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Assignment : Conversion of SD resolution (640 x 480px) videos to HD resolution (1280 x 720px) videos

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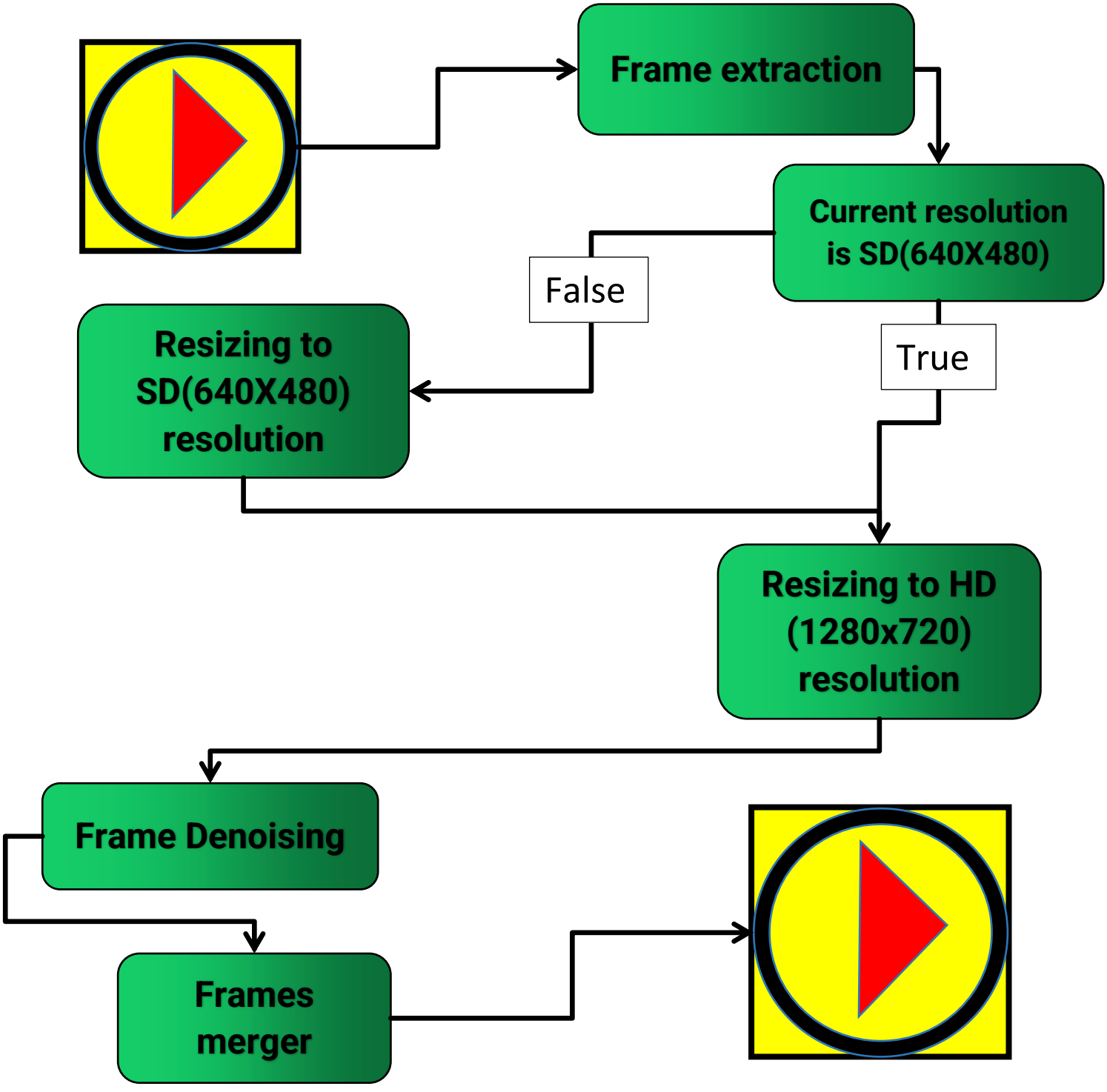
The solution approach is as follows



The steps followed to enhance the video are:

- Frames are first extracted and stored in a “media/temp/” folder.
- The resolution is checked for Standard Definition (640x480)
- If the current resolution is not SD it will be resized to SD first and then to HD.
- If the current resolution is already SD, then it will be directly resized to HD.
- Now when stretched to HD (1280X720), ultimately a noise has been added to the frames now.
- At the next step, A denoiser function has been written and used to denoise each stretched frame.
- Once all the frames are denoised they are now ready to get merged in a sequence to form a new video of High Definition.

The code basically takes a path to video and output video’s title as an input and stores the output video in “media/output/” folder.

The code and the entire assignment can be found in the the following link

Github : https://github.com/meghna-parvathi-sannidhanam/VidClarity.git

I encountered a problem using a proper diffusion model as the official Hugging Face website was unreachable ultimately leading to no access to any official documentation. Some state of the art models like **quick diffusion** are considered but I was limited with my resources. Hence, I used a normal denoising technique to complete the task.

Thank you so much for your consideration.

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