willingness to work through these obstacles and find ways around them. Creating this device and seeing the potential impact it might have on actual communities gave me purpose in creating breakthroughs. I still have lots to learn and lots of obstacles to overcome, but now, I'm more ready to face them.

3. What would you say is your greatest talent or skill? How have you developed and demonstrated that talent over time?

I used to think that ads are incredibly annoying, but ironically, it was an ad that allowed me to discover my talent in programming.

However, when I was interrupted by a Udemy ad, offering me a complete Java programming masterclass for only 10 bucks, it caught my attention. I decided to take it as a challenge and purchased that course.

Following the online course, I wrote my first line of code, outputting the famous “Hello, World!”. I was completely hooked, hogging the family computer to complete the 80-hour course in 2 weeks.

After understanding the basic syntax of programming languages, I decided to explore the world of competitive programming. It was an exciting concept, competing with thousands of programmers around the world to solve a programming problem. Through multiple tutorials on YouTube and reading articles on GeeksForGeeks, I immersed myself in the different algorithms and data structures that can be used to solve problems in an efficient manner. After months of practice, I competed in Google Kickstart and placed 26th in round A and 5th nationally in round B.

A few months later, I interned at Global Prima Indotek, a plastic-injection factory. There, I observed a lack of efficiency in the quality-control department, mainly the procedure in checking product labels. I collected the time that workers spent on each step, and figured that they had to check the miniscule words on labels, the printed colors and barcodes manually.

Through my programming experience, I proposed to create an app that could automate this process. With tutorials by freecodecamp guiding me in creating this app, I learnt to use Python libraries openCV2 and Pytesseract to build the app.

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After testing out the app with the quality control team, I found that my app was able to check the content and barcodes on the product label 3.5 times faster than what the team could achieve manually. With my findings, I pitched my app to management. After getting their approval, my app was then implemented by the quality control team.