Compression algorithms and their functionality for animal health

UNIVERSIDAD EAFIT

Team Presentation

Katherine Benjumea

Valentina Ochoa

Simón Marín

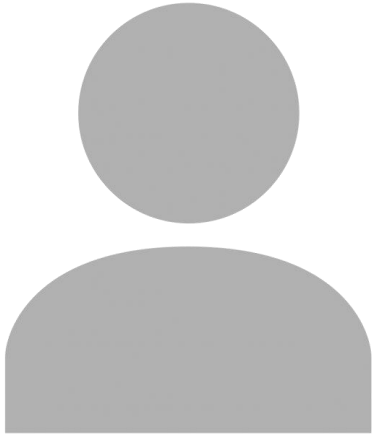
Mauricio Toro

https://github.com/Katherine-Ortiz/ST0245-001

UNIVERSIDAD EAFIT

Team Presentation

Juan Quintana



Dayana Arrieta

Compression Algorithm Design

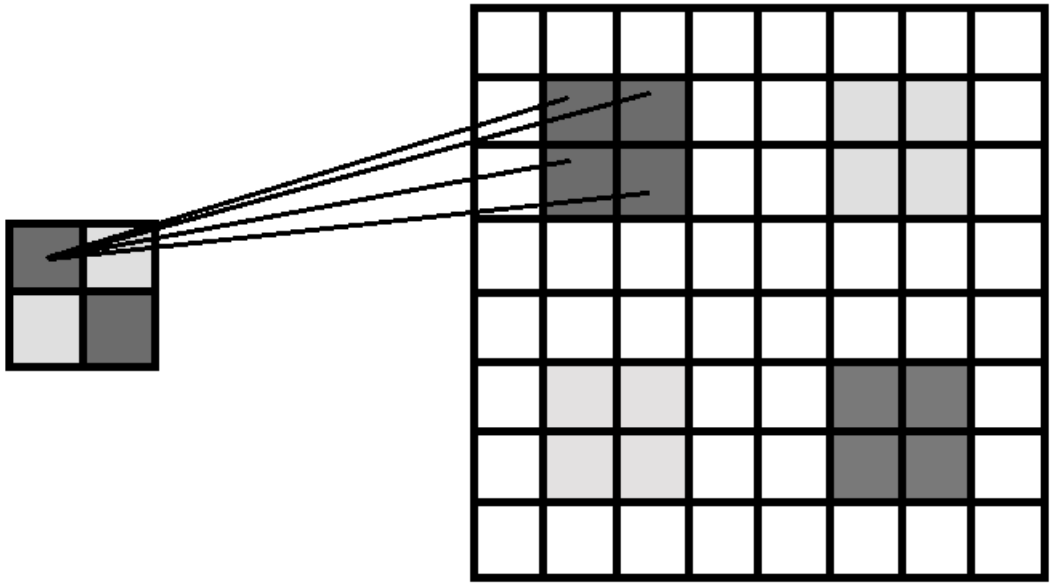


Fig. Image scaling by nearest neighbor

After the process of changing from csv data to images, these images are compressed using the nearest neighbor image scaling method.

LZ77 Compression Algorithm Design

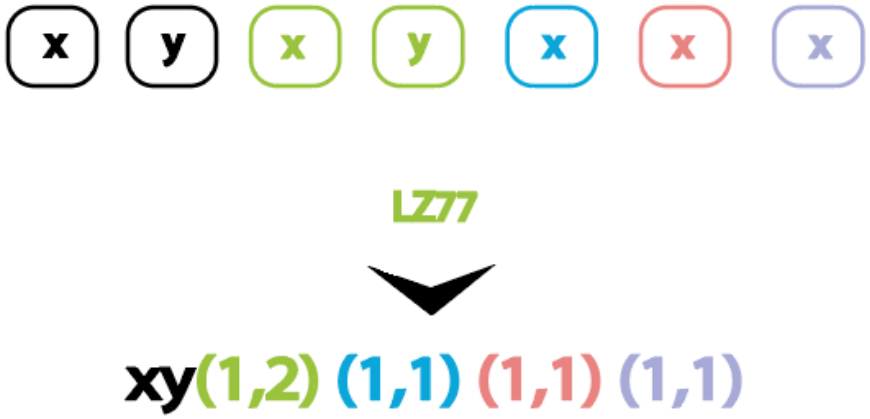


Fig. Compression with LZ77 algorithm

RLE Compression Algorithm Design

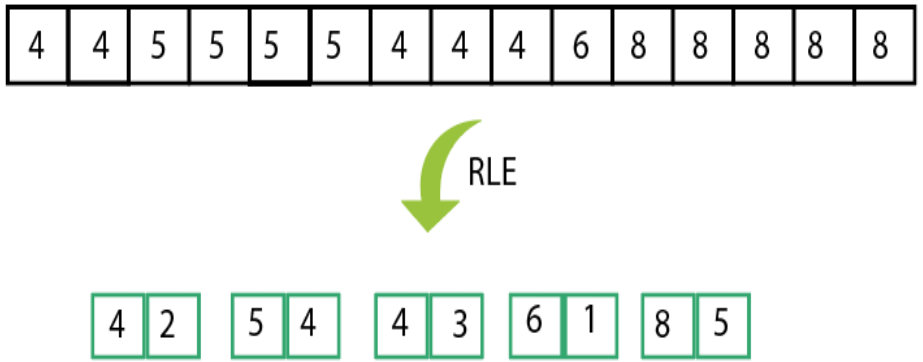
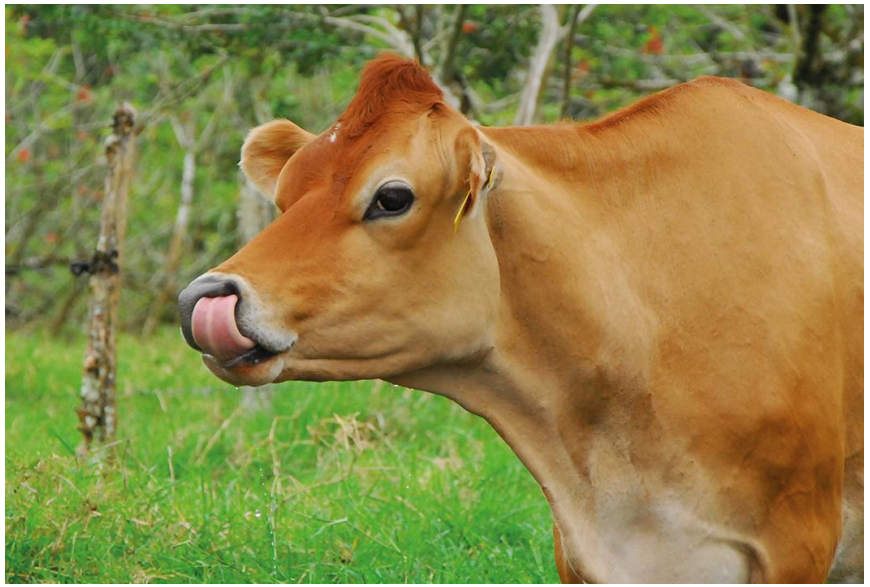


Fig. Compression with algorithm

LZ77 Compression Algorithm Complexity

	Time Complexity	Memory Complexity
Image compression	O(N)	O(N)
Image decompression	O(N)	O(N)

Time and memory complexity of the LZ77 algorithm. N is the input/csv file.

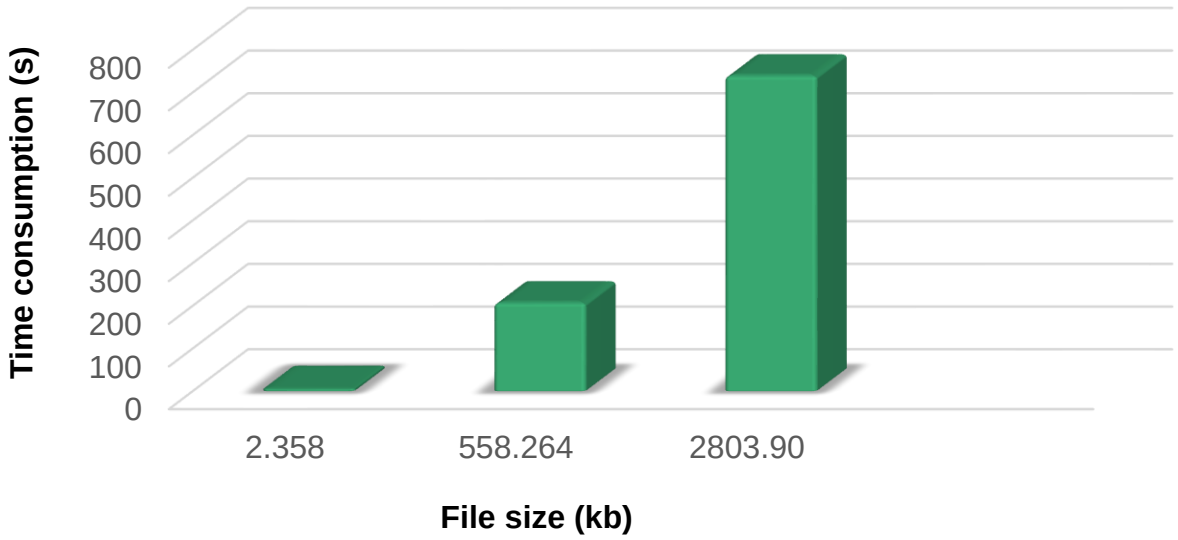


RLE Compression Algorithm Complexity

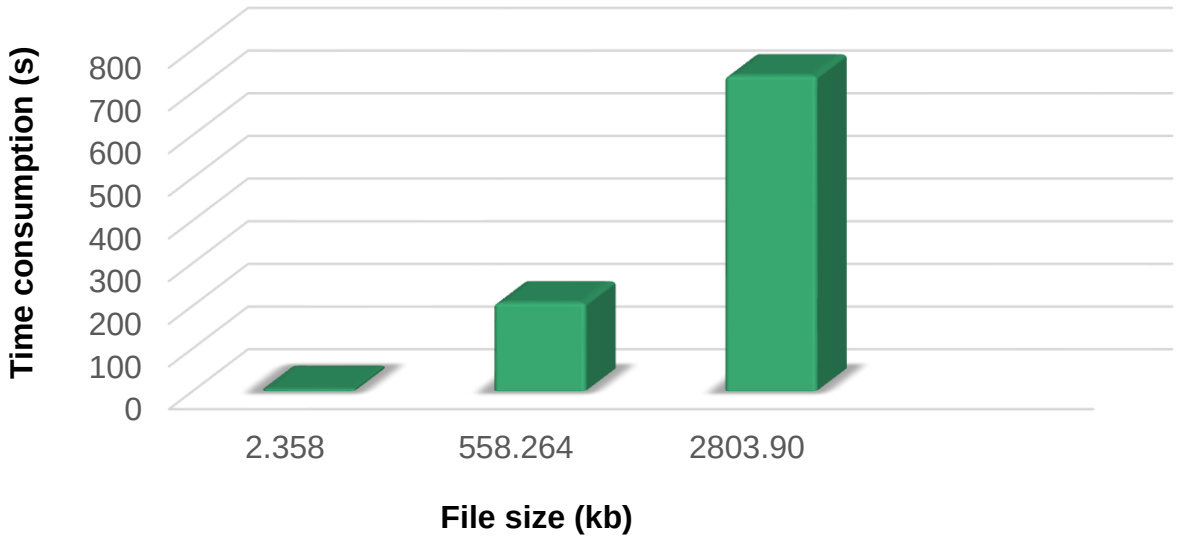
	Time Complexity	Memory Complexity
Image compression	O(N)	O(N)
Image decompression	O(N*M)	O(N)

Time and memory complexity of the Run Length encoding algorithm. N is the input and M is the length of the array.

LZ77 Time and Memory Consumption



RLE Time and Memory Consumption



RLE Average Compression Ratio

	Compression Ratio
Healthy Cattle	2 : 1
Sick Cattle	2 : 1

Average compression ratio for Healthy Cattle and Sick Cattle.

LZ77 Average Compression Ratio

	Compression Ratio
Healthy Cattle	2 : 1
Sick Cattle	2 : 1

Average compression ratio for Healthy Cattle and Sick Cattle.

THANK YOU!

Supported by

The first author is supported by a Sapiencia scolarship, the second author is supported by Mi talento, mi futuro scolarship, the third author is supported by Generación-E(Excelencia) scolarship and the fourth author is supported by El hijo del empleado scholarship. All the authors would like to thank Isabel Piedrahita Velez and Kevin Sossa Chavarria.