Video Resolution Adjuster

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CmpE 484

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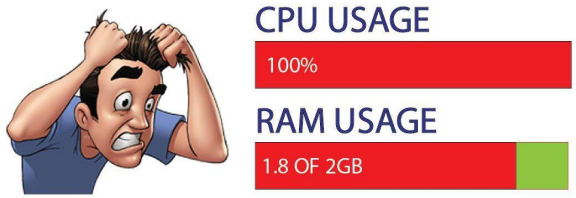
Outline

What was our project?

- Playing high resolution(4K/8K) videos on old PCs
- High CPU and Memory usage
- Audio/Video synchronization or drop issues
- Having only one resolution of the video



What was our project?

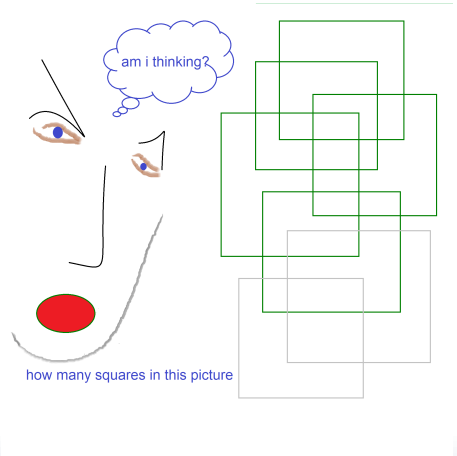
- Saving different lower resolutions after downloading
  - Decompress
  - Change resolution
  - Compress again
- Giving a chance to user to choose his/her target resolution

Codec

- Decoder and encoder by using FFMpeg C++ library
- MPEG supports only *YUV* colorspace
- Colorspace conversion $YUV \Leftrightarrow RGB$

Resizer

- Pure and efficient C++ algorithm
- Has the power for lowering to any resolution 240p, 360p, 480p etc.

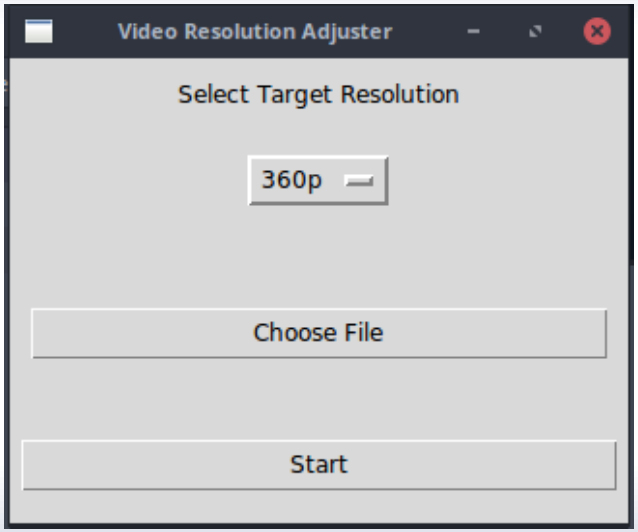


Room for improvement

- Current algorithm finds the closest pixel with respect to the ratio between original and target resolutions.
- The original aspect ratio of the video is not kept.
- The algorithm could benefit from concurrent processing.
- Audio encoding could be added.
- All video containers could be supported.

User Interface

- A simple GUI with Python Tkinter
- Lowers to 240p, 360p, 480p, 720p and 1080p resolutions.



The End

Thank you for listening.