Never Falling Wheelchair

Wheelchair can sometimes fall over because of uneven road, rocks, or small objects which has caused many deaths to the users. Never Falling Wheelchair is an electronic wheelchair that can measure the balance, and a small wheel will pop out and support the wheelchair if the wheelchair tilts over and loses stability. The small wheels are built within the big wheels of the wheelchair, and they can pop out on the sides, the front, and the back. The reason why I believe this idea is viable is because the technologies in building an electronic wheelchair is already available. Most of the work will be building the support wheels and the device that can measure the balance which are possible to develop. Never Falling Wheelchair can help prevent injury and save people's lives.

Universal Writing Device

People who write on paper usually carry many writing utensils such as pencils, pens and color pens. Also, people may damage their eyesight or their posture when they sit and write for too long. Universal Writing Device is a smart pen that can connect to the smart phones, and users can control the pen through an app. The device carries three primary colors, from that, the pen can generate other colors. It also has a place to store leads, so users can use it as a pencil as well. In pencil mode, the device can tell when leads are on low or run out. Each time the users lift their hand up, the device automatically pushes lead out a little. The device can retract the tip when the users are sitting with bad postures. The reason why I believe this idea is viable because our group has five Computer Sciences students, so the programs and the app can be written easily. Universal Writing Device can give convenience and reduce the weight the users carry. It also helps prevent eyesight damage and keep good posture.

the other idea is an expand from Liam's idea, so basically the same

Heated shoes

My feet are always cold during the winter no matter how many socks I wear, it gets colder if I must leave the house for groceries. I am thinking of making a pair of shoes that heat up to whatever the temperature I desire via a remote. This design will help me personally to deal with cold feet and I am sure a lot of other people might have this same problem as me. This idea I believe is viable because it is an issue that people run into a lot during the wintertime. So, this item if succeed could help a lot of people including myself.

Laptop Case Stand

It is the 21st century and everyone uses computer and laptop, and when you bring a laptop somewhere it then must be put in a case for protection against scratches and drops. I want to make a universal size to hold laptops and be able to use it as a stand. This idea is viable because 99% of people I know uses laptop. One other reason why I wanted to make it so that you can fold it into a stand is because I am a tall guy, sometimes it feels very awkward to uses the laptop and my back does not feel very comfortable with a laptop that is very low compare to my vision.

LockDown

Although there are numerous apps to help with procrastination, none seem to help with ADHD. Most Of these have you put in a certain time for you to complete a task, but if you do not think in increments of time but rather events happening, then these are not of much use. Since putting off work happens so often, and thus I (and many others) must rush to get things done before a deadline (or not at all). Thus, I thought of an app that expands to multiple devices. You put in what you need to do and when it needs to be done. When the deadline starts to approach, you get a notification on every device the app is installed on. This notification cannot be dismissed. For the notification to be dismissed, the user must provide proof the task is completed. If the task is not completed within a certain amount of time since the notification happens, all devices the app is connected to lock down. The user can choose very few apps that may pertain to the task (if you need to send an email, the email app will not lock down for example). It will remain locked until proof of the task being completed is given.

I can already see problems/hurdles this app would face. I think it is feasible, although it may need calibration from the user, for the app to know if the task is completed. However, I thought of the idea from seeing numerous different apps and picking bits from all of them. It is possible to lock down devices. Some apps have a system where you have to verify you have done something, so there is a way for it to be achieved. Personally, this type of app would be incredibly helpful to me and many others. Having the ability to lock my devices for a period of time does not really help, as I can just wait it out. Having the devices locked until the email is sent would be more of a drive to complete the task.

Tic4Track

Managing tics can be odd. Especially if they seem to have come out of nowhere. There are lots of things that may cause someone who has a tic disorder to have an outburst of tics, but these vary person to person. If someone is talking to a medical professional, this can lead to lots of human error with people mistaking if certain things cause certain tics. There are apps where you can track tics, but you have to be the person doing all the input. That would get tedious after a while, or you run into a situation where you can not access your phone in that moment (say, a work meeting).

Having some kind of hardware that can track tics and map them on a graph would be very

helpful to both the person experiencing the tics and the medical personnel helping. This hardware would connect to an app and would show the user a graph hour by hour of how many tics the person has experienced. Additionally, instead of the person inputting tic occurrences, instead the user would input probable causes of tics. If the user just drank caffeine, they would input that. If the person is not sleeping well, if at all, that would be inputted. This way, if larger occurrences of tics seemed to happen after these inputted causes, then you would have the data to prove it. However, there are hurdles. First, there are motor and vocal tics. Some tics are far more complex than others. The device would have to be comfortable and come in multiple parts as different parts of the body can experience a spasm (For example, wristbands could track forearm tics). Having the device only pick-up small sounds and not outside noise would be a challenge. Like product 1, this one would likely need calibrating to normal movements of the user. Given that this would be a medical product, a professional could help with this.

Overseer

Ever since Zoom classes, I have noticed a lot of students talk about how hard it is to stay consistently focused on a screen for large periods of time. I have seen lots of apps that try and get you to take breaks looking at a screen, but these mainly use timers. When you drift off, usually you do not realize it is happening. I thought of an app that tracks facial movements, primarily your eyes. If it catches your eyes drifting off, it will send you a notification (this can be both on a desktop and your phone). If it happens more than once, it can suggest taking a break to refocus your brain. The app can also give small tips on how to concentrate and take notes.

Eye tracking has been used before; this is just applying it to another field. One hurdle I already see is it being able to tell when you are looking down to look at your phone versus looking down to take notes. However, this could be overcome. Being able to get reminders from an app to look back at the screen if I find myself dozing off while either reading an assignment or watching a lecture would be a big help.

Fish tank monitor with alert system-

Fish tanks need constant care, and the littlest thing such as filter stops, heater dies, water level too low, or quality levels out of balance can kill your fish and cost hundreds or even thousands of dollars to replace. My idea is a fish tank monitor that checks your water temp, water level, flow rate of filter, and

water quality and not only displays on a monitor on tank but will send you alerts to your smart phone through Wi-Fi if something enters a dangerous level or there is a tank failure.There are some monitors you can find on the internet that monitor basic things like temp and water quality, but I have seen any that also monitor the water level and the filter flow nor do they communicate to you through a smart device.

Smart parking garage ticket dispenser direct replacement-

Nobody likes parking in a parking garage and trying to find a space, or even hoping that the garage is not full. My idea is a smart dispenser that asks if you need handicap, small car, or large car or truck parking, and keeps track of what spots are available and auto assigns one to you based on this query. It also prints a QR code on the ticket that you can scan with a smart phone and it will keep track of where you parked so you don't forget or spend a ton of time trying to locate your vehicle. There are smart garages out there, but they are new built and are completely redesigned to cover this and are extremely expensive to build from the ground up. My idea is for a direct replacement to current ticket dispensers that will allow low-cost upgrades for garage owners, and ease of use for the drivers

Home garage parking assist-

Everyone likes to park in a garage however not everyone is good at parking straight or judging if they are in far enough or too far. My product would identify when someone is pulling into the garage, and if it is a multiple car garage, which side is pulling in and assist in guiding them straight into the spot using arrows on a small monitor on the wall tied into proximity sensors located on the sides of garage, along with a floor sensor or proximity sensor to alert them when to stop so they are parked perfectly.People are still using tricks like a tennis ball to tell when to stop, and with IoT I think that it is time to bring this low tech option into the future with a better designed option that helps keep your garage looking nice, while still providing a function that doesn't scream "I'm a horrible at parking".