1. **Give three examples of life-critical applications.**

* Automotive. Working on a project with a vehicle manufacturer, or any of their suppliers? Recruited out of university by a self-driving car startup? Automatic braking, cruise control, lane control, computer vision, obstacle recognition, electronic engine control modules, etc. Every one of these is a life-critical system, where a failure can be fatal.
* Aviation. When you’re 30,000’ in the air, almost any system failure can be life-critical. Considering recent events with the Boeing 737 MAX, there are the obvious life-critical systems of autopilot and computerized flight control, but there are also a lot of things you may not think about. At home, if the fan in your HVAC system fails and produces a bit of smoke, you open the window or step outside for some fresh air. Have you ever tried opening the window and stepping outside during a trans-Atlantic flight? Even the most basic of systems, from the power outlets in the galley to the brakes on the wheels of the drink cart, can be life-critical on aircraft.
* Communications. Most developers or engineers will, at some point in their careers, work on a communications system project in one capacity or another. To many people, telecommunications don’t initially seem life-critical; after all, civilization fared just fine before telephones and the internet. As someone who has deployed to disaster zones where telecommunications infrastructure has been destroyed, let me tell you what actually happens: people become very ill or injured and can’t call 911; elderly residents can’t call their kids to ask them to pick up their prescriptions from the pharmacy; emergency responders can’t communicate with their dispatchers or with each other; and people who can’t contact their family members become concerned and put themselves in extremely dangerous situations to try to find them. Communications systems are absolutely life-critical.

1. **Suppose you are on the design team for a new e-book reader. What are the primary classes and methods that the Python software for your reader will need? You should include an inheritance diagram for this code but you do not need to write any actual code. Your software architecture should at least include ways for customers to buy new books, view their list of purchased books, and read their purchased books.  The example for a transportation program below should reflect how your visual should look.**

