Data Structures Week 2 - OOP

## Three examples of life-critical applications:

1. Severe storm tracking software and alert system.

- Need a live stream of radar information.

- Need a connection to the web and cellular lines to communicate alerts to citizens.

- Need to run on a CDN so that it is not reliant on local infrastructure in case a storm knocks that out.

- Potential areas of failure could be in a state like Indiana where time zones and Daylight Savings Time and Standard Time are not always consistent.

1. Power grid monitoring software.

- Need an API that tracks uptime in the power grid throughout a given region.

- Need connection to the web and cellular lines to communicate alerts to citizens.

- Need to run on a CDN so that is not reliant on local infrastructure in case a power failure takes down the server.

- Potential areas of failure are the CDN going down during a storm that also knocks out local power.

1. Vaccine distribution monitoring software.

- Need real time data stream of vaccine volume per municipality.

- Need access to a geolocation API to display concentration of vaccines in a given area.

- Potential areas of failure could come in municipalities that have a high volume of vaccines early in the day and then discard them if the vaccines are not used, and then do not update the data feed.

## E-book reader software considerations:

### Classes to consider:

* Class FullBookList
* Class CheckoutForm
* Class Book
  + Class Non-Fiction
  + Class Fiction

### Methods to consider:

* page\_turn()
* mark\_reading\_position()
* mark\_completed()
* process\_payment()
* mark\_recent\_purchase()
* show\_all\_books()

