The Lowry Caper

By

Zachary Patterson
The Mission

• To smuggle loot out of Lowry back to the dorm
• Getting the food out is the easy part
• The problem is decided what food needs to be smuggled
Legality and Such

• I’m not saying that I take food out of Lowry or that anyone does, nor do I condone it.

• But if someone did decide to “borrow” some food, a guide would be helpful.

• Also, Lowry security can use this model to gain new understanding of the criminal mind.
A Thinking Machine

• A computer can be used to model this situation, but how…

• A DFA doesn’t have enough power to remember what's already been taken

• And this example is way too simple for a TM

• What I needed was something in the middle, unfortunately nothing like that exists so I invented something new
Genius and Inventor

• I call it the Pushdown Automata or PDA
• This wonderful model has states like a DFA and it has a memory called a “stack”
• And it works perfectly for this little dilemma
Particulars

- The PDA, titled PDA 1.0, takes a uninary input of $0^n$ where $n$ is the number of available pockets.
- When finished PDA 1.0’s stack will contain the food items placed into the pockets, assuming PDA 1.0 accepts.
- PDA 1.0 assumes, you will take whatever food the station has available then move to the next closest station.
PDA 1.0
Beta Testing

• If all things worked perfectly, most of us would be out of job, cause no one would need tech support.
• After thorough testing, some problems arose with the PDA.
Life Lesson #2

Pizza

= +

Regular Dreaa

Pockets

= =

Regular Dreaa

Sad Pockets
PDA 2.0
Success!!

- After repeated testing, PDA 2.0 is found to be flawless in every way.
Ideas for Future Work

• Implement PDA 2.0 and make it downloadable to cell phone for portability
• Create robots that patrol Lowry looking for the behavior of PDA 2.0 and alert authorities
Details

• Apparently, the PDA has already been invented by some guy, or so it may seem
• No pockets were harmed in the making of this presentation