Section 01.3 - Compression

Layer 3: ISA Machine

Syllabus Content Section 01: Information Representation

S01.3.1 Show understanding of the need for and examples of the use of compression

---

Compression is make things take up less space (reduce file size)
`Lossy Compression`: Data is lost; Decompressed file is not the same as the original
`Lossless Compression`: type of compression that allows original data to be perfectly reconstructed from compression

S01.3.2 Show understanding of lossy and lossless compression and justify the use of a method in a given situation

---

> Lossy Compression:

- remoce redundant date
- Creates smaller file size
- Worse quality

> Lossless Compression:

- Keeps 100% of the information
- Less free space than lossy after compression
- Better quality

S01.3.3 Show understanding of how a text file, bitmap image, vector

graphic and sound file can be compressed

Including the use of run-length encoding (RLE)

> Lossy Compression:

- sound
- Images
- Video

> Lossless Compression:

- Text
- Vector

`Run-length Encoding`: compression in which sequences with same data value in many consecutive values are stored as a single data value and count

> Example:
> $CCCCCCCCCCWCCCCCCCCCCPPP$ Can be written as $10C1W10C3P$