

a) List the various sensors and devices on typical mobile phones.

- GPS
- Thumb scanner
- Camera (front and back)
- Accelerometer
- Gyroscope
- Moisture sensor
- Microphone
- Display and touch screen
- Interfaces, network, 4G, 5G
- If counted as a device, CPU, GPU, RAM, charging port

b) List five of your favorite apps. Briefly describe what they do and what makes them so great.

1. Coinbase wallet. Compared to other trading platforms, Coinbase wallet is quick and responsive. On top of that, private information is stored in a decentralized fashion, meaning it also delivers ownership back to users of the system. When compared to the vanilla Coinbase app, Coinbase wallet is a huge step in the right direction.
2. Strava. The application UI is really nice, and fits the target market very well. Athletes looking to track their steps, mileage, and pace get access to detailed information which they can share with their friends and family.
3. Terraria. While I don't game very much nowadays, and seldom find myself playing phone games, Terraria is an amazing phone game. They've condensed the PC controls (which are already fairly complex) into a simple, user-friendly interface which provides phone gamers with a pleasant, fun, and explorative experience.
4. Postmates/UberEats. While I'm not going to put these as my first picks, I find that when I use an app like GrubHub, I'm in pain when I try to do something as it constantly takes me back to the homepage. Even if I sometimes have bad experiences with drivers, and some other small problems, seeing just how annoying other delivery apps are makes me like these options better.
5. Discover. Similar to the last point, it's not just that I love this app, but also, when compared to others out there, Discover in my opinion is king. It's sleek, easy to use UI, and the backend is configured very nicely. I never have to log back in, the application is quick, and on the frontend I never find myself having to search for where I need to go.

c) Identify an App you use often, but you wish were better, (eg., - Uber, Lyft, Venmo, Indeed, etc.) Identify the pros and cons of each, and what features are great, but could be improved, what features are missing. For the latter two items, describe with some detail how you would implement these features and what technology might be used to implement these missing features. Be ready to present to the class.

Probably no one has heard of this application before, but it's one that I use often because I frequently turn on my smart-LED system at home. The app is called Lotus Lantern, and I have a few things that I really like about it, and a few other things I really don't like about it.

Pros: the app is almost completely functional - what I mean is that the buttons will eventually all work if you wait long enough. You can change the color of the LEDs, and dim the lights as you wish. If you need to add another device, you can do this as well.

Cons: the app UI does not look very good, and the setup takes forever. While on other smart LED applications I'm able to open the app and turn the device on immediately, it takes a minute or two for the app to connect, and even when it does, you have to turn the device on and off twice or more in order to just operate the LEDs. I've decided to just tolerate the annoyance, but in the future I'm definitely going to be discouraged from buying the same set again.