FACULTY OF ENGINEERING
AND ARCHITECTURE

INFORMATION THEORY
PROJECT AUDIO CD

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PRACTICAL

- Groups of 3-4 people (already made)
  deadline: 30th of April
- Hand in printed report to Stef Vandermeeren
  In mailbox at the TELIN department (2nd floor).
  How to get there : https://telin.ugent.be/telin/#contact
- Upload matlabcode to Ufora
  zip-file: groupXX.zip with a folder groupXX
- Oral defense at the end of the semester (planning to be announced)
- Score: 20% of total (at least 8/20 needed to pass the course!)

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COMPACT DISC DIGITAL AUDIO

- Introduced by Sony and Philips in 1980

First commercially released CD player (1982)

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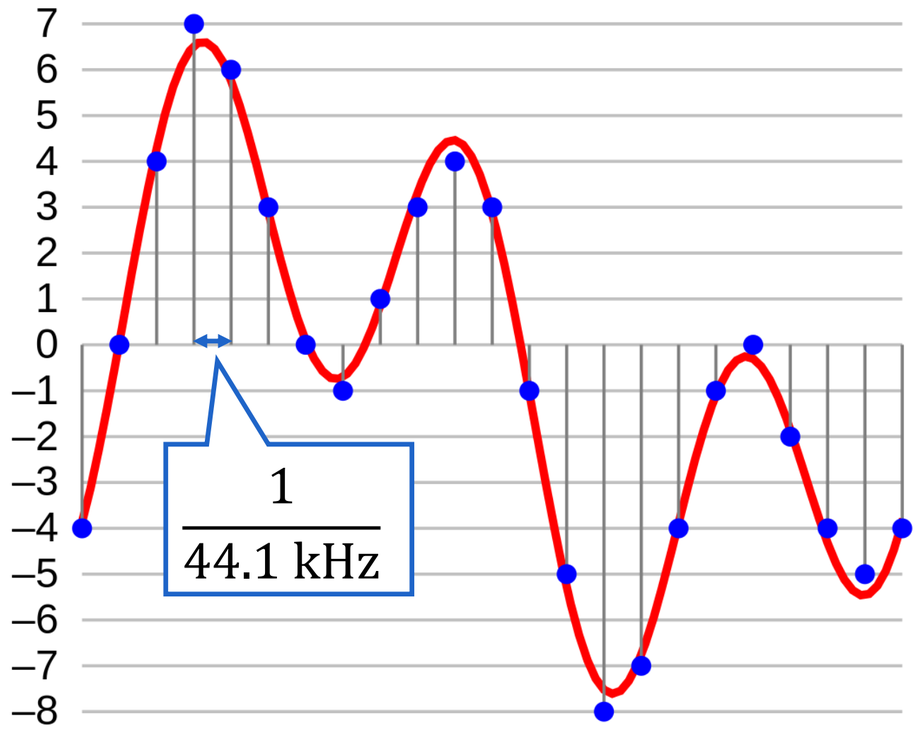
COMPARISON WITH ANALOG AUDIO

- Analog audio: scratches and noise in readout impair the sound

- Digital audio: error correction allows perfect recovery of the original digital audio

DIGITAL AUDIO

– 16 bit linear PCM, F_s = 44.1 kHz



Example: 4 bit linear PCM

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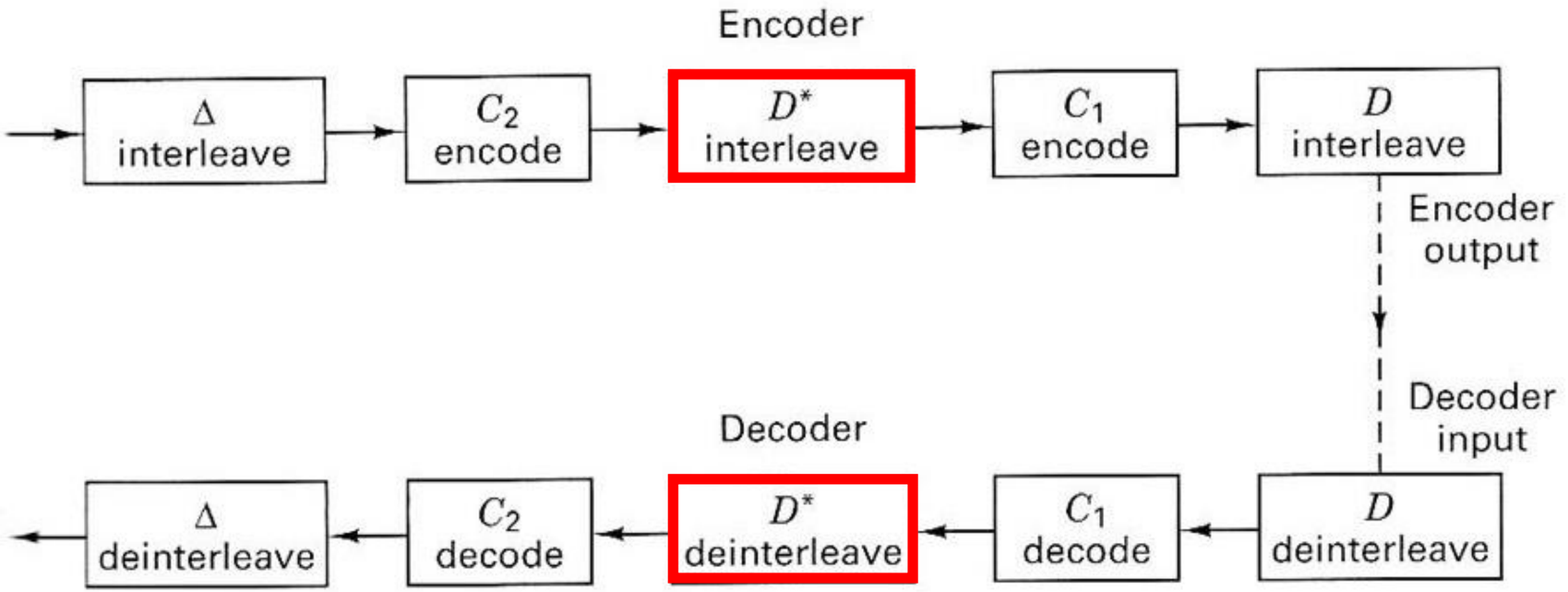
CROSS-INTERLEAVED RS CODING

- Coding to protect from scratches, fingerprints, etc.
- Two Reed-Solomon codes separated by an interleaver

  → result failed decoding C_1 spread over multiple codewords C_2



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PROJECT INFORMATION

- Assignment available on Ufora
- The project is implemented in MATLAB
- A number of files will be available on Ufora, you have to complete the given functions.
- Input and output arguments of the functions cannot be altered.