CSCI576 Assignment 1 Report

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Part 1

Written Questions

Most of this example applies to `article` and `book` classes as well as to `report` class. In `article` class, however, the default position for the title information is at the top of the first text page rather than on a separate page. Also, it is not usual to request a table of contents with `article` class.

Q 1

Solutions:

- $N_l = 450$
  $N_p = 520$
  $N_{FPS} = 25$
  P=12 bits per pixel for 4:2:0 scheme
  $N_l \cdot N_p \cdot N_{FPS} \cdot P = 7.02 \times 10^7$ bits/s.
  So, the bit-rate produced by the camera is 7.02×10^7 bits/s.

- $4 \times 8 + 6 + 6 = 44$ bits per 4 pixels.
  So $P' = 11$ bits per pixel.
  The bit-rate of the re-quantized signal will be
  $N_l \cdot N_p \cdot N_{FPS} \cdot P' = 6.435 \times 10^7$ bits/s. 10 minutes video will contain
  $6.435 \times 10^7 \times 10 \times 60 \div 8 \div 1024 \div 1024 \div 1024 \approx 4.49$ GB.
  So at least 4.5 GB storage for the disk to store the video.

But note that—unlike the `book` and `report` classes—the `article` class does not have a "chapter" command.