(20 pts – 3 hours) Trillllllllium II! Come up with a potential application that you personally think would be interesting for the Trillium problem as a way to start the design team brainstorming.

SmarTrays are cafeteria trays that include 'Microsoft Surface'-like touch screens directly on their surface. When items are placed on this tray, the SmarTray detects them, processes what type of item it is and highlights this item according to the color of the correct bin it belongs in at disposal (recycle, waste, or compost). These trays also provide interactive information about the different disposal processes. For instance, if a user had a bottle of tea, the tray would highlight the circumference of the bottle in green for recycled bottles, and include a blurb of which recycle location it will end up as well as an interesting fact about what can be made from recycled bottles. The goal of SmarTrays is to ensure that users are making informed decisions about their trash disposals and are aware of the impact they make at disposal time. Although Trillium currently contains an elaborate, color coded, multi-container disposal area, students short on time may be in too much of a rush to utilize this area correctly. The current visual examples of what belongs in each bin (signs posted above each receptacle) could be overlooked since Trillium-goers are well on their way out by the time they reach the disposal area and toss out their trash.

The decision to put the disposal information on SmarTrays utilizes the observation that meal times are when users sit down and relax for a while, despite how busy they might be in the day. Typical Trillium-goers either meet up and eat with friends, or sit down alone. “Sit down alone” users are the high targets for SmarTrays. Lee Humphrey’s “Cellphones in public: social interactions in a wireless era” shows how solo individuals in public spaces suffer from “Single’s vulnerabilities”, meaning they feel socially vulnerable when alone in social situations. To counter this vulnerability, solo Trillium-goers immerse themselves in newspapers, homework, cell phones or any other kind of media, as long as they look busy with something. Information provided directly on the tray targets this exact behavior by being available precisely when the user needs something to read in order to not feel socially vulnerable. During a meal, a user will be thoroughly educated in the ways of their trash, learn about the impact of where each piece goes, and feel motivated to take action and throw items in the correct receptacles when it comes time to leave (all while appearing busy and not awkwardly eating alone!).

Potential problems could be how cluttered the SmarTray screen might look if a user places too many items on the tray. The set up of the interface would be a challenge, since it would have to utilize the limited negative space around placed items and provide enough information for users to read. Design decisions also have to be made about what occurs when users actually pick up the can to take a drink. Does the tray change dynamically every time something is shifted? Or do the items and their information get frozen on the tray after a certain point, so that users can actually read it even if they take everything off the tray. Also, last but not least: what would happen when students take these trays for a little fun in the winter?