McMaster Recycling Plant Code

Skills: Python, pandas, numpy, Functional Programming

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Summary

The code for the recycling plant can correctly identify and sort 7 different types of plastics at a 92% rate. The purpose of this code was to help the McMaster community correctly recycle plastics to its best ability, so by using the sensors given and data of the plastics my team and I were able to create an algorithm to successfully sort the recyclables.

The code was created using pandas and NumPy, the data of the plastics and sensors were arranged in excel spreadsheets and were then put through multiple conditional statements to compare and determine which plastic is currently being sensed. Using this algorithm our code is successfully able to identify and sort plastics at a 92% rate.

The greatest difficulties my team encountered for this project was what the conditional statements should compare, it was difficult to determine this since a lot of the data was so similar so as a result it took a lot of time to determine the correct code to use. Eventually though extensive research of the two sensors given and by examining the data our team was able to produce an effective algorithm.

The most enjoyable moments of the creation of this game was the research of the sensors and how they work cohesively with the code, I personally am fascinated by sensors and would like to learn more about them in the future, which is why this part was enjoyable for me.

Code Output

```
Results for running the simulation in "testing" mode:
Total missed containers = 0
Total sorted containers = 1781
Total mistyped containers = 219

2000 containers are processed in 1323.70 seconds
```