- No low level details
    - Only standard elements e.g. details of DCT transform - algorithm and implementation of DCT are much different i.e. what can you do with the result fo transforming the data... once DCT is done, what does it allow you to do.. what can be done with the result.
- No colour space transformations (no code or formula)
    - But the decision level elements are needed. If you make the 2D transform, 64 values coming in and 64 values going out. After DCT you can do things such as quantisation, e.g. take subset of coefficients (could not do that before DCT).
- Don't have to know much about entropy coding (huffman, run length, variable length)
- Nothing on chroma keying or matting

STRUCTURE

Q1 - Image Coding

- All about JPEG
- Baseline jpeg(no code) - optional color space transform, chroma sub-sampling

Q2 - Audio / Video

- Video codec MPEG-1
    - Techniques realised
    - Block based (each block coded as if it was its own image)
    - Motion compensated
        - Searching for matches
        - Assigning matches
        - Motion vector searches
            - Is there a certain threshold if something is below a certain amount then maybe don't search for motion at all
- More on video than audio here
- Audio codec MPEG-3
    - Transform based
    - For MP3 do analysis (looking at frequency composition)
    - Audio frame - set number of audio samples (this is going to form a piece of data to be processed). Can look at frequencies to decide what will be kept and discarded.
    - What frequencies need to be kept - sampling rate / amount of data you will have
    - MP3 workflow algorithm (only high-level) - steps going from input data to digitised signal

Q3 - Media Delivery

- Looked at this in the context of data networks (most relevant to CS students)
- How to get acceptable performance with media delivery
- HTTP based solutions, emphasis on MPEG DASH
- HLS + others
- EVerybody moving towards support for DASH
- Trying to move stuff to client side overall
    - job of client to look at environment
    - based on that request appropriate content
    - before was done on server side
    - changing because of mobile devices with poor wifi / great wifi laptops etc - need client to assess quality of connection - makes it scalable
- How to integrate this into HTML5,
    - integrating media into the Web. How is HTML involved to cope with growth of audio and video data.
    - HTML5 website have some elements that are not regular media...canvas
    - Also have JS and need browser support
    - JPEG DASH many standards
        - XML based description of the content
        - MPEG based encoding
        - HTTP based transfer.
- Dealing with data networks
    - Got challenges such as reliability and smooth playback
    - Timing is a problem..time race element
    - If something not available to be played
        - Need to recover
        - Or conceal
    - Smooth playback - planning and schedule